ISSN: 2564-6850
e-ISSN: 2564-7032

TÜRK CERRAHİ DERNEĞİ
1929
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# Turkish Journal of Surgery

The abstracts of the 11th Surgical Research Congress of the Turkish Surgical Society

VOLUME 40
ISSUE Suppl-1
FEBRUARY 2024

www.turkjsurg.com

Turkish Journal of Surgery
Volume 40 • Issue Suppl-1 • February 2024 • Page 1-68

Turkish
Journal of Surgery

VOLUME 40
ISSUE Suppl-1
DECEMBER 2024

Published by Turkish Surgical Society.

**Owner/Editorial Manager**
Ahmet Serdar KARACA
*(Owner on behalf of the Turkish Surgical Society)*

**Print ISSN 2564-6850**
**Elektronic ISSN 2564-7032**

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**Publication Type:** Periodical
**Place of Printing:** Step Dijital
İvedik Organize San. 1420. Cadde No: 58/1-2-3-4-5
Ostim-Yenimahalle/ANKARA
Phone: 0 (312) 395 85 71-72
**Printing Date:** 26 February 2024

Turkish
Journal of Surgery

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Turkish Journal of Surgery (Turk J Surg) is the official, peer reviewed, open access publication of the Turkish Surgical Society and Turkish surgical community. The journal is published quarterly on March, June, September and December and its publication language is English.

The aim of the Turkish Journal of Surgery is to publish high quality research articles, review articles on current topics and rare case reports in the field of general surgery. Additionally, expert opinions, letters to the editor, scientific letters and manuscripts on surgical techniques are accepted for publication, and various manuscripts on medicine and surgery history and ethics, surgical education and the field of forensic medicine are included in the journal.

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The journal is printed on an acid-free paper.

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# INSTRUCTIONS TO AUTHORS

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Manuscripts submitted to the journal will first go through a technical evaluation process by the editorial office staff to ensure that the manuscript has been prepared and submitted in accordance with the journal's guidelines. Submissions that do not conform to the journal's guidelines will be returned to the submitting author with technical correction requests.

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**Title page:** A separate title page should be submitted with all submissions, which should include:

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- Grant information and detailed information on the other sources of support,
- Name, address, telephone (including the mobile phone number) and fax numbers, and email address of the corresponding author,
- Acknowledgment of the individuals who contributed to the preparation of the manuscript but who do not fulfill the authorship criteria.

**Abstract:** English abstract should be submitted with all submissions except for Letters to the Editor. The abstract of Original Articles should be structured with subheadings (Objective, Material and Methods, Results, and Conclusion). Please check Table 1 below for word count specifications.

**Keywords:** Each submission must be accompanied by a minimum of three to a maximum of six keywords for subject indexing at the end of the abstract. The keywords should be listed in full without abbreviations. The keywords should be selected from the National Library of Medicine, Medical Subject Headings database (https://www.nlm.nih.gov/mesh/MBrowser.html).

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**Original Articles:** This is the most important type of article since it provides new information based on original research. The main text of original articles should be structured with Introduction, Material and Methods (with subheadings), Results, Discussion, Conclusion subheadings. Please check Table 1 for the limitations for Original Articles.

Statistical analysis to support conclusions is usually necessary. Statistical analyses must be conducted in accordance with international statistical reporting standards (Altman DG, Gore SM, Gardner MJ, Pocock SJ. Statistical guidelines for contributors to medical journals. Br Med J 1983; 7: 1489-93). Information on statistical analyses should be provided with a separate subheading under the Material and Methods section and the statistical software that was used during the process must be specified.

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**Review Articles:** Reviews with high citation potential prepared by authors with extensive knowledge on a particular field and whose scientific background has already been proven by a high number of publications in the related field are welcomed. These authors may even be invited by the journal. Reviews should describe, discuss, and evaluate the current level of knowledge of a topic in clinical practice and should guide future studies. The main text should contain Introduction, Clinical and Research Consequences, and Conclusion sections. Please check Table 1 for the limitations for Review Articles.

**Case Reports:** There is limited space for case reports in the journal, and reports on rare cases or conditions constituting challenges in diagnosis and treatment, those offering new therapies or revealing insight not included in the literature, and interesting and educative case reports are accepted for publication. The text should include Introduction, Case Presentation, Discussion, and Conclusion subheadings. Please check Table 1 for the limitations for Case Reports.

**Video Articles:** We do encourage the submission of the video articles which report interesting cases and technical methods.

The details of the review process are below.

- All videos will be peer reviewed.
- All videos will be published on the journals official Web site.
- Article length: It should not exceed 500 words.
- Reference Number: Not to exceed 5 references

Diagnosis, surgical technique and outcome should be summarized. All important steps and aspects of the surgery should be mentioned in the video. If it is a new surgical technique, appropriately labeled and cited video materials may be used. Authors can use a rare case they have encountered, a surgical technique, or videos using modern technological devices.

The following items must be provided:

- The file of the video written in Word format.
- A completed copy of the online broadcast consent form (form will be prepared and linked), together with completed copies of patient consent forms, if appropriate.
- All videos must contain an English narration.
- All videos should also be in the highest resolution possible, more details on accepted file types and resolution are available at this link (authors' video article submission guidelines; https://turkjsurg.com/video-article-guidelines ).
- The duration of the videos should not exceed five minutes and the maximum file size should be 300Mb.

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All research involving human participants must have been approved by the authors' Institutional Review Board (IRB) or by equivalent ethics committee(s) and must have been conducted according to the principles expressed in the Declaration of Helsinki. Authors should be able to submit, upon request, a statement from the IRB or ethics committee indicating approval of the research. The Journal reserves the right to reject work believed to have not been conducted in a high ethical standard, even when formal approval has been obtained.

**Table 1.** Limitations for each manuscript type

| Type of manuscript | Word limit | Abstract word limit | Reference limit | Table limit | Figure limit |
|---|---|---|---|---|---|
| Original Article | 5000 | 250 (Structured) | 50 | 6 | 7 or total of 15 images |
| Review Article | 5000 | 250 | 50 | 6 | 10 or total of 20 images |
| Case Report | 1500 | 250 | 15 | No tables | 10 or total of 20 images |
| Surgical Methods | 500 | No abstract | 5 | No tables | 10 or total of 20 images |
| Letter to the Editor | 500 | No abstract | 5 | No tables | No media |

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Subjects must have been properly instructed and have indicated that they consent to participate by signing the appropriate informed consent paperwork. Authors may be asked to submit a blank, sample copy of a subject consent form. If consent was verbal instead of written, or if consent could not be obtained, the authors must explain the reason in the manuscript, and the use of verbal consent or the lack of consent must have been approved by the IRB or ethics committee.

**Animal Research**

All animal research must have approval from the authors' Institutional Animal Care and Use Committee (IACUC) or equivalent ethics committee(s), and the research must have been conducted according to applicable national and international guidelines. Approval must be received prior to beginning the research.

Manuscripts reporting animal research must state in the Methods section: The full name of the relevant ethics committee that approved the work, and the associated permit number(s). Where ethical approval is not required, the manuscript should include a clear statement of this and the reason why. The author should provide any relevant regulations under which the study is exempt from the requirement of approval.

**Tables**

Tables should be included in the main document, presented after the reference list, and numbered consecutively in the order they are referred to within the main text. A descriptive title must be placed above the tables. Abbreviations used in the tables should be defined below the tables by footnotes (even if they are defined within the main text). Tables should be created using the "insert table" command of the word processing software and they should be arranged clearly to provide easy reading. Data presented in the tables should not be a repetition of the data presented within the main text but should be supporting the main text.

**Figures and Figure Legends**

Figures, graphics, and photographs should be submitted as separate files (in TIFF or JPEG format) through the submission system. The files should not be embedded in a Word document or the main document. When there are figure subunits, the subunits should not be merged to form a single image. Each subunit should be submitted separately through the submission system. Images should not be labeled (a, b, c, etc.) to indicate figure subunits. Thick and thin arrows, arrowheads, stars, asterisks, and similar marks can be used on the images to support figure legends. Like the rest of the submission, the figures too should be blind. Any information within the images that may indicate an individual or institution should be blinded. The minimum resolution of each submitted figure should be 300 DPI. To prevent delays in the evaluation process, all submitted figures should be clear in resolution and large in size (minimum dimensions: 100 × 100 mm). Figure legends should be listed at the end of the main document.

All acronyms and abbreviations used in the manuscript should be defined at first use, both in the abstract and in the main text. The abbreviation should be provided in parentheses following the definition.

When a drug, product, hardware, or software program is mentioned within the main text, product information, including the name of the product, the producer of the product, and city and the country of the company (including the state if in the USA) should be provided in parentheses in the following format: "Discovery St PET/CT scanner (General Electric, Milwaukee, WI, USA)"

All references, tables, and figures should be referred to within the main text and numbered consecutively in the order they are referred to within the main text.

Limitations, drawbacks, and the shortcomings of original articles should be mentioned in the Discussion section before the conclusion paragraph.

**References**

While citing publications, preference should be given to the latest, most up-to-date publications. If an ahead-of-print publication is cited, the DOI number should be provided. Authors are responsible for the accuracy of references. Only references cited in the text should be included in the reference list. The reference list must be numbered according to the order of mention of the references in the text. In the main text of the manuscript, references should be cited using Arabic numbers in parentheses. Journal titles should be abbreviated in accordance with the journal abbreviations in Index Medicus/MEDLINE/PubMed. When there are six or fewer authors, all authors should be listed. If there are seven or more authors, the first six authors should be listed followed by "et al." The reference styles for different types of publications are presented in the following examples.

**Journal Article:** Rankovic A, Rancic N, Jovanovic M, Ivanović M, Gajović O, Lazić Z, et al. Impact of imaging diagnostics on the budget - Are we spending too much? Vojnosanit Pregl 2013; 70: 709-11.

**Book Section:** Suh KN, Keystone JS. Malaria and babesiosis. Gorbach SL, Barlett JG, Blacklow NR, editors. Infectious Diseases. Philadelphia: Lippincott Williams; 2004. pp. 2290-308.

**Books with a Single Author:** Sweetman SC. Martindale the Complete Drug Reference. 34th ed. London: Pharmaceutical Press; 2005.

**Editor(s) as Author:** Huizing EH, de Groot JAM, editors. Functional reconstructive nasal surgery. Stuttgart-New York: Thieme; 2003.

**Conference Proceedings:** Bengisson S. Sothemin BG. Enforcement of data protection, privacy and security in medical informatics. In: Lun KC, Degoulet P, Piemme TE, Rienhoff O, editors. MEDINFO 92. Proceedings of the 7th World Congress on Medical Informatics; 1992 Sept 6-10; Geneva, Switzerland. Amsterdam: North-Holland; 1992. pp. 1561-5.

**Scientific or Technical Report:** Cusick M, Chew EY, Hoogwerf B, Agrón E, Wu L, Lindley A, et al. Early Treatment Diabetic Retinopathy Study Research Group. Risk factors for renal replacement therapy in the Early Treatment Diabetic Retinopathy Study (ETDRS), Early Treatment Diabetic Retinopathy Study Kidney Int: 2004. Report No: 26.

**Thesis**: Yılmaz B. Ankara Üniversitesindeki Öğrencilerin Beslenme Durumları, Fiziksel Aktiviteleri ve Beden Kitle İndeksleri Kan Lipidleri Arasındaki Ilişkiler. H.Ü. Sağlık Bilimleri Enstitüsü, Doktora Tezi. 2007.

**Manuscripts Accepted for Publication, Not Published Yet:** Slots J. The microflora of black stain on human primary teeth. Scand J Dent Res. 1974.

**Epub Ahead of Print Articles:** Cai L, Yeh BM, Westphalen AC, Roberts JP, Wang ZJ. Adult living donor liver imaging. Diagn Interv Radiol 2016 Feb 24. doi: 10.5152/dir.2016.15323. [Epub ahead of print].

**Manuscripts Published in Electronic Format:** Morse SS. Factors in the emergence of infectious diseases. Emerg Infect Dis (serial online) 1995 Jan-Mar (cited 1996 June 5): 1(1): (24 screens). Available from: URL: http:/ www.cdc.gov/ncidodlEID/cid.htm.

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# CONTENTS

## THE ABSTRACTS OF THE 11TH SURGICAL RESEARCH CONGRESS OF THE TURKISH SURGICAL SOCIETY

## DECEMBER 15TH-17TH 2023 ANKARA, TÜRKİYE

S-1017
DOI: 10.47717/turkjsurg.2024.S1

# Review of 2023 general surgery studies from Türkiye registered in ClinicalTrials.gov

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## ABSTRACT

**Objective:** The aim of this study was to closely examine the studies in the field of general surgery registered in ClinicalTrials.gov from Türkiye in 2023.

**Material and Methods:** In 2023, the studies registered in ClinicalTrials.gov by filtering Türkiye/Türkiye as the localization were examined one by one, and those conducted in the field of general surgery were included in the study. Information such as the ClinicalTrials.gov uploader of these studies, current status of the study, subject, start and end dates, details of the study type, in which centers it was conducted, sponsor information, and data size were recorded. Qualitative variables were expressed as rates and percentages, and quantitative variables were expressed as mean (minimum-maximum).

**Results:** A total of 86 studies were included. Eighty-four were national (97.7%) and two were international (2.3%). Only 5 (5.8%) were completed. Seventy-seven were single center (89.5%), 9 were multicenter (10.5%). Fifty-seven (66.3%) were interventional studies and 29 (33.7%) were observational. The majority of observational studies were prospective (66.1%) and cohort (55.2%) studies. The most common studies were for supportive treatment (29.1%). Interventional studies were most often on behavioral interventions (30.2%). The mean number of subjects was 154.03. Of the studies, 62.8% were randomized. Most were not blinded (46.5%). The mean study duration was 7.7 (1-48) months. Studies were most frequently conducted in the field of breast cancer (25.6%). On a provincial basis, studies were most frequently conducted in İstanbul (29.1%) and Ankara (17.4%).

**Conclusion:** This is the first study in which Türkiye/Türkiye-based studies registered in ClinicalTrials.gov were closely analyzed. The most important result of our study is that most of the studies were interventional and randomized. Further studies will provide more detailed information on this subject.

**Keywords:** ClinicalTrials.gov, general surgery, studies

**Table 1.** Details of the studies

| | | |
|---|---|---|
| **Region** | | |
| National | 84 | %97.7 |
| International | 2 | %2.3 |
| **Current Status of The Study** | | |
| Patient recruitment has not started | 35 | %40.7 |
| Patient recruitment started | 44 | %51.2 |
| Patients invited | 2 | %2.3 |
| Study completed | 5 | %5.8 |
| **Number of Centers** | | |
| Single center | 77 | %89.5 |
| Very center | 9 | %10.5 |
| **Sponsor** | | |
| Official institution (university, hospital) | 85 | %98.8 |
| Industrial company | 1 | %1.2 |
| **Study Type** | | |
| Interventional | 57 | %66.3 |
| Observational | 29 | %33.7 |
| **Objective** | | |
| Protection | 10 | %11.6 |
| Treatment | 21 | %24.4 |
| Diagnostic | 24 | %27.9 |
| **Supportive Treatment** | 25 | %29.1 |
| Other | 6 | %7 |

**Table 1.** Details of the studies (continue)

| | | |
|---|---|---|
| **Intervention** | | |
| Medicine | 22 | %25.6 |
| Device | 14 | %16.3 |
| Behavior | 26 | %30.2 |
| Procedure | 8 | %9.3 |
| Other | 16 | %18.6 |
| **Included population** | | |
| Patients | 60 | %69.8 |
| They are healthy | 2 | %2.3 |
| Both | 24 | %27.9 |
| **Number of Patients** | 154.03 (6-5000) | |
| **Randomization** | | |
| Randomize | 54 | %62.8 |
| Not randomized | 28 | %32.5 |
| Unknown | 4 | %4.6 |
| **Working Time** | 7.7 (1-48) | |

| **Table 2.** Topics and distribution of cities | | |
|---|---|---|
| **Topics** | **Number** | **Percentage** |
| Proctology | 6 | %7 |
| Laparoscopic surgery | 3 | %3.5 |
| Colorectal cancer | 4 | %4.6 |
| Trauma and emergency surgery | 4 | %4.6 |
| Obesity surgery | 8 | %9.3 |
| Endoscopy | 7 | %8.1 |
| Breast cancer | 22 | %25.6 |
| Burn | 1 | %1.2 |
| Operating room equipment | 1 | %1.2 |
| Hepatopancreaticobiliary surgery | 15 | %17.4 |
| Transplantation | 9 | %10.5 |
| Hernia | 3 | %3.5 |
| Upper GI surgery | 3 | %3.5 |
| **City** | | |
| Konya | 2 | %2.3 |
| Antalya | 3 | %3.5 |
| Adana | 4 | %4.6 |
| Mersin | 2 | %2.3 |
| Ankara | 15 | %17.4 |
| Kayseri | 2 | %2.3 |
| Eskişehir | 1 | %1.2 |
| Kütahya | 2 | %2.3 |
| Muğla | 1 | %1.2 |
| Bursa | 2 | %2.3 |
| Çanakkale | 1 | %1.2 |
| Amasya | 1 | %1.2 |
| Yalova | 1 | %1.2 |
| Gaziantep | 1 | %1.2 |
| Sivas | 3 | %3.5 |
| Malatya | 3 | %3.5 |
| İstanbul | 25 | %29.1 |
| İzmir | 1 | %1.2 |
| Samsun | 3 | %3.5 |
| Erzincan | 1 | %1.2 |
| Diyarbakır | 3 | %3.5 |
| Trabzon | 1 | %1.2 |
| Van | 4 | %4.6 |
| Erzurum | 4 | %4.6 |

S-1292

# A new trocar diameter reduction technique in laparoscopic appendectomy

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## ABSTRACT

**Objective:** Laparoscopy is widely used in general surgery because of the comfort it offers to the patient. It has also been widely used in appendectomy surgeries in recent years. The new trend in laparoscopic surgery is to minimize the invasive procedure as much as possible. For this reason, it is preferred to reduce the number and diameter of trocars as much as possible. In our study, we planned to present our trocar diameter reduction strategy in laparoscopic appendectomy.

**Material and Methods:** Laparoscopic appendectomy is performed with two 10 mm trocars and one 5 mm trocar. Closure of the appendiceal stump with a clip and removal of the appendix with an endo-bag requires the use of a 10 mm trocar. Therefore, the appendiceal stump was double tied with 2/0 vicryl suture and cut. The surgical glove was tied in the middle and the finger parts were cut and the entrance of the glove was covered with purse silk suture. The prepared endo-bag was transferred from the camera trocar to the bar and the surrounding sutures were kept outside the trocar. After the appendix was placed in the endo-bag, the endo-bag was removed with the help of a suture.

**Results:** In the early results of our study, no complications were observed in the patients.

**Conclusion:** The method we presented in laparoscopic appendectomy may help to reduce trocar-related complications by decreasing the trocar diameter.

**Keywords:** Appendectomy, laparoscopy

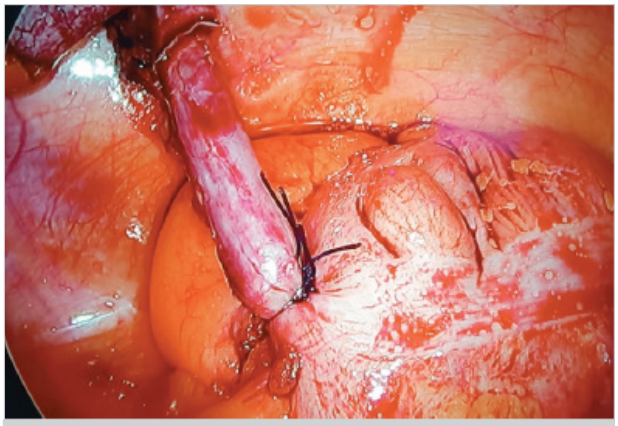

**Figure 1.** Ligating the appendix stump. Appendix stump double ligated with 2/0 vicryl suture.

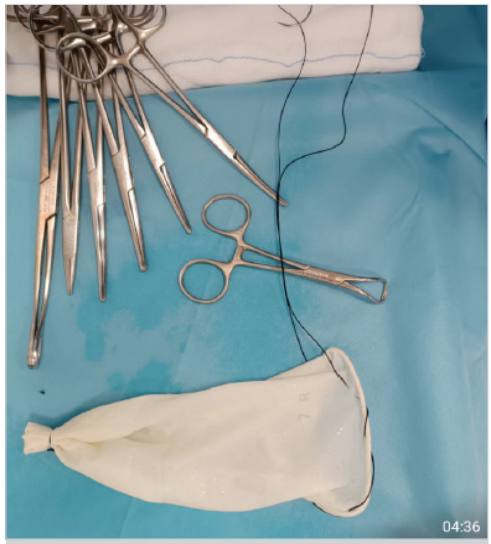


**Figure 2.** Endo-bag preparation. The glove was tied in the middle, the fingers were cut off and the opening was covered with a silk suture.

S-1362

# Changes in fatty acid binding proteins in donors and recipients in living donor liver transplantation: A prospective case-controlled study evaluating ischemia and reperfusion injury

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## ABSTRACT

**Objective:** The aim of this study was to evaluate the levels of A-FABP, I-FABP and L-FABP as possible biomarkers to elucidate ischemia/reperfusion injury-related graft dysfunction, relaparotomy and early postoperative complications leading to mortality in donors and recipients in living donor liver transplantation.

**Material and Methods:** From a cohort of 307 patients recipients (n= 158) and donors (n= 149), 55 recipients who underwent living donor liver transplantation and 33 donors who underwent living donor hepatectomy at İnönü University Liver Transplant Institute between June 2020 and February 2021 were included for analysis of a prospective case-control study. Of the recipients, 46 had Clavien-Dindo grades 3 and 4 complications and 9 had a normal postoperative course. The postoperative course of the donors was uneventful. Demographic, clinical, laboratory and operative characteristics were prospectively recorded. Specific laboratory parameters including A-FABP, I-FABP, L-FABP, IL-6 and MDA were analyzed using enzyme-linked immunosorbent assay (ELISA) in the hepatology research laboratories of our institute. Serum samples were collected preoperatively and on postoperative days one, eight and 30 for routine laboratory tests and specific laboratory parameters.

**Results:** Serum I-FABP, A-FABP, L-FAP and IL-6 were not significantly different between donors and recipients at all time points ($p > 0.05$). However, MDA was significantly higher in recipients at all time points ($p < 0.05$). Evaluation of the course of I-FABP, A-FABP, L-FAP, MDA and IL-6 at the determined time points showed that the changes in the levels of these parameters at the determined time points were significant (all, $p < 0.05$). Specific laboratory parameters did not show a significant change in the recipients over the specified time interval (all, $p > 0.05$). Preoperative A-FABP was significantly higher in recipients with L-FABP complications ($p < 0.05$). Preoperative I-FABP, A-FABP and L-FAP were significantly higher in recipients requiring re-laparotomy ($p < 0.05$).

**Conclusion:** FABP, A-FABP and L-FABP levels were significantly higher in patients with complications. They may be useful markers for prediction of complications. The predictive value of these biomarkers is higher than that of any other laboratory parameter and does not depend on demographic, clinical and operative data of the patients. Further studies are needed to evaluate the efficacy of these new biomarkers.

**Keywords:** Ischemia-reperfusion injury, liver transplantation, fatty acid binding proteins


**Figure 1.** Changes in A. I-FABP, B. A-FABP, C. L-FABP, D. IL-6, E. MDA specific parameters in preoperative and postoperative periods after liver transplantation in recipients.

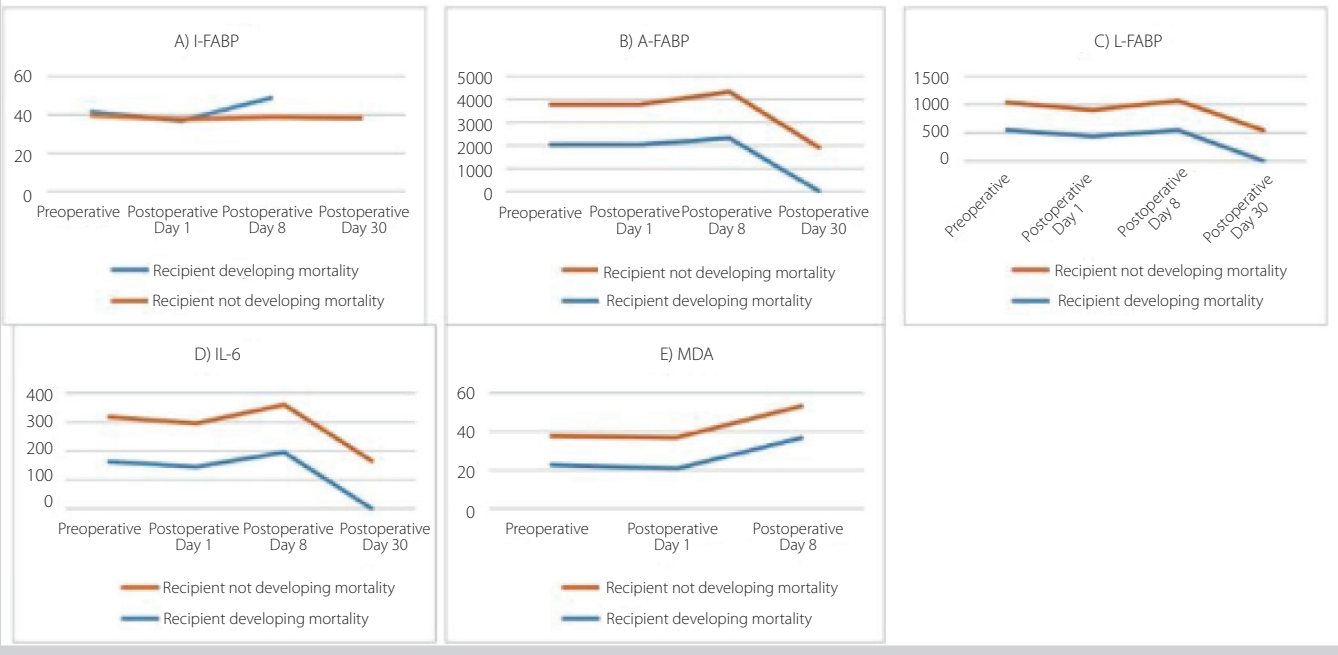


**Figure 2.** Time course of specific parameters in patients with and without mortality.

**Table 1.** Distribution of unique parameters by time period in complicated and uncomplicated recipients

| | Complicated Recipient | Normal Recipient | p |
|---|---|---|---|
| Age (years) | 43 (8-70) | 49 (30-61) | 0.19 |
| **Sex** | | | |
| Female | 21 (%45.7) | 4 (%44.4) | 0.85 |
| Male | 25 (%54.3) | 5 (%55.6) | |
| BMI (kg/m$^2$) | 23.9 (7.7-35.8) | 23 (20.76-28.89) | 0.59 |
| MELD | 40.4 (10.6-41.8) | 16.5 (9.2-32.1) | 0.51 |
| Child-pugh | 9 (5-13) | 9 (5-13) | 0.95 |
| Graft weight (g) | 730 (260-1650) | 660 (400-940) | 0.62 |
| Operation time (min) | 530 (190-1002) | 540 (435-750) | 0.35 |
| Cold ischemia duration (min) | 108 (44-365) | 79 (37-112) | 0.057 |
| Warm ischemia time (min) | 52.5 (22-95) | 65 (15-107) | 0.68 |
| Intraoperative bleeding amount (mL) | 500 (50-5000) | 500 (200-2000) | 0.41 |
| Intraoperative ascites amount (mL) | 250 (0-13000) | 500 (0-14000) | 0.68 |
| I-FABP preoperative | 39.48 (2.48-84) | 14.6 (6.9-22.45) | 0.084 |
| I-FABP (POD1) | 40.5 (12.8-84) | 19.27 (9.43-29.12) | 0.165 |
| I-FABP (POD8) | 23.85 (10.2-84) | 18.3 (17.86-18.76) | 0.410 |
| I-FAP-(POD30) | 21.4 (10.2-84) | 13 (12-14) | 0.448 |
| A-FABP preoperative | 2091.45 (305.5-4200) | 885 (418.2-1351.8) | 0.024 |
| A-FABP (POD1) | 1730 (426.8-4200) | 881.8 (668.3-1095.) | 0.38 |
| A-FABP (POD8) | 1187.6 (697.43-4200) | 964 (943.1-985.03) | 0.68 |
| A-FABP (POD30) | 1328.5 (634.14-4200) | 745.8 (720.2-771.4) | 0.72 |
| L-FABP Preoperative | 479.8 (68.3-1008) | 252.5 (152.4-352.3) | 0.042 |
| L-FABP (POD1) | 547.6 (110.2-1008) | 243.9 (204.6-283.2) | 0.288 |
| L-FABP (POD8) | 344.2 (215.1-1008) | 256.9 (243.9-270) | 0.588 |
| L-FABP(POD30) | 313.02 (207.8-1008) | 243.2 (200.1-286.2) | 0.868 |
| IL-6 preoperative | 135.01 (24.9-336) | 89.9 (38.9-140.9) | 0.103 |
| IL-6 (POD1) | 166.9 (51.5-336) | 90.1 (48.9-131.3) | 0.271 |
| IL-6 (POD8) | 107.4 (54.7-336) | 77.7 (70.1-85.3) | 0.410 |
| IL-6 (POD30) | 115.8 (26-336) | 77.5 (61.01-94.13) | 0.838 |
| MDA preoperative | 13.7 (2.12-50.30) | 3.9 (2.9-4.8) | 0.255 |
| MDA (POD1) | 17.1 (7.3-55.2) | 7.3 (5.7-8.9) | 0.476 |
| MDA (POD8) | 16.9 (4.9-67.6) | 16.2 (7.8-24.6) | 0.098 |
| ALT preoperative | 43 (7-585) | 25 (16-54) | 0.099 |
| ALT (POD1) | 423 (61-1720) | 284 (156-1743) | 0.585 |
| AST (POD1) | 387 (15-1907) | 255 (154-2776) | 0.285 |
| AST (POD8) | 45 (17-288) | 35 (15-94) | 0.266 |
| AST (POD30) | 34 (10-161) | 27 (11-134) | 0.913 |
| GGT preoperative | 83 (21-459) | 46 13-349) | 0.109 |
| GGT (POD1) | 58 (5-255) | 46 (19-124) | 0.811 |
| GGT (POD8) | 168 (22-624) | 110 (28-516) | 0.335 |
| GGT (POD30) | 133 (30-743) | 91 (70-261) | 0.397 |
| T.Bil preoperative | 2.1 (0.33-34) | 2.2 (0.95-20.7) | 0.617 |
| T.Bil (POD1) | 7.1 (2.2-20.1) | 4.1 (3.2-11.7) | 0.228 |
| T.Bil (POD8) | 4.7 (0.87-23) | 2.2 (1.2-14.4) | 0.311 |
| T.Bil (POD30) | 1 (0.33-10.9) | 0.75 (0.45-1.5) | 0.238 |

**Table 1.** Distribution of unique parameters by time period in complicated and uncomplicated recipients (continue)

| | Complicated Recipient | Normal Recipient | p |
|---|---|---|---|
| D.Bil preoperative | 1.2 (0.17-25.9) | 0.95 (0.46-10.6) | 0.165 |
| D.Bil (POD1) | 3.4 (0.5-10.4) | 2.4 (0.83-7.5) | 0.169 |
| D.Bil (POD8) | 2.9 (0.26-12.1) | 1.4 (0.5-10) | 0.266 |
| D.Bil (POD30) | 0.53 (0.17-7.1) | 0.46 (0.28-0.72) | 0.413 |
| INR preoperative | 1.4 (1-2.78) | 1.3 (1.15-2.34) | 0.750 |
| INR (POD1) | 2.5 (1.5-9.8) | 2.9 (1.8-4.6) | 0.432 |
| INR (POD8) | 1.3 (1.01-1.9) | 1.2 (1.1-1.7) | 0.473 |
| INR (POD30) | 1.08 (0.9-2.56) | 1.08 (0.98-1.15) | 0.765 |

**Table 2.** Distribution of specific parameters in recipients with and without relaparotomy according to time periods

| | Recipients Undergoing Relaparatomy | | | Recipients Without Relaparatomy | | | |
|---|---|---|---|---|---|---|---|
| | Median | Minimum | Maximum | Median | Minimum | Maximum | p |
| IFABP (Preop) | 71.29 | 10.61 | 84 | 20.96 | 2.48 | 84 | 0.023 |
| AFABP (Preop) | 2111.19 | 77.8 | 4200 | 849.98 | 1 | 4200 | 0.015 |
| LFABP (Preop) | 1008 | 167.48 | 1008 | 290.62 | 1.56 | 1008 | 0.043 |
| IL-6 (Preop) | 224.25 | 11.93 | 336 | 93.95 | 0.37 | 336 | 0.094 |
| MDA (Preop) | 8.18 | 1.82 | 67.58 | 8.18 | 2.12 | 62.12 | 0.899 |
| IFABP (POD1) | 49.78 | 8.8 | 84 | 21.09 | 2.57 | 84 | 0.058 |
| AFABP (POD1) | 2259.87 | 44.82 | 4200 | 922.44 | 2.66 | 4200 | 0.056 |
| LFABP (POD1) | 653.27 | 19.48 | 1008 | 290.62 | 1.56 | 1008 | 0.058 |
| IL-6 (POD1) | 215.5 | 12.87 | 336 | 93.2 | 1.98 | 336 | 0.079 |
| MDA (POD1) | 13.24 | 6.06 | 55.15 | 13.43 | 4.24 | 46.67 | 0.978 |
| IFABP (POD8) | 23.38 | 8.55 | 84 | 23.57 | 2.4 | 84 | 0.930 |
| AFABP (POD8) | 1310.70 | 29.78 | 4200 | 994.76 | 190.34 | 4200 | 0.324 |
| LFABP (POD8) | 327.71 | 94.89 | 1008 | 307.68 | 11.48 | 1008 | 0.970 |
| IL-6 (POD8) | 133.83 | 17.75 | 336 | 92.55 | 15.11 | 336 | 0.725 |
| MDA (POD8) | 15.4 | 5.41 | 67.58 | 11.21 | 3.33 | 73.33 | 0.255 |
| IFABP(POD30) | 34.64 | 6.56 | 84 | 19.96 | 9.41 | 84 | 0.528 |
| AFABP(POD30) | 1562.38 | 544 | 4200 | 1042.64 | 387.43 | 4200 | 0.305 |
| FABP(POD30) | 509.09 | 146.86 | 1008 | 295.39 | 185.48 | 1008 | 0.717 |
| IL-6 (POD30) | 140.43 | 5.21 | 336 | 102.89 | 15.11 | 336 | 0.560 |

S-1466

# Laparoscopic transabdominal pre-peritoneal approach for incarcerated inguinal hernias, a single center experience

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## ABSTRACT

**Objective:** Incarcerated inguinal hernia cases are a group that we frequently encounter in the emergency department and are usually treated with open surgery. Although the use of minimally invasive surgical techniques in the treatment of inguinal hernia has increased in recent years, laparoscopic approach is rarely preferred in incarcerated cases presenting to the emergency department. In this study, it was aimed to present our results of the cases treated with laparoscopic trans-abdominal pre-peritoneal approach in our clinic.

**Material and Methods:** We retrospectively analyzed peri-op findings, post-op results, and post-discharge outpatient clinic data of patients who underwent emergency surgery for incarcerated inguinal hernia and were treated with laparoscopic TAPP approach between September 2017 and September 2022. Exclusion criteria were patients with preoperative findings of perforation or peritonitis that underwent open surgery with an anterior approach.

**Results:** Of the 20 patients included in the study, 19 (95%) were males, and mean age of the patients was 49 (24-72) years. Mean body mass index of the patients was 26.4 (22.9-33.7). As a result of preoperative anesthesia evaluation, 16 (80%) patients were ASA-II and 4 (20%) patients were ASA-III. In the operation, the hernia sac was reduced into the abdomen under camera vision. In 5 (25%) patients, expansion of the inner ring was required due to reduction difficulty. In 7 (35%) patients with hyperemic intestine in the hernia sac, peristalsis and nutrition were evaluated by waiting and resection was not required. In 2 (10%) patients, necrotic omentum was detected and partial omentectomy was performed. Mean operative time was 94 (65-125) minutes. In the early postoperative period, scrotal edema developed in 3 (15%) patients, scrotal hematoma in 1 (5%) patient, and infection at the port site in 1 (5%) patient. Mean duration of hospitalization was 2.3 (1-5) days. When the outpatient notes of long-term follow-up were analyzed, mean follow-up period was 27 (12-48) months, and recurrence was detected in 1 (5%) patient and open repair was performed.

**Conclusion:** While the preference for laparoscopic treatment in elective inguinal hernia cases is increasing, the safety and efficacy of laparoscopic approach in emergency cases have not been clarified. When the results of our series are examined, we think that laparoscopic TAPP repair in incarcerated inguinal hernia patients is feasible in terms of surgical safety and efficacy considering low morbidity, appropriate operation time, short hospital stay, early return to daily life and acceptable recurrence rates in selected patients in experienced centers.

**Keywords:** Emergency laparoscopic surgery, incarcerated inguinal hernia, TAPP

S-1579

# Our 3-year clinical experience in percutaneous endoscopic gastrostomy in general surgery endoscopy unit

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## ABSTRACT

**Objective:** Patients who require nutritional support and have good gastrointestinal system function but who cannot be fed orally for at least four weeks are candidates for percutaneouse endoscopic gastrostomy (PEG). Indications for PEG include various neurological diseases in which swallowing is impaired, oropharyngeal tumors, fascial trauma, inadequate oral intake due to impaired general condition and decompression. In this study, it was aimed to present our clinical experience in patients undergoing PEG procedure in the general surgery endoscopy unit.

**Material and Methods:** Patients who underwent PEG between June 2020 and February 2023 in the department of general surgery, Gülhane Training and Research Hospital were included in the study. The data of the patients were collected from their file records and demographic data, indications for PEG, early and late complications, and comorbidities were retrospectively analyzed.

**Results:** Forty-two patients were included in the study. Of the patients, 33 (78.6%) were males and 9 (21.4%) were females. Mean age of the patients was 56.9 years (23-92). Nine (21.4%) patients underwent PEG for maxillofacial trauma, 12 (28.6%) for oral intake disorder (general condition disorder), and 21 (50%) for neurogenic dysphagia. In 35 (83.3%) patients, there were no complications related to the procedure, while 3 (7.1%) patients had tube occlusion and 4 (9.5%) patients had wound infection. While 19 (45%) patients had no comorbidity, 23 (55%) patients had comorbidity. No mortality was observed in any patient due to the procedure. In the six-month follow-up, 9 (21.5%) patients died due to comorbidities.

**Conclusion:** Enteral nutrition is a much more physiologic method than parenteral nutrition in terms of long-term nutrition and should be started early in patients who cannot start oral intake for a long time. Wound infection and tube occlusion are common complications of PEG procedure. Therefore, care of the feeding tube and wound site is important. Wound care trainings should be provided better in order to reduce complication rates.

**Keywords:** Percutaneous endoscopic gastrostomy, nutrition, endoscopy

**S-1816**

# Comparison of preoperative incision drawing and perioperative ultrasonography-assisted drawing in patients scheduled for thyroidectomy

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## ABSTRACT

**Objective:** Comparison of preoperative incision drawing and peroperative ultrasonography-assisted drawing in patients scheduled for thyroidectomy. Thyroidectomy is one of the most frequently performed operations in general surgery clinics. Like every operation, this operation also has complications. We try to minimize the complications by providing maximum exploration during the operation. Recently, there are many studies trying to minimize complications by improving the thyroidectomy technique. However, there are almost no studies dealing with incision size. The thyroidectomy incision is determined preoperatively by most surgeons. This incision may be inadequate after the patients are positioned during the operation. Adequate exploration cannot be achieved during the operation. The aim of our study was to determine this incision by peroperative ultrasonography and to compare it with the preoperative incision.

**Material and Methods:** We evaluated 40 patients scheduled for thyroidectomy for benign or malignant causes of the thyroid gland. Preoperative incision was determined in these patients by sitting on the operating table by the surgeon planning the operation. The size of this incision and its distance from the anatomical points used as the basis for the incision were recorded prospectively. Then the same surgeon evaluated the thyroid gland planned to be operated with the help of peroperative ultrasonography. The size of this incision and the distance to the anatomical points based on which the incision was determined were recorded with prospective data. In addition, the age, gender, height, weight, body mass index (BMI), size of large nodules, presence of tumor in the pathology, and the size of tumor if present, were also prospectively recorded. These data were statistically compared with appropriate tests. $p< 0.05$ was considered significant.

**Results:** The tests showed that the preoperative incision size was larger than the intraoperative incision size. The distance of the preoperative incision to the thyroid cartilage was greater than the distance of the intraoperative incision to the thyroid cartilage. The incision in the intraoperative period was smaller.

**Conclusion:** Intraoperative incision is closer to the thyroid cartilage and thus provides a more comfortable exploration. In addition, cosmetically more acceptable results are obtained. Future studies in larger series using more parameters will provide more comprehensive and reliable results.

**Keywords:** Thyroidectomy incision, intraoperative ultrasonography, thyroidectomy complications

**Figure 1.** Determination of preopreative anatomical points and incision.

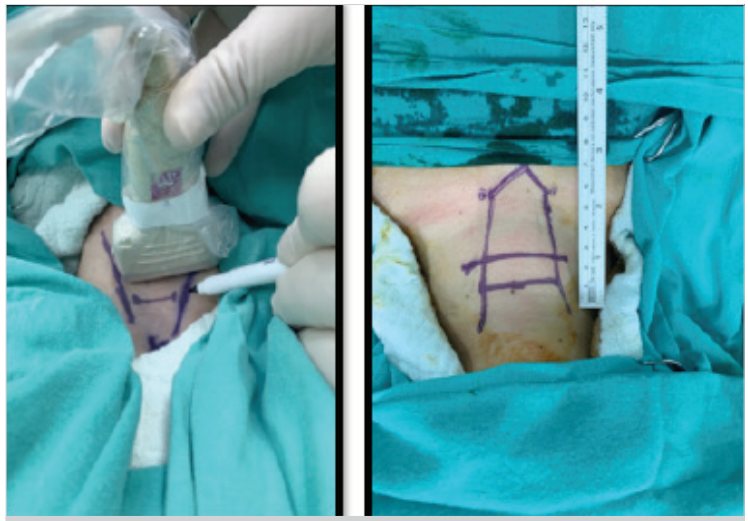

**Figure 2.** Evaluation of the thyroid gland with peroperative ultrasonography, determination of the incision and measurement of the incision size and distance to anatomical points.

**Table 1.** Incision statistics in preoperative and intraoperative periods

| Incision | Pre/Intra | n | Min. | Med. | X | S.S. | Max. |
|---|---|---|---|---|---|---|---|
| Size | Preoperative | 40 | 3.500 | 5.5857 | 5.875 | 1.762 | 13.400 |
| | Intraoperative | 40 | 3.200 | 4.800 | 5.230 | 1.621 | 10.500 |
| Distance to thyroid cartilage | Preoperative | 40 | 1.000 | 2.765 | 2.765 | 1.144 | 6.500 |
| | Intraoperative | 40 | 1.000 | 2.300 | 2.515 | 1.050 | 6.000 |
| Distance to the suprasternal notch | Preoperative | 40 | 2.000 | 3.500 | 3.720 | 0.995 | 6.000 |
| | Intraoperative | 40 | 1.500 | 4.000 | 3.708 | 0.959 | 5.500 |
| Distance to right SCM | Preoperative | 40 | 0.700 | 1.900 | 1.943 | 0.917 | 5.000 |
| | Intraoperative | 40 | 0.800 | 1.900 | 1.883 | 0.714 | 3.200 |
| Case distance to left SCM | Preoperative | 40 | 0.800 | 2.000 | 1.828 | 0.687 | 3.000 |
| | Intraoperative | 40 | 1.000 | 2.000 | 1.883 | 0.573 | 3.100 |

Med: Median, X: Mean, SD: Standard deviation, Min: Minimum, Max: Maximum.

**Table 2.** Wilcoxon sign-rank test results examining the differences between preoperative and intraoperative periods

| Incision | Pre/Intra | n | X ± S.S | $R_{XY}$ | r | Wilcoxon |
|---|---|---|---|---|---|---|
| Size | Preoperative | 40 | 5.875 ± 1.762 | 0.884 | +19.43 | Z= -4.498* |
| | Intraoperative | 40 | 5.230 ± 1.621 | | -20.33 | Sig.= 0.000 |
| Distance to thyroid cartilage | Preoperative | 40 | 5.875 ± 1.762 | 0.306 | +18.17 | Z= -2.277* |
| | Intraoperative | 40 | 2.515 ± 1.050 | | -23.78 | Sig.= 0.023 |
| Distance to the suprasternal notch | Preoperative | 40 | 3.720 ± 0.995 | 0.746 | +17.18 | Z= -0.468 |
| | Intraoperative | 40 | 3.708 ± 0.959 | | -19.1 | Sig.= 0.640 |
| Distance to right SCM | Preoperative | 40 | 1.943 ± 0.917 | 0.443 | +14.82 | Z= -0.079 |
| | Intraoperative | 40 | 1.883 ± 0.714 | | -17.43 | Sig.= 0.937 |
| Distance to Sol SCM | Preoperative | 40 | 1.828 ± 0.687 | 0.505 | +15.16 | Z= -0.403 |
| | Intraoperative | 40 | 1.883 ± 0.573 | | -17.84 | Sig.= 0.687 |

*(5%) means that the hypothesis H0 is rejected at the significance level, Wilcoxon sign rank test for H0: There is no difference between the means of the compared periods. X: Mean, SD: Standard deviation, RXY: Correlation of the two periods, r: Rank mean, +: Rank mean in positive direction, -: Rank mean in negative direction, z: Wilcoxon z test statistic.

S-2028

# Detection of tumor tissue specific micro-RNAs in gastric cancer

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## ABSTRACT

**Objective:** Gastric cancers are the fifth most common cancer type in the world and have a high mortality rate. Effective markers that can be used in the diagnosis and prognosis of gastric cancer have not been found yet. In recent years, it has been shown that there is a relationship between the levels of microRNAs (miRNAs) in tissues and the pathological behavior of cancerous tissues. In this study, it was planned to evaluate the relationship between the expression changes of miRNAs and pathologic features in gastric cancer.

**Material and Methods:** The expression levels of miRNAs (miR-375-3p, miR-148a-3p, miR-196a-5p, miR-376c-3p, miR-129-5p, miR-34c-5p, miR-662, miR-767-5p) were compared in samples obtained from cancerous and normal gastric tissues of 20 patients who were pathologically diagnosed with gastric cancer and operated between March 2018 and April 2019. The relationship between the expression levels of miRNAs and demographic, clinical and pathologic data of the patients were analyzed.

**Results:** As a result of the analysis, miRNAs were less expressed in tumorous tissues compared to normal tissues; when we looked at each miRNA individually in tumorous and normal tissues, it was observed that the expression of miRNAs that were significantly under-expressed in tumorous tissues moved in a narrower range. This suggests that the expression control of miRNAs is stronger in tumor tissue. When gastric cancerous tissue was compared with healthy gastric tissue, miR-375-3p, miR-196a-5p, miR-376c-3p, miR-129-5p, miR-34c-5p, miR-767-5p (p= 0.018, p= 0.003, p= 0.006, p= 0.037, p= 0.016, p= 0.001) levels decreased. miR-662 level decreased more with increasing age (p= 0.049), decreased levels of miR-129-3p and miR-34c-5p correlated with increased number of metastatic lymph nodes (p= 0.036, p= 0.020) and decreased levels of miR-376c-3p increased with smoking (p= 0.043). When hierarchical clustering was performed by adding age, number of metastatic lymph nodes and smoking using the changes in the expression of miRNAs, it is seen that miRNAs show similar expressions in patients with smoking. In addition, miR-148a-3p shows different expressions from other miRNAs, while miR-767 and miR-375-3p show similar expressions.

**Conclusion:** In this study, we showed that miR-375-3p, miR-196a-5p, miR-376c-3p, miR-129-5p, miR-34c-5p and, for the first time in the literature as of the acceptance date of the thesis, miR-767-5p are diagnostic for gastric cancer. We think that tumor biogenesis will be better understood by investigating the target mRNAs of these miRNAs in future studies.

**Keywords:** Micro-RNA, gastric adenocarcinoma, gastric cancerous tissue

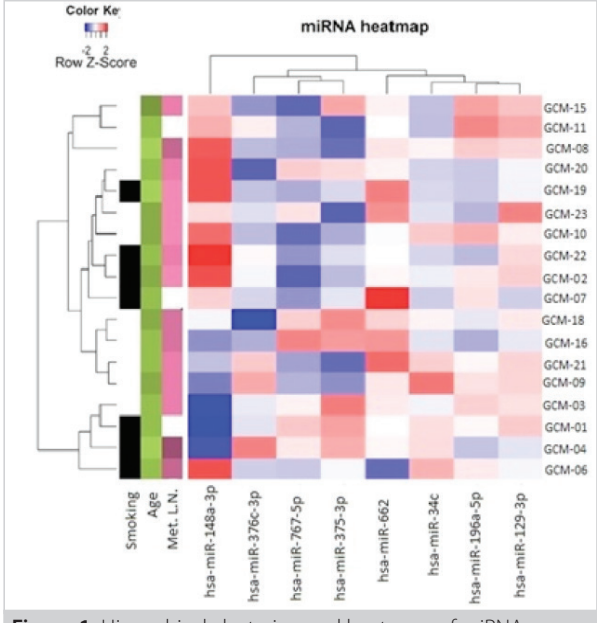


**Figure 1.** Hierarchical clustering and heat map of miRNAs.

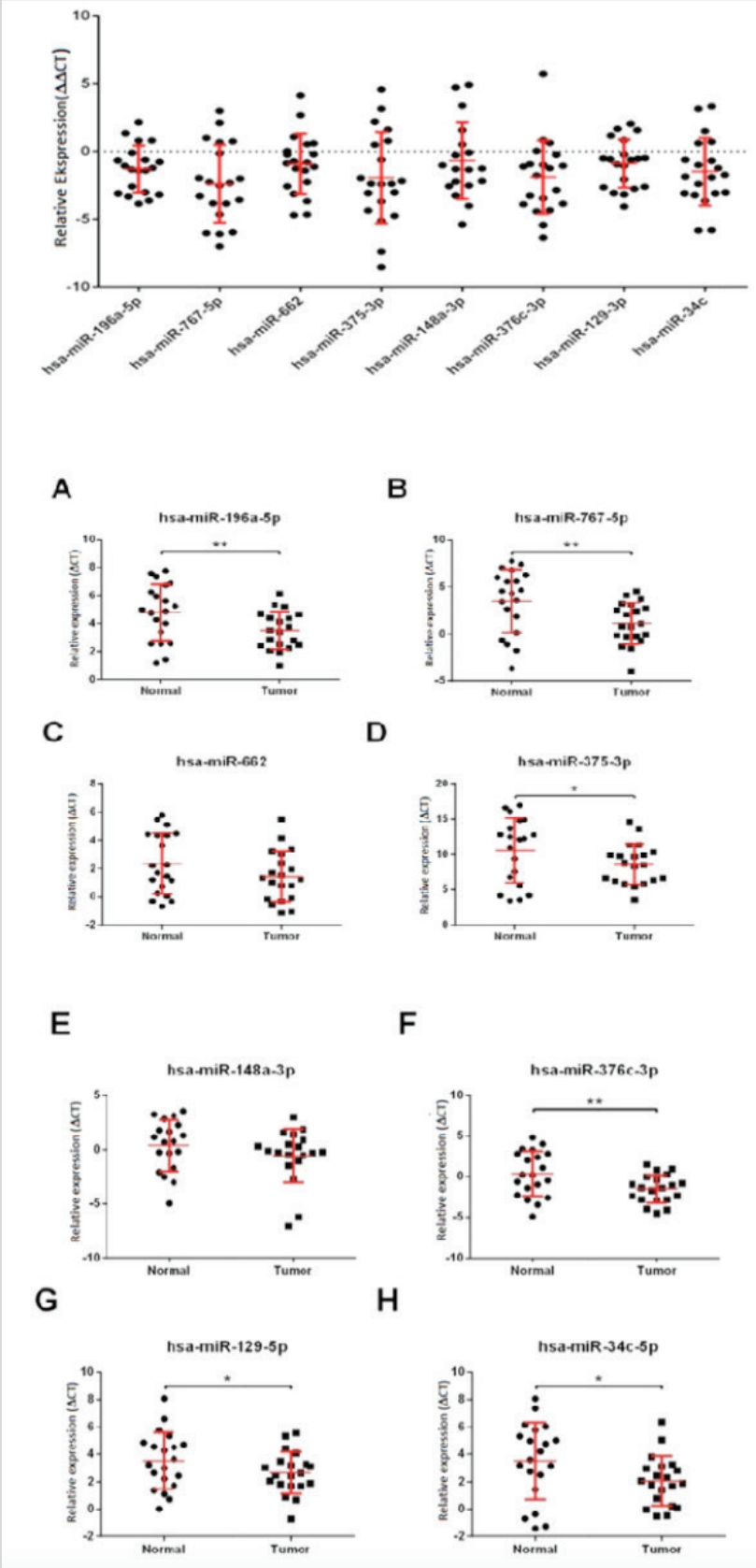


**Figure 2.** Expression changes of miRNAs.

| Table 1. | |
|---|---|
| Variables | |
| Age (years) | Mean Age= 64.9 ± 13.8 |
| <60 years | 7 patients 35% / Mean 50 ± 8.75 |
| >60 years | 13 patients 65% / Mean 72.92 ± 8.01 |
| Sex | |
| Female | 3 patients (15%) |
| Male | 17 patients (85%) |
| *Helicobacter pylori* | 3 patients (15%) |
| Smoking | 9 patients (45%) |
| Proton pump inhibitor use | 5 patients (20%) |
| Family history | 1 patient (5%) |
| Blood Type | |
| A Rh (+) | 8 patients (40%) |
| 0 RH (+) | 5 patients (25%) |
| B Rh (+) | 4 patients (20%) |
| A Rh (-) | 1 patient (5%) |
| 0 Rh (-) | 1 patient (5%) |
| AB Rh (+) | 1 patient (5%) |
| Preoperative Tumor Markers | |
| CEA (ng/mL) | 12.94 ± 21.75 (n= 0-5) |
| CA19-9 (U/mL) | 122.64 ± 217.83 (n= 0-27) |
| AFP (ng/mL) | 2.84 ± .60 (0-7) |
| Tumor Location | |
| Cardiac | 10 patients (50%) |
| Non-cardiac | 10 patients (50%) |
| Differentiation | |
| Less differentiated | 7 patients (35%) |
| Moderately differentiated | 11 patients (55%) |
| Well differentiated | 2 patients (10%) |
| Borman Classification | |
| Type 1 | 9 patients (45%) |
| Type 2 | 4 patients (20%) |
| Type 3 | 7 patients (35%) |
| Pathological Tumor Stage | |
| pT1 | 1 patient (5%) |
| pT2 | 0 |
| pT3 | 13 patients (65%) |
| pT4 | 6 patients (30%) |
| Pathologic Lymph Node Stage | |
| pN0 | 3 patients (15%) |
| pN1 | 4 patients (20%) |
| pN2 | 7 patients (35%) |
| pN3 | 6 patients (30%) |
| Presence of Lymphovascular Invasion | 18 patients (90%) |
| Presence of Nerve Invasion | 14 patients (60%) |
| TNM Staging | |
| Phase I | 1 patient (5%) |
| Phase II | 5 patients (25%) |
| Phase III | 14 patients (60%) |

**Table 2.** Demographic, clinical, laboratory and pathologic data of the patients

| | Tumor and Normal Tissue Exchange | | Change with Age | | Change with Number of Metastatic Lymph Nodes | | Change with smoking |
|---|---|---|---|---|---|---|---|
| | Mean change (95% confidence interval) | p | r | p | r | p | p |
| hsa-miR-375-3p | -1.943 (-3.521/-0.365) | **0.018*** | -0.16 | 0.511 | 0.35 | 0.134 | 0.102 |
| hsa-miR-148a-3p | -0.676 (-2.085/0.731) | 0.324 | -0.32 | 0.195 | 0.29 | 0.239 | 0.244 |
| hsa-miR-196a-5p | -1.299 (-2.115/-0.483) | **0.003**** | -0.33 | 0.158 | 0.43 | 0.055 | 0.411 |
| hsa-miR-376c-3p | -1.891 (-3.160/-0.623) | **0.006**** | -0.42 | 0.063 | 0.41 | 0.074 | 0.043* |
| hsa-miR-129-5p | -0.892 (-1.726/-0.059) | **0.037*** | -0.32 | 0.172 | 0.47 | **0.036*** | 0.149 |
| hsa-miR-34c-5p | -1.482 (-2.650/-0.314) | **0.016*** | -0.38 | 0.102 | 0.51 | **0.020*** | 0.274 |
| hsa-miR-662 | -0.922 (-1.964/0.118) | 0.079 | -0.44 | 0.049* | 0.21 | 0.369 | 0.194 |
| hsa-miR-767-5p | -2.387 (3.735/-1.040) | **0.001**** | -0.33 | 0.156 | 0.40 | 0.076 | 0.344 |

*: p< 0.05.

**: p< 0.01. Comparison of miRNA expression changes in gastric cancer patients

**S-2148**

# Video case report of a rare parathyroid pathology: Contributions of indocyanine green angiography to mediastinal parathyroid surgery

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## ABSTRACT

**Objective:** Mediastinal parathyroid adenomas are a rare ectopic parathyroid pathology. Surgery is recognized as the most effective treatment modality. Various imaging modalities such as ultrasonography (USG), scintigraphy, 4D computed tomography (4D-CT) are used to determine preoperative localization. Nowadays, the use of intraoperative auxiliary techniques is also recommended to increase the success rate of surgical intervention and to support minimally invasive surgery. In our case report, it was aimed to present a case in which we performed sternotomy with intraoperative indocyanine green (ICG) angiography in a case of mediastinally located primary hyperparathyroidism (pHPT), which has not been studied in the literature so far.

**Material and Methods:** A 55-year-old female patient was examined for bone pain and recurrent kidney stones, and hypercalcemia and elevated parathormone levels were detected. After the indication for surgery, no focus was found on USG, but scintigraphy and 4D-CT showed a suspicious focus of adenoma approximately 1.5 cm in size in the retrosternal area. Sternotomy and mediastinal exploration was decided and the patient was operated under neuromonitoring. The anterior mediastinum was opened by sternotomy. Intraoperative ICG was given and the mediastinum was visualized. Dissection was started in the area with intense ICG uptake anterior to the arcus aorta. The enlarged parathyroid tissue in the mediastinal fatty tissue was dissected and removed. When ICG was performed again, it was realized that thymic tissue was also involved and bilateral total thymectomy was performed. Intraoperative parathormone (PTH) measurement showed a decrease in PTH and the operation was terminated.

**Results:** Parathyroid angiography is an imaging modality in which autofluorosan and ICG dye are used together. It contributes to decrease the operation time and dissection width. It has especially strong contributions to the minimally invasive surgical orientation. It also shows perfusion of the parathyroid glands by showing tissue vascularization. As in our case, it can be a guide in cases where preoperative imaging is doubtful or undetectable. In addition, if it detects the presence of a focus other than the excised adenoma, it reduces the rates of persistent hyperparathyroidism.

**Conclusion:** Intraoperative techniques can be used for localization and screening for additional foci in mediastinal pHPT cases. In cases of major surgical interventions such as sternotomy, ICG angiography can be used to prevent persistent hyperparathyroidism and secondary interventions.

**Keywords:** Primary hyperparathyroidism, indocyanine green angiography, sternotomy

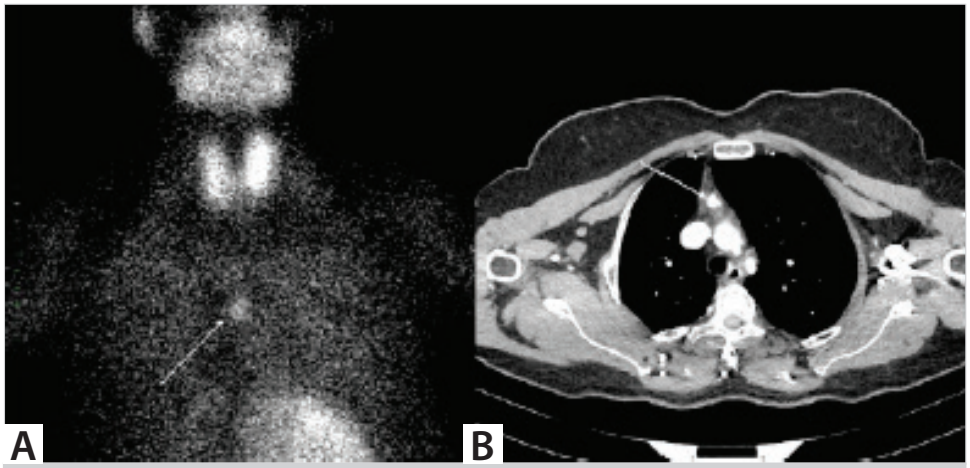


**Figure 1. A.** Ectopic mediastinal parathyroid adenoma (white arrow), Technetium-99m-sestamibi scintigraphy image. **B.** 4D-CT axial section image of ectopic mediastinal parathyroid adenoma (white arrow).

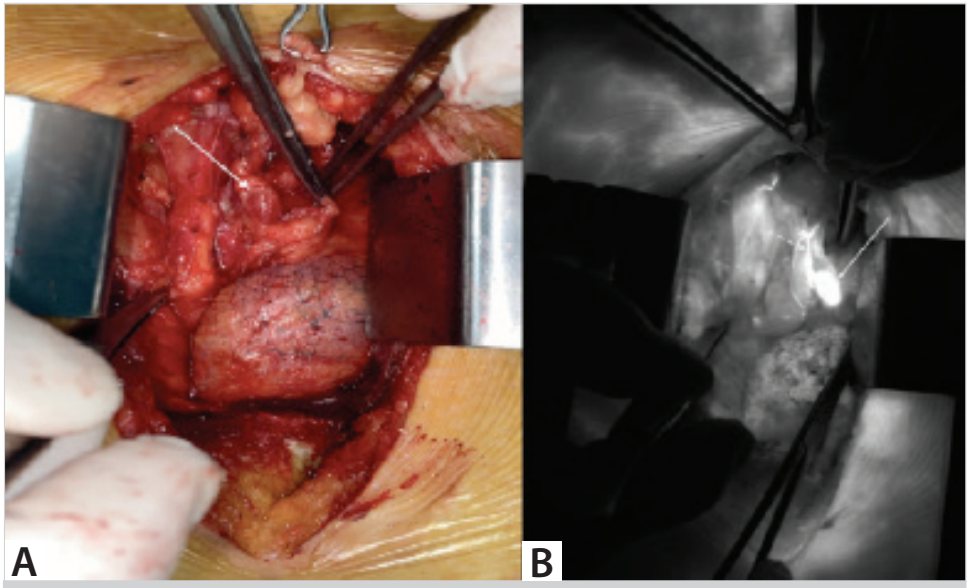


**Figure 2. A.** Intraoperative image of the ectopic parathyroid adenoma (white arrow) and the operating lobe. **B.** Black and white image of ectopic parathyroid adenoma (white arrow) and parathyroid artery (white dashed arrow) on SPY Elite® system after ICG injection.

S-2512

# The role of indocyanine green (ICG) in the delineation of the parathyroid gland in thyroid surgery

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**ABSTRACT**

**Objective:** Hypoparathyroidism is one of the most common complications after thyroid surgery. The most common causes of hypoparathyroidism are surgical trauma to the parathyroid glands, removal of the parathyroid glands together with the thyroid or devascularization of the parathyroid glands. In this study, it was aimed to prevent hypoparathyroidism that may develop after thyroidectomy by performing intraoperative angiography of the parathyroid glands with indocyanine green (ICG) in patients who underwent total thyroidectomy for various reasons and protecting the parathyroid glands without damaging them.

**Material and Methods:** Patients undergoing total thyroidectomy underwent intraoperative imaging of the parathyroid glands with a non-radioactive infrared device (SPY) using intravenous ICG.

**Results:** Intraoperative parathyroid angiography with ICG was performed in 40 patients who underwent total thyroidectomy. Thirty-three of the patients had at least one well vascularized parathyroid gland. Parathormone levels on postoperative day one and day seven were within normal ranges in all 33 patients. Only one patients had asymptomatic hypocalcemia. Mean postoperative day one parathormone level was 38.7 ng/L and postoperative day seven parathormone level was 42.3 ng/L. Mean calcium level was 8.8 mg/dL on postoperative day one and 8.9 mg/dL on postoperative day seven. Transient hypoparathyroidism occurred in three of seven patients who were not well vascularized by parathyroid angiography, but symptomatic hypocalcemia did not occur. No permanent hypoparathyroidism occurred in any patient.

**Conclusion:** Patients with normal parathormone levels one day postop and at least one parathyroid gland visualized by intraoperative indocyanine green angiography did not require postop hypoparathyroidism treatment. Indocyanine green angiography can be used as a method to prevent postop hypoparathyroidism in patients undergoing thyroidectomy.

**Keywords:** Parathyroidism, indocyanine green, hypoparathyroidism

S-2695

# Development and evaluation of modular training program on basic subjects in general surgery residency training

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**ABSTRACT**

**Objective:** Medical residency training is an organized program offered to residents under guidance and supervision. The development of lifelong learning skills, maintenance of competence and gaining professionalism in residents are within the scope of the specialty training process. Therefore, training programs should be organized in a way to ensure that a specialist gains the knowledge, skills, and attitudes he/she needs while practicing his/her profession. In this study, it was aimed to evaluate the residents before and after the training module.

**Material and Methods:** Ten commonly accepted topics in the field of general surgery of the curriculum formation and standard setting system of the medical specialization board were selected. These topics include 1) Asepsis, washing and dressing 2) Basic surgical instruments 3) Surgical knot techniques 4) Simple sewing techniques 5) Urinary catheter insertion 6) Excisional biopsy 7)Laparotomy and closure 8) Nasogastric catheter placement 9) Abdominal examination 10) Basic laparoscopy skills. Audio-visual modules for these ten topics were prepared and uploaded to the computers in the

general surgery department and 25 residents in the department of general surgery were given access to these modules for 60 days. At least two months after the distribution of the modules, the extent to which the objectives were achieved was evaluated by a single faculty member by looking at the bedside, operating room, rounds and daily practice activities of the residents.

**Results:** The maximum score that each research assistant can collect if he/she is able to complete the stages defined by all modules is 380 points. Pre-test and post-test averages are presented according to seniority (Table 1). Non-parametric Mann-Whitney U test was used to test the significance of the difference between the pre-test and post-test averages of first-year and fifth-year residents. The difference between the pre-test and post-test means of junior and senior residents was found to be statistically significant ($p< 0.05$) (Table 2). The pre-test and post-test means were significant in all topics.

**Conclusion:** Utilizing developing technology and new learning models in the planning of surgical education can provide faster achievement of learning goals and can be a very effective option for distance education when there is an unexpected pandemic-like situation that affects the whole world and requires suspension of education, which was not yet the case at the time this study was planned.

**Keywords:** Education, module, medical specialty

**Table 1.** Pre- and post- test results vs. seniority

| Seniority (years) | Pre-Test | Final Test |
|---|---|---|
| 1 | 174.80 | 282.20 |
| 2 | 245.80 | 346.40 |
| 3 | 254.50 | 329.75 |
| 4 | 277.71 | 360.86 |
| 5 | 305.00 | 366.00 |
| General | 251.40 | 338.08 |

**Table 2.** First and fifth year resident's pre- and post- test results

| | First Year (n= 5) | Fifth Year (n= 4) | p |
|---|---|---|---|
| Pre-test | 174.80 | 305.00 | 0.014 |
| Final test | 282.20 | 366.00 | 0.014 |

**S-2746**

# Use of myeloid-derived suppressor cell level in the evaluation of breast cancer progression and aggressiveness in clinical practice

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## ABSTRACT

**Objective:** Breast cancer is the most common cancer among women worldwide, with over one million women diagnosed with breast cancer each year. With the widespread use of screening programs, the number of patients diagnosed with breast cancer has increased. Although disease-specific mortality decreases with early diagnosis, breast cancer-specific five-year survival is between 88-96% even in early-stage patients. Breast cancer patients are followed closely with radiological examinations after treatment. In this study, it was aimed to contribute to the improvement of diagnosis and follow-up processes with tumor immunology in breast cancer, whose incidence is increasing, and mortality remains important.

**Material and Methods:** Peripheral blood myeloid derived suppressor cell (MDSC) levels of 55 newly diagnosed breast cancer patients and post-treatment MDSC levels of 13 patients one year after initial diagnosis were analyzed at Gülhane Training and Research Hospital. In order to obtain low-density myeloid subpopulations, Ficoll 1077 density gradient separation was performed and those with high-density myeloid subtypes were collected from cells and erythrocytes below the Ficoll 1077 fraction. The collected cells were separated by fluorescence activated cell sorting method and MDSC subgroup analysis was performed.

**Results:** MDSC subtypes were compared within breast cancer subtypes and although PMN-MDSC levels were higher in triple negative breast cancer patients, this difference was not statistically significant. When the MDSC levels at the time of diagnosis and in the first year of treatment were analyzed

according to subgroups, it was observed that the MDSC level decreased in triple negative patients, but this difference was not statistically significant. In the follow-up, it was observed that the first diagnosis MDSC level of a patient with metastatic course was higher than patients with similar stage and molecular subtype, but statistical analysis could not be performed because there was only one patient.

**Conclusion:** The present results were consistent with the studies in the literature showing that MDSC level is a stage-independent prognostic factor in different tumors (e.g. gastric tumor). Our long-term results and new studies are needed to answer the question whether MDSC levels can be evaluated as a prognostic factor independent of stage and molecular subtype in breast cancer.

**Keywords:** Myeloid-derived suppressor cell, breast cancer

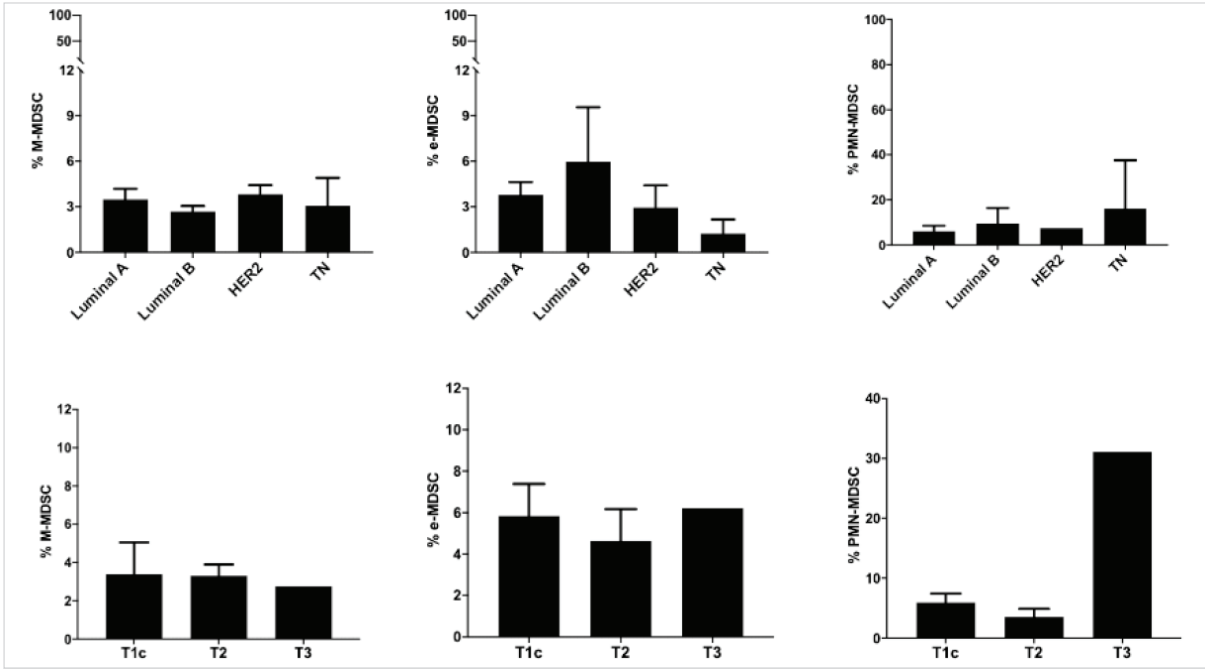


**Figure 1.** MDSC levels by biological subtype and tumor size. MDSC levels before and after treatment.

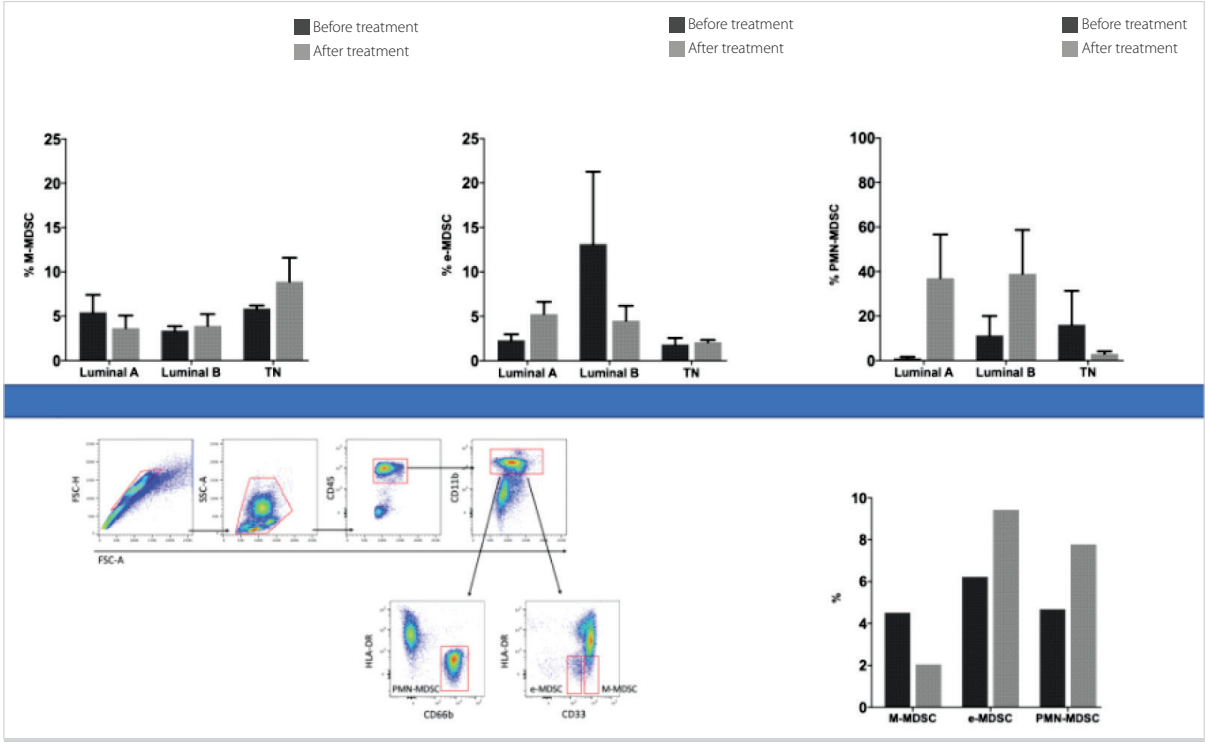


**Figure 2.** Closure strategy and metastatic patient MDSC level change.

S-2908

# Accuracy and comparison of 4-dimensional computed tomography, ultrasonography, parathyroid scintigraphy, and intraoperative indocyanine green angiography for localization in primary hyperparathyroidism

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## ABSTRACT

**Objective:** Primary hyperparathyroidism (PHPT) is an endocrine disorder caused by excessive secretion of parathormone (PTH) by the parathyroid glands. Imaging modalities used in the diagnosis and treatment of PHPT include ultrasonography, parathyroid scintigraphy, 4D computed tomography (4D CT) and intraoperative indocyanine green angiography (ICG). The aim of this study was to evaluate the accuracy and comparison of 4D CT, USG, parathyroid scintigraphy and ICG for localization in patients with primary hyperparathyroidism.

**Material and Methods:** This study included 46 patients who were diagnosed with primary hyperparathyroidism and underwent surgical treatment between 2020 and 2023. Age, sex, clinical and laboratory findings, imaging results, pathology reports and postoperative follow-up data were analyzed. USG, parathyroid scintigraphy, 4D CT and ICG were performed in all patients. The accuracy of imaging methods and pathology reports were evaluated by comparing them with operative data.

**Results:** Of the 46 patients included in the study, 40 were females (87%) and six were males (13%). Mean age was 52.3 (min= 31, max= 78) years. Parathyroid adenoma was found in 80.4%, parathyroid hyperplasia in 17.4% and parathyroid neoplasm in 2.2% (one patient). The correct localization rate of the pathologic parathyroid gland was 73.9% with USG, 73.9% with scintigraphy, 84.8% with 4D CT and 87% with ICG angiography. There was no statistically significant difference between these methods ($p > 0.05$).

**Conclusion:** This study demonstrates the accuracy and comparison of 4D CT, USG, parathyroid scintigraphy and ICG angiography in the localization of primary hyperparathyroidism. Success in the surgical treatment of primary hyperparathyroidism depends on accurate localization of the adenoma. The addition of intraoperative adjunctive techniques to preoperative localization studies increases the total cost, but it is important because of their potential to reduce secondary surgical interventions. The complication rates and costs of these repeated surgical procedures are much higher. In our study, four-dimensional CT and ICG angiography were found to be more successful, although there was no statistically significant difference when comparing their diagnostic efficiency in determining adenoma localization. Confirmation of adenoma localization by intraoperative ICG angiography, especially when intraoperative intact parathormone study is not technically feasible or in the presence of discordance between preoperative imaging modalities, may help to avoid bilateral neck exploration.

**Keywords:** Primary hyperparathyroidism, four-dimensional computed tomography, indocyanine green angiography

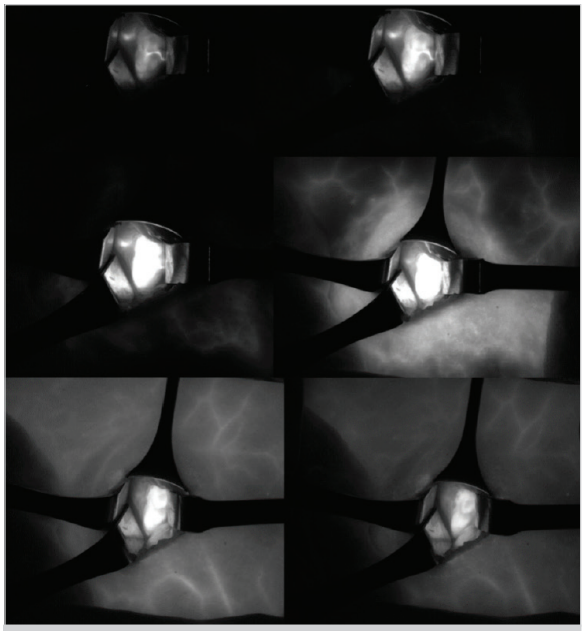

**Figure 1.** Image of parathyroid adenoma with indocyanine. Early angiography images and late washout images are seen respectively. Intraoperative parathyroid angiography.

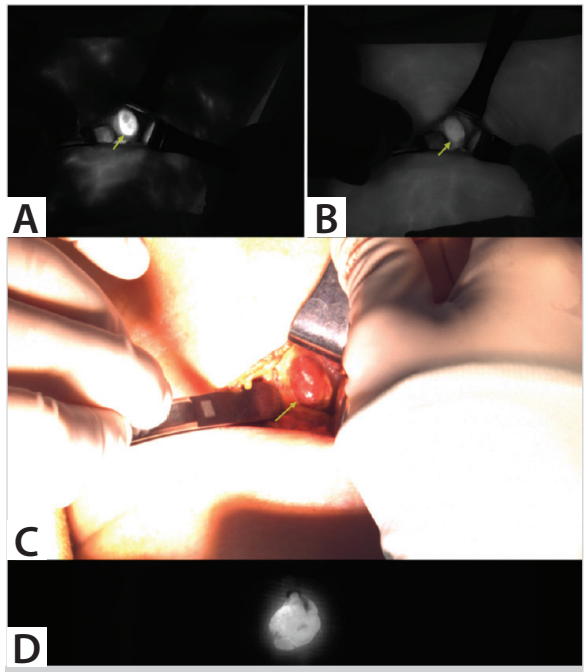


**Figure 2. A.** Early angiography images, **B.** Late washout images, **C.** Adenoma image found at surgery, **D.** Fluorescence image after excision of parathyroid adenoma.

**Table 1.** Comparison of imaging modalities in PHPT

| | Frequency | Percentage % |
|---|---|---|
| USG false | 12 | 26.1 |
| USG true | 34 | 73.9 |
| Cynigraphy is wrong | 12 | 26.1 |
| Cynicism is true | 34 | 73.9 |
| 4DBT false | 7 | 15.2 |
| 4DBT true | 39 | 84.8 |
| ICG false | 6 | 13 |
| ICG true | 40 | 87 |

**Table 2.** Numerical data of imaging modalities according to abnormal parathyroid gland detection status. Statistical comparison of imaging methods with each other

| | False | True | Sig. |
|---|---|---|---|
| Knowing the adenoma location with USG | 12 | 34 | .217 |
| Knowing the adenoma location with scintigraphy | 12 | 34 | .217 |
| Knowing the adenoma location with CT | 7 | 39 | .217 |
| Knowing the adenoma location with ICG | 6 | 40 | .217 |

S-3207

# Investigation of voice changes before thyroid surgery with machine learning methods

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## ABSTRACT

**Objective:** The study aims to understand the clinical significance of these changes and the potential impact of surgical interventions by examining common vocal changes before thyroid surgery.

**Material and Methods:** The study had a prospective design and data sets were created from the Saarbruecken voice dataset and the "a" and "i" sounds of 126 individuals (34 males, 92 females) in two groups of healthy and thyroid surgery candidates obtained from our clinic, and then processed with signal processing methods and extracted features. These features were used to classify healthy and sick subjects using support vector machines (cubic and quadratic), k-nearest neighbor (k= 5 and k= 7) and ensemble learning (gentleboost and bag) classifiers. After the attributes that were effective in the classification of healthy and patient groups were determined by Shapley value method, Kruskal-Wallis H test with Post Hoc Tamhane's T2 test, Mann-Whitney U Test and Spearman correlation test were used to evaluate the changes in attributes.

**Results:** The laryngoscopies of the thyroid surgery candidates included in the study performed in the ENT clinic were normal. All machine learning methods achieved 94.40%-100.00% success in healthy-diseased group discrimination. Shapley analysis identified mid-frequency power, spectral entropy, formant-1 energy and formant-2 energy as effective features for healthy-diseased discrimination; mid-frequency power, formant-2 bandwidth and formant-2 for diseased-healthy "a" sounds discrimination; formant-1, formant-2 bandwidth, formant-2 and mid-frequency power as effective features for "i" sound discrimination in diseased and healthy groups. According to this evaluation, these attributes are effective in the discrimination of healthy-diseased, "a" sounds and "i" sounds. The selection of these attributes is important for improving classification performance and obtaining accurate results. In addition, statistically significant associations ($p< 0.05$) were found between effective attributes and presence of nodules, sex, smoking, and thyroid gland volume.

**Conclusion:** All patients who are candidates for thyroid surgery have a voice disorder, and it is recommended that patients should be evaluated for voice disorder during their previous follow-up and treatment. It is observed that machine learning methods are effective in these evaluations.

**Keywords:** Machine learning, thyroid, voice processing

S-3212

# Endoscopic balloon dilatation with the randezvous technique: A new and extremely rare treatment for completely occluded anastomotic stenosis after anastomotic separation: Case report

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## ABSTRACT

**Objective:** Anastomotic stenosis is an important postoperative complication in colorectal surgery with an incidence of up to 30%. Various factors such as ischemia, anastomotic leakage, inflammation, and radiotherapy are involved in its pathogenesis. Endoscopic dilatation is generally preferred

in treatment, and it is known that reoperation may be required less frequently. However, it has been reported that new approaches such as transanal minimally invasive surgery in cases accompanied by anastomotic separation have started to take place in the literature, but the morbidity is high. In addition, colonoscopic dilatation with the randezvous technique for recanalization of obstruction in the presence of total stricture is becoming increasingly popular among alternative new approaches. Various methods have been developed under the randezvous technique, including endoscopic ultrasound-guided techniques, combination of translumination and digital palpation, and methods in which a small incision is made with a needle knife and then a wire-guided balloon dilator is used.

**Material and Methods:** Anastomotic separation and subsequent stricture development is a condition that may also occur and rates up to 15% have been reported in the literature. In such cases, if the defect area of anastomotic separation gives the impression of a false lumen in the development of a total stricture, it may not always be possible to distinguish the correct channel; in this case, dilatation of this area carries the risk of further enlarging the defect. In such cases, there are a few recent case reports of simultaneous antegrade-retrograde approach using two endoscopes in patients with stoma.

**Results:** However, the number of publications on the application of the randezvous technique, which was reported for the first time in 1987 with the name of randezvous technique, is mostly used in biliary pathologies today and is more practical with the help of a guide wire, does not exceed 10 in colonic anastomotic strictures worldwide.

**Conclusion:** We emphasize endoscopic balloon dilatation with the randezvous technique as an extremely rare but effective and safe procedure with the successful treatment of a case in which the anastomosis was completely occluded after colorectal resection and even a second area was seen giving the impression of a false lumen due to anastomotic separation.

**Keywords:** Randezvous method, balloon dilatation, anastomotic stricture

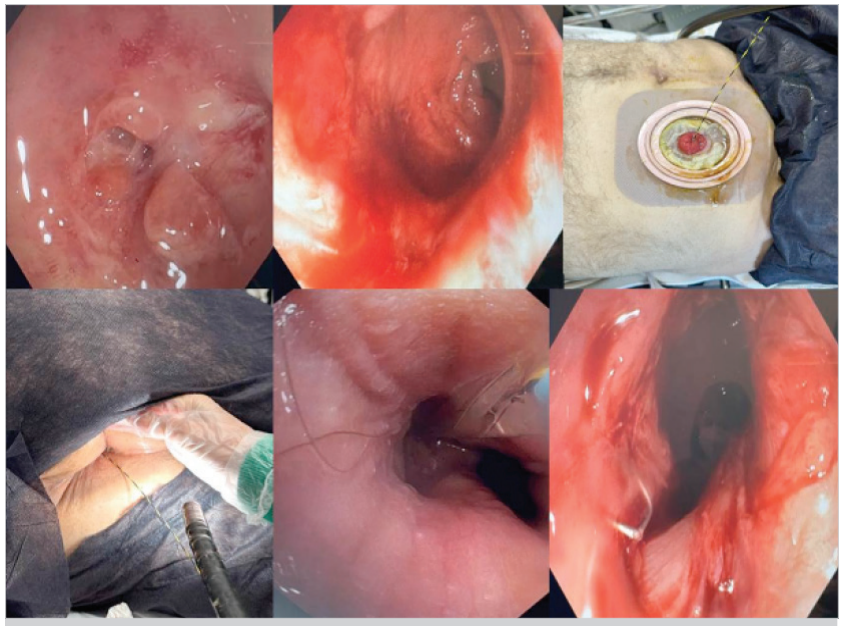

**Figure 1.** Randezvous technique. **A.** Pseudo-defect area due to total stricture and anastomotic separation at 6 cm when viewed through colonoscope **B.** Lumen viewed through the ileostomy **C.** Leaving the zebra guide through the ileostomy **D.** Advancing the colonoscope through the anal canal over the zebra guide **E.** Hydrostatic balloon dilatation over the zebra guide line **F.** View after dilatation and steroid injection.

S-3391

# The effect of sarcopenia status on outcomes in breast cancer patients undergoing breast reconstruction with implants

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## ABSTRACT

**Objective:** Sarcopenia is a reduction in skeletal muscle mass and function. It is a common entity in cancer patients. This is also true for breast cancer. Mastectomy and reconstruction techniques are widely used in the surgical treatment of breast cancer. In this study, we investigated the effects of sarcopenia on postoperative local complications in breast cancer patients undergoing mastectomy and implant-based breast reconstruction. Our study was retrospective, case-control and analytical observational design. Breast cancer patients who underwent mastectomy and implant-based breast reconstruction were included in the analysis. Computed tomography images of 60 patients were analyzed and skeletal muscle cross-sectional areas at the level of the third lumbar vertebra were measured. The patients were divided into two groups as sarcopenia and non-sarcopenia according to the measurement results. The groups were compared in terms of postoperative complications and the relationship between sarcopenia and postoperative local complications was investigated. A total of 60 patients and 80 reconstruction procedures were analyzed. The incidence of postoperative complications was significantly higher in patients with sarcopenia than in those without sarcopenia ($p= 0.010$). When demographic characteristics (age, sex), individual characteristics (height, weight, body mass index, comorbidities, smoking), tumor characteristics (histological type, grade), other treatment components (neoadjuvant chemotherapy, chemotherapy, radiotherapy) and surgical techniques were analyzed, the groups were similar ($p> 0.05$). In conclusion, sarcopenia may be a risk factor for postoperative local complications in breast cancer patients undergoing mastectomy and implant-based breast reconstruction.

**Keywords:** Breast cancer, reconstruction, sarcopenia

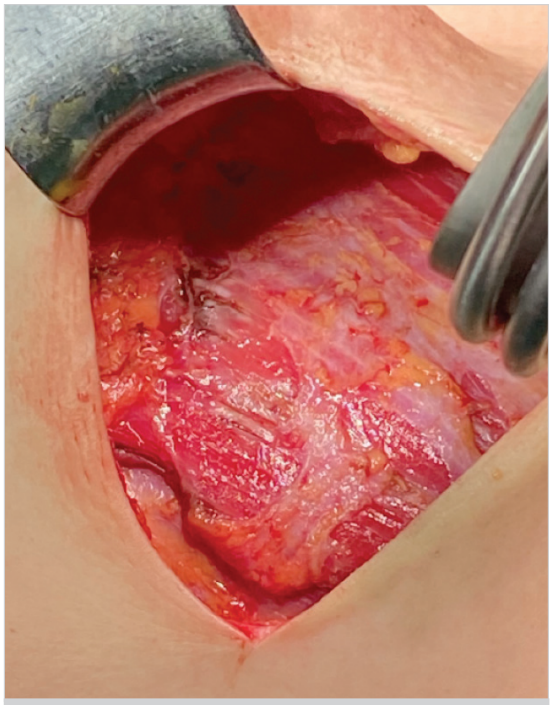

**Figure 1.** Pectoralis major. In a patient in whom direct implant reconstruction was planned, the pectoral muscle after matectomy.

**Table 1.** Sarcopenia and complications

| Variable | All Reconstructions (n= 80) n (%) | Group with Sarcopenia (n= 25) n (%31.3) | Non-Sarcopenia Group (n= 55) n (% 68.8) | p (Sarcopenia Group vs. Non-Sarcopenia Group) |
|---|---|---|---|---|
| Complication | 17 %21.3 | 11 %44 | 6 %10.9 | 0.001 |
| Complication requiring additional surgery | 12 %15 | 8 %32 | 4 %7.3 | 0.007 |
| Wound site infection | 4 %5 | 1 %4 | 3 %5.5 | 1.000 |
| Dehiscence | 1 %1.3 | 1 %4 | 0 %0 | 0.312 |
| Hematoma | 1 %1.3 | 1 %4 | 0 %0 | 0.312 |
| Seroma | 1 %1.3 | 1 %4 | 0 %0 | 0.312 |
| Rejection (loss) of prosthesis | 4 %5 | 2 %8 | 2 %3.6 | 0.585 |
| Breast fluctuation-wrinkling | 3 %3.8 | 2 %8 | 1 %1.8 | 0.229 |
| Abnormal Scarring | 3 %3.8 | 3 %12 | 0 %0 | 0.028 |

Complication distribution between groups with and without sarcopenia.

**S-3971**

# Can phenotypic analysis of suppressor cells of myeloid origin be a complementary marker when deciding treatment of thyroid nodules with Bethesda scoring system?

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## ABSTRACT

**Objective:** Thyroid nodules are one of the most common endocrine disorders. Diagnostic evaluation with ultrasound-guided fine needle aspiration biopsy (FNAB) is recommended for nodules because 5-15% of these nodules are malignant. FNAB yields an unidentifiable result in 15-25% of cases and surgical resection is often recommended, even if the nodule cannot be diagnosed as malignant. Surgical treatment may expose patients with benign lesions to unnecessary surgical risks. The Bethesda classification for reporting thyroid cytology categorizes cytologic findings according to cancer risk, but this classification often fails to provide sufficient evidence to make a decision for follow-up rather than surgery. FNAB is an invasive procedure and cannot predict tumor burden when thyroid cancer is present. In cancer, myeloid-derived suppressor cells (MDSC) are known to be a group of cells that provide information about the tumor microenvironment that may be valuable in disease diagnosis, residual and recurrence detection. In this study, it was aimed to increase the efficacy of the Bethesda scoring system by adding a new marker to the Bethesda scoring system by correlating the percentage of MKBH cell subtypes determined by flow cytometry from cells purified from peripheral blood and fresh nodule tissue with the Bethesda scoring system after thyroidectomy. Currently, the evaluation of whether a thyroid nodule is benign or malignant is often inconclusive even after biopsy. In addition, preoperative staging and prediction of recurrence can be difficult. According to new research, measuring blood levels of MDSC can be used to assess the risk of malignancy and estimate the extent of disease in patients undergoing thyroidectomy for a single thyroid nodule.

**Material and Methods:** In this study, we comprehensively analyzed the subpopulations of MDSC in fresh tissue from thyroid nodules and peripheral blood of 38 patients who underwent thyroidectomy with various prediagnoses. In addition, correlation analyses were performed to determine the Bethesda score and MDSC cell quantities. The efficacy of MDSC values in subgroups such as atypia of undetermined significance and follicular lesions of undetermined significance was analyzed in making treatment decisions. Isolation and phenotypic characterization of monocytic and granulocytic cells in thyroid pathology specimens and peripheral blood (phenotype analysis and purification of monocyte and granulocyte cells, flow cytometry, morphological analysis), functional analysis of monocytic and granulocytic cells in thyroid tissue and peripheral blood (proliferation assay, ELISA method, ROS and NO production analysis).

**Results:** Thirty-eight patients were included in the study and the distribution of preop FNAB results of these patients was as follows: 11 benign, 11 AUS/FLUS, 11 malignancy suspect, five malignant there was no significant difference between the subtypes of MDSC studied from peripheral blood and thyroid fresh nodule tissue, the rate of MDRs was found to be significantly increased in patients with malignant post-operative pathology results, and in the atypia of uncertain significance and follicular lesion of uncertain significance (AUS/FLUS) group, the rate of MDSC was significantly increased in patients with malignant post-operative pathology results compared to benign patients (Table 1,2).

**Conclusion:** MDSC are a cell group that can provide information about the tumor microenvironment and tumor burden. It is a cell group that we can perform phenotypic and functional analysis from tumor tissue and peripheral blood. The new algorithm that our group is trying to bring to the Bethesda scoring system is to define a treatment algorithm that can make a more accurate treatment and thyroidectomy decision in diagnostic subgroups, especially in the AUS/FLUS group, by correlating the MDSC group with fresh tissue/peripheral blood analysis. If MDSC values are also high in patients with AUS/FLUS on FNAB, the rate of malignancy risk detection increases as it provides information about the tumor microenvironment.

**Keywords:** Myeloid suppressor stem cell, Bethesda scoring, thyroid nodule

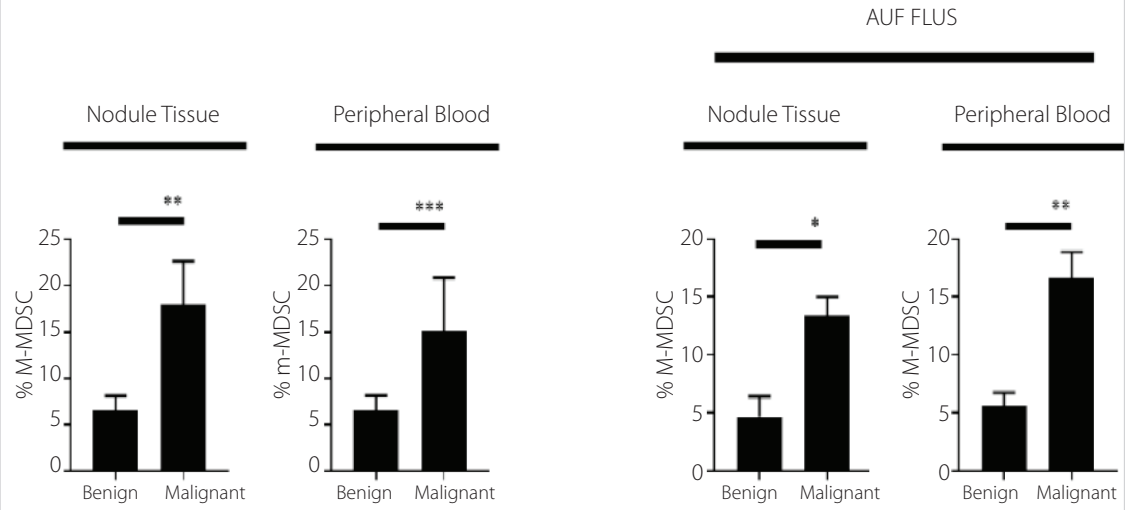


**Figure 1.** Comparison of MDSC in nodule tissue and peripheral blood. The similarity of MDSC levels in nodule tissue and peripheral blood is statistically significant. MDSC analysis in AUS/FLUS group.

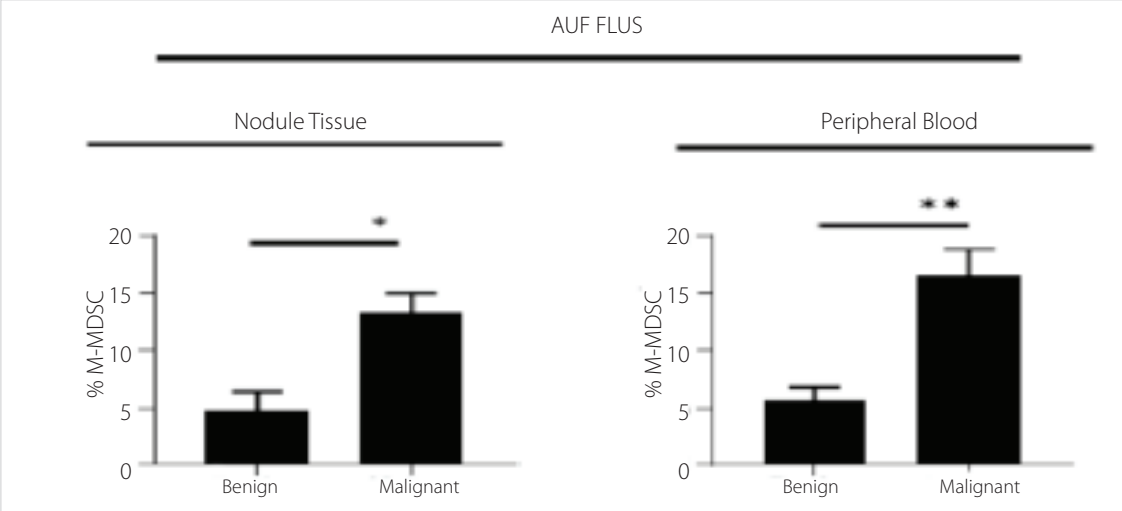


**Figure 2.** In AUS/FLUS patients, MDSC levels are significantly increased in patients with malignant post operative pathology results compared to benign patients. MDSC analysis in nodule tissue. MDSC analysis of fresh thyroid nodules.

S-3994

# Effect of platelet rich plasma (PRP) on intestinal anastomosis healing in rats

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## ABSTRACT

**Objective:** The aim of this study was to test the hypothesis that PRP contributes to anastomotic safety by anastomotic burst pressure, hydroxyproline level and histopathologic evaluations after rats subjected to HIPEC were sacrificed on day five.

**Material and Methods:** The study was conducted in three groups of 8 Wistar-albino male rats, 8-10 weeks old, weighing between 300-400 g in each group. Group 1 was defined as the control group and saline was administered at 42°C after colonic anastomosis. Group 2 rats were treated with cisplatin at 42°C after colonic anastomosis. Group 3 rats were treated with cisplatin at 42°C after PRP gel application around the colonic anastomosis. Rats were sacrificed by exsanguination method on the 5th postoperative day and comparison was made.

**Results:** One rat from each group died in the postoperative follow-up due to anesthesia and surgical stress. After sacrifice, one rat from each group had anastomotic leakage (14%). The median burst pressure of Group 1 was the highest at 147.50, and there was a statistically significant relationship with the other groups. There was no difference in burst pressures between Group 2 and Group 3. There was no significant relationship between the mean hydroxyproline levels between the groups. There was no significant difference between the groups in terms of inflammation, epithelial necrosis and fibroblasts. There was a significant difference between Group 3 and the other groups in terms of edema in the anastomotic line. There was a significant difference between Group 1 and the other groups in terms of vascularity.

**Conclusion:** The study revealed that HIPEC application impairs anastomotic healing and increases the risk of leakage due to low anastomotic burst pressure and hydroxyproline levels and causes edema and necrosis at the wound site. Although the mean values of the mechanical and biochemical quantitative evaluation of PRP on wound healing at the anastomosis site were higher than the HIPEC group, there was no statistically clear effect. PRP application was found to have a positive effect on healing by reducing edema at the wound site. Since there are few studies even as animal experiments and there are no studies on humans, more research is needed on its applicability to clinical practice.

**Keywords:** Anastomosis, PRP, HIPEC

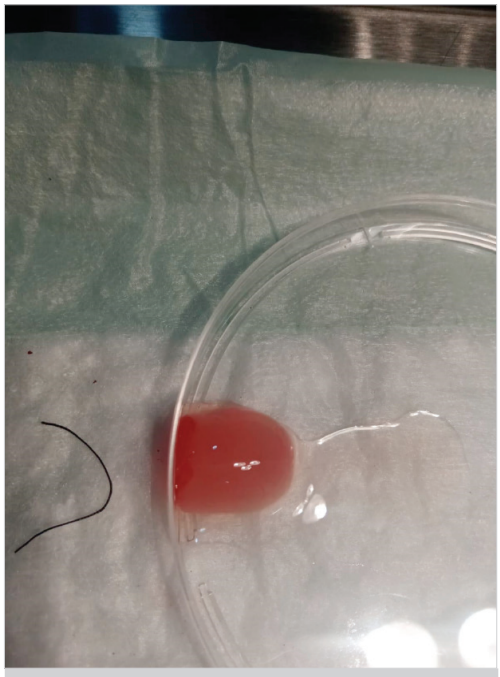

**Figure 1.** Gel PRP.

**Figure 2.** Spreading of gel PRP around the anastomosis.

**Table 1.** Comparison of anastomotic burst pressure and hydroxyproline values of experimental groups

| | | Median | p* | p** | p*** | p**** |
|---|---|---|---|---|---|---|
| Burst Pressure | Group 1 | 147.50 | **0.004** | **0.002** | **0.002** | 0.937 |
| | Group 2 | 90.00 | | | | |
| | Group 3 | 85.00 | | | | |
| Hydroxyproline level | Group 1 | 329.40 | 0.338 | 0.128 | 0.710 | 0.535 |
| | Group 2 | 245.27 | | | | |
| | Group 3 | 257.30 | | | | |

P*: P value for all three groups, P**: P value for group 1 and Group 2, P***: P value for Group 1 and Group 3, P****: p value for Group 2 and Group 3.

**S-4430**

# In vivo modeling of parathyroid conjugate produced by 3D printing from parathyroid tissue in xenograft atymic CD1 mice

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## ABSTRACT

**Objective:** Parathyroid glands are endocrine organs located adjacent to the thyroid gland and are primarily responsible for the regulation of serum calcium levels by secreting parathormone (PTH) in response to hypocalcemia. Iatrogenic removal and/or injury of the parathyroid glands is a common complication of thyroid surgery. Although the mainstay of treatment for hypoparathyroidism is vitamin D analogs and calcium supplements, this therapy does not fully compensate for PTH deficiency; therefore, regeneration and/or replantation of the damaged parathyroid tissue is needed. Tissue engineering is now a promising field with pioneering clinical applications for patients with organ failure. The success of tissue engineering depends on the use of appropriate cells and bioactive factors that stimulate the activity of these cells, as well as scaffolds that are produced to mimic tissue structure and support its function. 3D printing is an advanced strategy for the production of these scaffolds by providing a very precise control over their structure and properties. The aim of this study was to evaluate the in vivo viability, CaSR concentration and hormonal activity of 3D printed parathyroid tissue scaffold produced from human parathyroid gland by xenograft transplantation into athymic nude mice.

**Material and Methods:** This study was designed as a continuation of the production of parathyroid tissue conjugates with demonstrated calcium level-sensitive and hormonal activity under in vitro conditions and in vivo animal modeling. In the study, primary human parathyroid cells were first isolated and their PTH secretory activity was confirmed by stimulation with different calcium levels after demonstrating their viability in in vitro culture. These cells were then seeded onto 3D printed alginate scaffolds mimicking parathyroid tissue to produce parathyroid tissue replica. Xenograft modeling was performed by implanting each parathyroid tissue substitute into the dorsal flank region of 12 different eight-week-old male CD1 athymic nude mice weighing 20-30 grams, separately in the control and study groups (Figure 1).

**Results:** After inoculation, scaffolds were separated from the mice, which were clinically monitored under standardized conditions in IVC systems, on the 7$^{th}$, 14$^{th}$, 21$^{st}$ and 90$^{th}$ days and cell characterization was performed histopathologically and immunohistochemically with CaSR and monoclonal PTH Ab; PTH production and viability of tissue conjugates until the 3$^{rd}$ month were demonstrated (Figure 2).

**Conclusion:** Since there is no curative treatment for persistent hypoparathyroidism, parathyroid tissue engineering is of great importance both in scientific research and therapeutically, and parathyroid tissue conjugate produced with 3D printing support is a potential candidate for the treatment of hypoparathyroidism.

**Keywords:** Parathyroid, xenograft, 3D printing

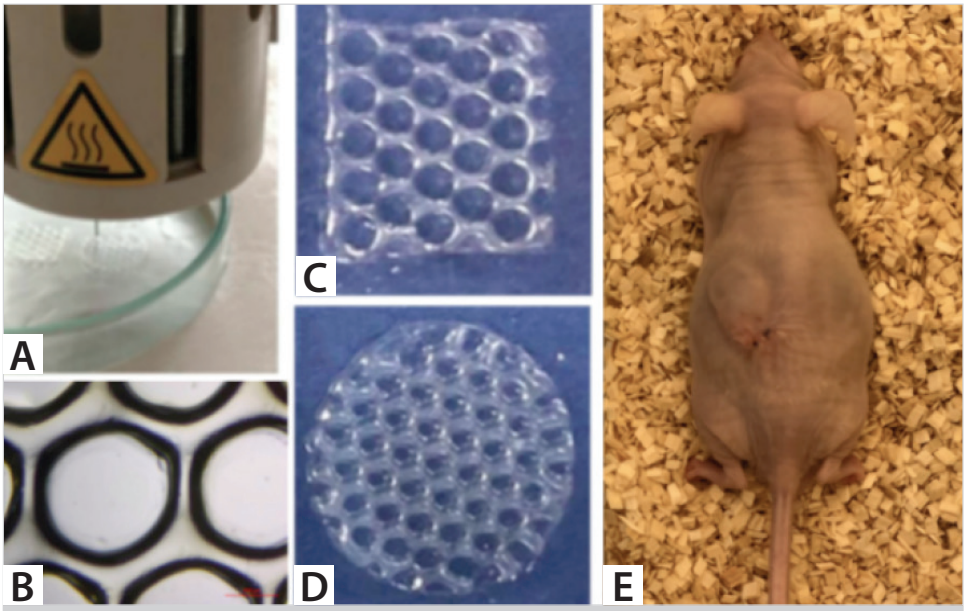


**Figure 1. A.** 3D printing stage of hydrogel scaffolds, **B.** Microscopic view x40 of scaffold pores, **C-D.** 3D printed product with honeycomb design in square and cylindrical architecture, **E.** Atymic nude mouse xenagraft model with parathyroid conjugate implanted in the dorsal flank region.

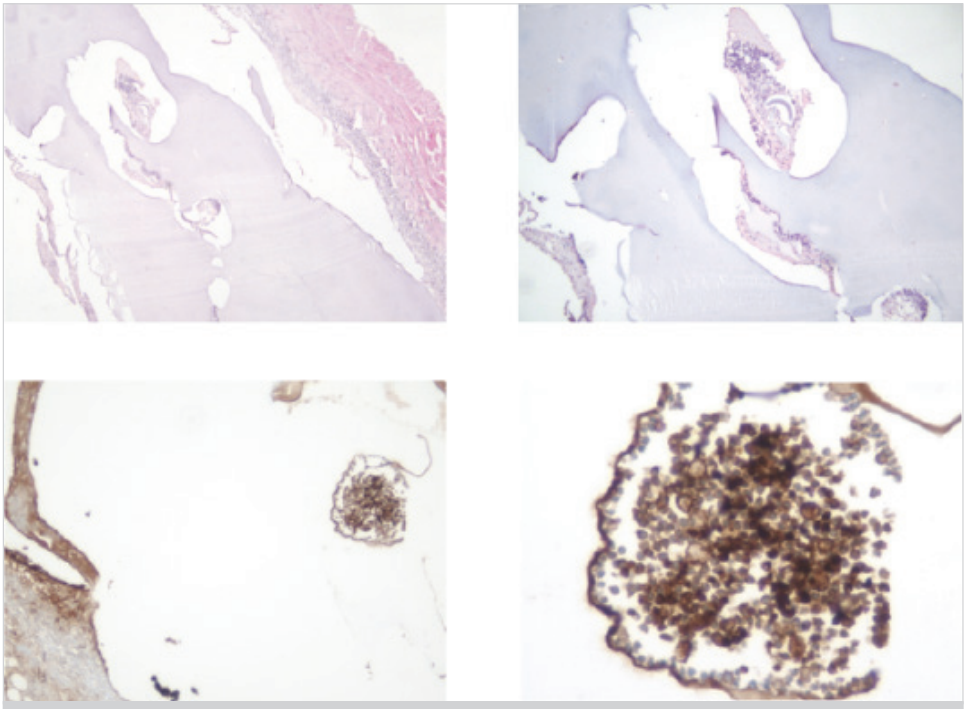

**Figure 2.** Immunohistochemical characterization of parathyroid cells (A, HE x 40; B, HE x 100) seen in scaffold pores (C, HE x 100; D, IHC x 400).

S-4543

# Association between the number of macrophages infiltrating the tissue and disease stage in gastric cancer patients

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## ABSTRACT

**Objective:** Myeloid cell populations are known to increase in inflammatory diseases such as cancer. Among these increased myeloid cell subtypes, macrophages are immune cells that take an active role in innate and acquired immunity. In this study, the amount of CD206+ macrophages in peripheral blood, non-tumor normal tissue and tumor tissue of gastric cancer patients will be examined in comparison with disease stage.

**Material and Methods:** Surface markers such as CD45, CD14, CD206, CD163, HLA-DR, PD-L1, PD-L2, CD80 and CD86 on cells purified from peripheral blood, tumor and non-tumor normal tissues of gastric cancer patients were examined by flow cytometry. Disease stage was correlated with the percentage of macrophages in the tissue. In addition, the location of CD206+ macrophages in sections of tumor and non-tumor normal tissues of gastric cancer patients with different stages were quantified after immunofluorescence staining.

**Results:** Flow cytometry showed that CD45+CD14+HLA-DR+CD206+ macrophages were found in a high percentage in the tumor tissue of gastric cancer patients in blood, non-tumor healthy tissue and tumor tissue samples obtained from gastric cancer patients. In addition, the percentage of macrophages was significantly correlated with the stage of the disease. It is predicted that macrophages may have better T cell stimulation capacity with the percentage of CD80, CD86, HLA-DR they carry on the macrophages and may have immunosuppression capacity in the tumor microenvironment with the PD-L1 and PD-L2 they carry.

**Conclusion:** At the end of our study, it was found that macrophages carrying CD206 were more in gastric cancer tumor tissue compared to blood, gastric non-tumor normal tissue, and tumor of gastric cancer patients and were associated with disease stage.

**Keywords:** Gastric cancer, myeloid cell, macrophage

S-4673

# A new technique in challenging stoma management

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## ABSTRACT

**Objective:** Ostomy, a Greek word, means the opening of a hollow organ to the body surface and is named according to the organ being opened. The term stoma is used for the area that is mouth to the body surface. It is important to use appropriate technique to prevent problems such as stoma-induced leakage retraction. However, this may not always be possible and may cause stoma and wound complications. In our study, we planned to present the technique we applied to our patients who underwent urostomy and developed stoma retraction and leakage.

**Material and Methods:** In our patients with stoma retraction and leakage, a 14 F Foley catheter was adjusted and cut according to the stoma diameter and 0.5-1 cm around it. Then this Foley catheter piece was turned into a ring and placed on the stoma. At the bedside and under local anesthesia, the ring Foley catheter was fixed around the stoma so as to pass through the skin with the retracted intestine in our patient with retracted stoma and only through the skin in our patient with leakage. Then the area between the Foley catheter and the stoma was filled with paste.

**Results:** In our patients who had problems at the wound site and around the stoma due to stoma leakage and retraction, the leakage problem was resolved after the procedure and the foley catheter was removed after the wound site and stoma complications healed.

**Conclusion:** Our method can be applied as an auxiliary technique to prevent wound site and stoma complications in difficult stoma management because it is easy to apply and effective.

**Keywords:** Ostomy, stoma, complications

**Figure 1.** Foley catheter application. The ring Foley catheter designed to protrude around the stoma was fixed by suturing to the skin.

**Figure 2.** After the paste is applied. After fixing the Foley catheter, adhering the ileostomy adapter by applying paste between the stoma and Foley.

S-4749

# Analysis of factors playing a role in the treatment of anal fissure with an artificial intelligence model

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## ABSTRACT

**Objective:** In the treatment of anal fissure, analyzing patients' demographic and clinical characteristics as well as their compliance with lifestyle changes including medical treatment, diet and toilet habits with artificial intelligence may be useful in creating an optimal treatment plan.

**Material and Methods:** All clinical and demographic characteristics of the patients that were thought to potentially affect the treatment of anal fissure were collected retrospectively. The most significant features were determined by least absolute shrinkage and selection operator (LASSO) regression method. These most effective features were modeled on the sample with XGBoost technique, a machine learning method, with half of the sample as validation and the other half as test set. The effect sizes and direction of the effect were then visualized using SHAP values. R version 4.2.3 was used for data analysis.

**Results:** Our study included 29 patients, 45% of whom were women, median age 48 years (MYA) (interquartile range 33-59), median duration of complaint 7.0 months (MYA 2.9-30) and median follow-up 2.5 months (MYA 1.1-6.5). The artificial intelligence model predicted malignancy, radiotherapy history, ASA score, anemia, fatigue, indigestion, diarrhea, constipation, anal discharge, tenesmus, rectal bleeding, itching, history of inflammatory bowel

disease, history of colorectal and anal surgery, smoking, gender, location of the fissure, number of fissures, chronicity of the fissure. The characteristics of diltiazem hcl cream and lidocaine cream, use of probiotics, addition of phycilium to the diet, avoidance of pickled foods, warm water bath, toilet training recommendations, water-soluble fiber supplementation, liquid nutrition information were analyzed to predict complete response to treatment and an optimal model was created. The success of our model was 0.759 when measured as area under the curve (AUC). To identify the variables of interest and calculate individual coefficients, we applied the least absolute shrinkage and selection operator (LASSO) variable selection algorithm using the optimal parameter α. This algorithm helped to select the most significant variable effects. The selected variables were then incorporated into the XGBoost machine learning model with hyperparameter tuning using the validation set. Finally, the optimized model was used to make predictions on the test set and its performance was evaluated using the area under the receiver operating characteristic curve (AUC-ROC). The data consisted of randomly partitioned validation and test sets, and all patients were used in model building. The effect of factors was also analyzed using Shapley values. According to the model, the factors that increased treatment success were, in order of effect, absence of multiple fissures, compliance with effective toilet training recommendations, absence of anal itching, and fissure being on the background of previous anal operation (mean SHAP values; 0.07/0.06/0.05/0.01)

**Conclusion:** This study focused on the factors that affect the quality of treatment by analyzing the factors that play a role in the treatment of anal fissure with an artificial intelligence model. The analysis of these factors, such as the absence of multiple fissures, compliance with toilet training recommendations, the absence of anal itching, and the development of the fissure on the basis of previous surgery, emphasizes the importance of individualized approaches in the treatment of anal fissures. The current study may contribute to the development of future treatment protocols and more effective management of anal fissure patients. This study presents the analysis of various factors and may contribute to the optimization of treatment strategies and the development of more effective and personalized approaches for patients.

**Keywords:** Artificial intelligence, anal fissure, proctology, constipation

**S-6199**

# External aspect of abdominopelvic surgery, drains and enterostomies: A retrospective analysis of 501 cases

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## ABSTRACT

**Objective:** The aim of this study was to obtain quantitative data on the number and distribution of drains, enterostomies, stoma types and related complications used in abdominopelvic surgeries according to the urgency of the case.

**Material and Methods:** Demographic characteristics, use of drains, presence of enterostomies, and development of drain and stoma complications in abdominopelvic surgeries were recorded by retrospective review of two-year data from operative and clinical observation notes. The number of drains was recorded, and complication development was analyzed separately according to the type of enterostomies. The findings were presented comparatively according to the urgency of surgery. IBM SPSS Statistics 22 (IBM SPSS, Türkiye) was used for analysis. Data were evaluated by descriptive statistical methods (mean, standard deviation, median, frequency, ratio, minimum, maximum). Qualitative data were compared using Pearson Chi-square and Fisher's exact test. Quantitative variables with normal distribution were compared with student-t test. Significance $p< 0.05$ was accepted.

**Results:** Of the total 501 patients, 51.29% (n= 257) were female, 48.71% (n= 244) were male, and the mean age was 51.78 ± 13.68 years. Of the surgeries, 40.52% (n= 203) were urgent and 59.48% (n= 298) were elective. Age and gender distribution was similar according to urgency status ($p> 0.05$). Drains were used in 87.02% (n= 436) of the cases. The total number of drains was 584 and complications were recorded in 22.08% (n= 129). The distribution of the number of drains and complications was similar according to the urgency of the operations ($p> 0.05$). Enterostomy was performed in 16.16% (n= 81) of the cases; complications were found in 70.38% (n= 57) of these cases. Of the enterostomies, 35.8% (n= 29) were loop ileostomies and this was the most common type of enterostomy ($p< 0.05$). The second most common enterostomy types were ileocolostomy and end colostomy in emergency operations and end colostomy in elective operations, and the rate of ileocolostomy was higher in emergency operations ($p< 0.05$). When the distribution of complications according to the urgency status of the operations and the type of enterostomy was examined, the rate of no complications in loop ileostomies, double-barreled ileostomies, ileocolostomies, and end colostomies and the rate of complications in loop colostomy and double-barreled colostomy were higher, and there was no significant difference between both periods ($p> 0.05$).

**Conclusion:** When the use of drains and the presence of enterostomies in abdominopelvic surgeries and the development of complications are analyzed, it is seen that the urgency of surgery and the type of enterostomy applied do not change the complication rates, but the fact that the numbers are considerable reminds us that drains and stomas should be considered in terms of complications, which can be called the inner side of surgery, as well as the outer side that affects patient care and patient comfort in surgical wards.

**Keywords:** Drain, complications, stoma

**Table 1.** Presence of drain and enterostomy and complications according to demographic characteristics and urgency of operations

| | | Total (n= 501) | Emergency Surgeries (n= 203) | Elective Surgeries (n= 298) | |
|---|---|---|---|---|---|
| | | n (%) | n (%) | n (%) | |
| **Sex** | Female | 257 (51.29) | 98 (48.27) | 159 (53.35) | [a]**0.274** |
| | Male | 244 (48.71) | 105 (51.73) | 139 (46.65) | |
| **Age** | Min-Max (Median) | 18-90 (53) | 18-90 (52) | 19-90 (53) | [‡]**0.081** |
| | Mean ± SD | 51.78 ± 13.68 | 49.9 ± 16.05 | 53.1 ± 12.07 | |
| **Drain Presence** | | | | | |
| No drain | | 65 (12.98) | 30 (14.78) | 35 (11.75) | [a]**0.366** |
| There's a drain | | 436 (87.02) | 173 (85.22) | 263 (88.25) | [a]**0.054** |
| **Number of drains**** | | 584 | 245 | 339 | |
| Number of drains without complications | | 455 (77.92) | 180 (73.47) | 244 (71.98) | [a]**0.716** |
| Number of drains with complications | | 129 (22.08) | 65 (26.53) | 95 (28.02) | [a]**2.314** |
| **Enterostomy Presence** | | | | | |
| No stoma | | 420 (83.84) | 168 (82.76) | 252 (84.57) | [a]**0.021** |
| Stoma present | | 81 (16.16) | 35 (17.24) | 46 (15.43) | [a]**0.105** |
| **Stoma complication** | | | | | |
| No complications | | 24 (29.62) | 11 (31.42) | 13 (28.26) | [a]**0.171** |
| Complications | | 57 (70.38) | 24 (68.58) | 33 (71.74) | [a]**0.072** |
| **Stoma Type - Complication Development** | | | | | |
| Loop ileostomy | | 29 (35.8) | 9 (25.71) | 20 (43.47) | [a]**4.486*** |
| No complication | | 20 (68.97) | 7 (77.78) | 13 (65) | [b]**0.674** |
| Complication | | 9 (31.03) | 2 (22.22) | 7 (35) | |
| Double barrel ileostomy | | 11 (13.58) | 5 (14.28) | 6 (13.04) | [a]**0.057** |
| No complication | | 10 (90.91) | 5 (100) | 5 (83.33) | [b]**1** |
| Complication | | 1 (9.09) | 0 (0) | 1 (16.67) | |
| Ileocolostomy | | 12 (14.82) | 8 (22.85) | 4 (8.69) | [a]**6.885*** |
| No complication | | 6 (50) | 4 (50) | 2 (50) | [b]**1** |
| Complication | | 6 (50) | 4 (50) | 2 (50) | |
| Tip ileostomy | | 5 (6.17) | 2 (5.72) | 3 (6.54) | [a]**0.054** |
| No complication | | 4 (80) | 1 (50) | 3 (100) | [b]**0.4** |
| Complication | | 1 (20) | 1 (50) | 0 (0) | |
| Loop colostomy | | 4 (4.94) | 3 (8.58) | 1 (2.18) | [a]**4.224*** |
| No complication | | 2 (50) | 1 (33.33) | 1 (100) | [b]**1** |
| Complication | | 2 (50) | 2 (66.67) | 0 (0) | |
| Double barrel colostomy | | 1 (1.24) | 1 (2.86) | 0 (0) | [a]**3.356** |
| No complication | | 0 (0) | 0 (0) | 0 (0) | [b]**1** |
| Complication | | 1 (100) | 1 (100) | 0 (0) | |
| End colostomy | | 19 (23.45) | 7 (20.0) | 12 (26.08) | [a]**0.802** |
| No complication | | 15 (78.95) | 6 (85.71) | 9 (75) | [b]**1** |
| Complication | | 4 (21.05) | 1 (14.29) | 3 (25) | |

S-6529

# Approach to irreduced hernia with hybrid hernioscopy and laparoscopy

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## ABSTRACT

**Objective:** Endoscopic procedures have become widely accepted in all surgical applications. Despite the high cost, they are preferred because of their favorable results on wound complications, post-operative pain and early discharge. Hernioscopy is an endoscopic procedure performed through the hernia sac. In our study, we aimed to present a case of ileus due to torsiated intestinal anus detected by hernioscopy during irreduced hernia operation and the management of this case with laparoscopy and hernioscopy-guided hybrid operation.

**Material and Methods:** The hernia sac was accessed through a classic inguinal incision. After opening the hernia sac, a purse suture was placed around it and a 10 mm trocar was inserted through this incision. Hernioscopy was performed with the help of an endoscope. Since the intra-abdominal pathology was difficult to intervene with hernioscopy, a 10 mm trocar was inserted through the umbilicus and laparoscopy was performed through this area.

**Results:** A patient with irreduced inguinal hernia was operated under general anesthesia because of a compressed intestinal anus in the hernia sac. The hernia sac was accessed through a classic inguinal incision. When the hernia sac was opened, no intestinal anus was observed and hernioscopy was performed. No ischemia was observed in the intestinal anus during hernioscopy, but one small intestinal anus was adherent to the peritoneum and torsion was observed in this area. Therefore, the torsiated area was intervened with a 10 mm trocar above the umbilicus and a 5 mm trocar from the right midclavicular line.

**Conclusion:** In irreduced hernia cases, hernioscopy is very useful for the detection of pathologies that may be missed. These pathologies can be intervened with hernioscopy or hybrid laparoscopic surgery.

**Keywords:** Hernioscopy, laparoscopy, hybrid surgery

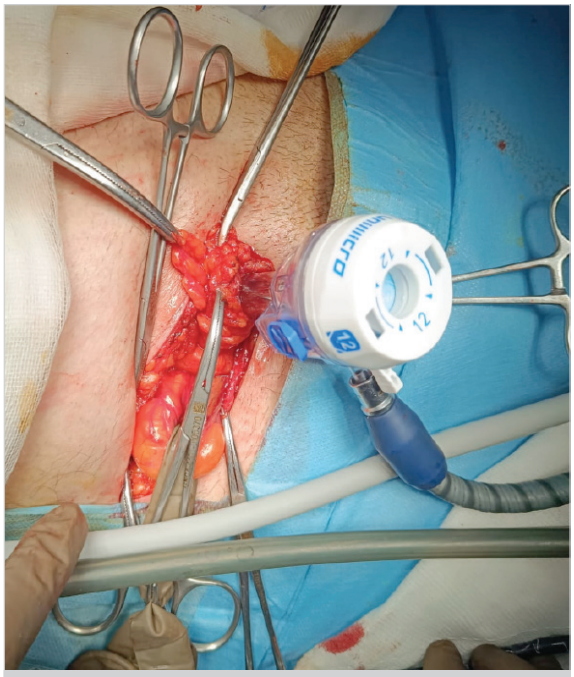

**Figure 1.** Hernioscopy procedure. A 10 mm trocar was inserted into the hernia sac and hernioscopy was performed.

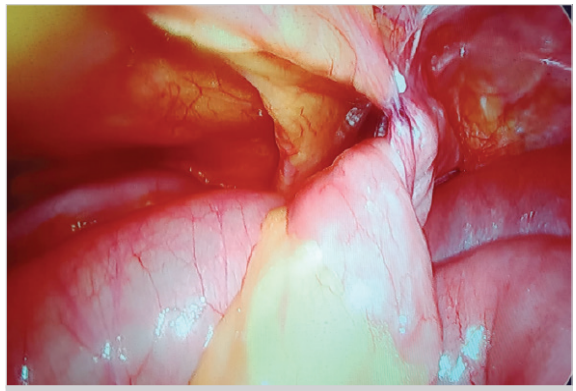

**Figure 2.** Laparscopy procedure. The torsiated intestinal anus was detected by hernioscopy and laparoscopic intervention was performed.

S-6561

# Phenotypic and functional comparison of low-density neutrophils accumulated in the spleen in cancer and acute tissue injury

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**ABSTRACT**

**Objective:** In this study, it was aimed to phenotypically and functionally characterize suppressor low-density neutrophils, which are known to increase in chronic inflammation, in the presence of tissue injury causing acute inflammation.

**Material and Methods:** Spleen samples were collected from 25 patients with splenic injury due to trauma and splenectomy and from 13 gastric and seven pancreatic cancer patients who underwent splenectomy as part of oncologic surgery. Splenocytes were spread on two phases with a density of 1.077 g/mL and 1.119 g/mL. Low density CD66b+HLA-DR-/low neutrophils were purified using MACS and FACS. Peripheral blood mononuclear cells were isolated from healthy donors, labeled with proliferation dye, stimulated with anti-CD3 antibody and co-cultured with low-density neutrophils for 72 hours. Expression of immunomodulatory genes was analyzed by qPCR and expression of immunomodulatory proteins by western blotting. For in vivo experiments, a 4T1 mammary tumor model was established in BALB/c mice. For the trauma model, incisional rupture injury was induced in the spleens of mice similar to that in humans. Peripheral blood and spleen samples were collected from mice. Cells were labeled with anti-mouse -CD45, -CD11b, -Ly6G, -Ly6C antibodies. For T cell suppression experiments, CD11b+Ly6G+ neutrophils were purified and isolated from healthy mice and co-cultured with anti-CD3-stimulated splenocytes.

**Results:** Immunomodulatory genes that are increased in cancer were also found to be increased in trauma. Spleen tissue of trauma patients had higher levels of low-density CD66b+HLA-DR-/low neutrophils than cancer patients. These cells, which are suppressive in cancer, were found to be non-suppressive in trauma patients. Similarly, CD11b+Ly6G+ neutrophils accumulated in the spleen tissue of traumatized mice were found to be non-suppressive, but these cells were found to be suppressive in mice with tumors.

**Conclusion:** The percentage of low-density neutrophils accumulated in the spleen increased significantly as the injury severity score increased. Although low-density neutrophils increased in acute inflammation, they were not found to have suppressive properties in contrast to chronic inflammation. This project was supported by Tubitak (Project No: 220S701).

**Keywords:** Inflammation, neutrophils

S-6684

# Use of ICG-SPY in acute intestinal ischemia: Video oral presentation

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**ABSTRACT**

**Objective:** Acute intestinal obstruction (AIO) can be roughly defined as obstruction of small or large intestinal passage. AIO accounts for 15% of all emergency acute abdomen cases. It causes ischemia and necrosis of the intestinal anus and leads to surgical resection. Large segmental resections increase morbidity and mortality rates. In this video oral report, it was aimed to present two cases in which we avoided unnecessary intestinal resection by using indocyanine green and ICG-SPY device.

**Material and Methods:** A 52-year-old male patient was admitted to the emergency department with abdominal pain. Intestinal obstruction localized in the proximal jejunum was detected in the examinations. The patient was operated on, and it was observed that there was a defect in the falciform ligament secondary to previous sternotomy and approximately 10 cm of jejunum anus was herniated. It was observed that the herniated anus was ischemic. After the ischemic segment was freed from the falciform ligament, angiography was performed using indocyanine green and SPY. The operation was terminated without resection as intestinal nutrition was found to be adequate. The patient was discharged with healing.

**Results:** A 50-year-old male patient presented to the emergency department with sudden onset of abdominal pain. In the anamnesis of the patient, it was learned that he was exposed to repetitive abdominal trauma due to his occupation and had no history of previous operation. Abdominal CT showed an obstructed transitional zone at the level of ileum in the upper quadrant. In the operation, it was seen that approximately 50 cm ileal segment was herniated into the paraduodenal area and was ischemic. The hernia sac was disrupted and the ischemic segment was freed. Angiography was performed with indocyanine green and SPY. Ans perfusion was judged to be adequate and the operation was terminated without resection. The patient was discharged with healing.

**Conclusion:** ICG-SPY is an infrared fluorescence imaging system that measures tissue perfusion. It allows surgeons performing open procedures such as breast and flap reconstruction, gastrointestinal and cardiothoracic surgery to visualize microvascular blood flow and perfusion in tissue during surgery. There is no data on its use in cases of intestinal ischemia. It was aimed to present that unnecessary intestinal resection can be avoided by using SPY in emergency cases of intestinal ischemia.

**Keywords:** Intestinal ischemia, ICG-SPY, indocyanine green

**S-6894**

# Use of incisional negative pressure wound therapy in breast cancer patients at high risk for wound complications

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## ABSTRACT

**Objective:** The main complications seen in patients undergoing modified radical mastectomy (MRM) for breast cancer are seroma, surgical site infection, hematoma, wound dehiscence, flap necrosis and nerve damage. The most feared effect of these complications is delayed adjuvant therapy. Incisional negative pressure wound therapy (iNPWT) reduces wound dehiscence by reducing edema and tension, especially at the incision line. This study aimed to compare healing times and wound site complications between patients treated with standard wound dressings and breast cancer patients treated with iNPWT.

**Material and Methods:** Data of 50 patients who underwent MRM and were at high risk for wound complications were evaluated. Two groups were formed as 30 patients who underwent iNPWT and 20 patients who underwent conventional dressing. Patients at high risk for wound complications were determined with a scoring system based on age >65 years, BMI> 30, comorbidities (HT, DM, CRF, RA, etc.), anticoagulant use, steroid use, smoking, large breast volume and neoadjuvant chemotherapy.

**Results:** Mean age of the patients was 53.58 years (range 30-80). The most common complications were seroma (20 patients) and partial flap ischemia (14 patients). Mean number of iNPWT admissions was 1.30 (range= 1-2) and the mean number of admission days was 4.47 (range= 2-9). Postoperative seroma was observed in eight patients in the iNPWT group and 12 patients in the conventional dressing group (p= 0.0018). Flash ischemia and dehiscence were statistically significantly higher in the conventional dressing group (p= 0.005, p= 0.021) (Table 1,2).

**Conclusion:** The use of iNPWT was shown to significantly reduce the amount of postoperative drainage, thus contributing to early removal of drains. Furthermore, iNPWT significantly reduced postoperative seroma, flap ischemia and flap detachment compared to conventional dressings.

**Keywords:** Incisional negative pressure wound therapy, breast cancer, wound complications

**Table 1.** Distribution of postoperative complications according to groups

| Postoperative Complications | No of Patients (%) | | p |
|---|---|---|---|
| | iNPWT (+) group 60 (n= 30) | iNPWT (-) group 40 (n= 20) | |
| Seroma | | | |
| - | 22 | 8 | **p= 0.018** |
| + | 8 | 12 | |
| Hematoma | | | |
| - | 29 | 19 | p= 0.768 |
| + | 1 | 1 | |
| Flap ischemia | | | |
| - | 26 | 10 | **p= 0.005** |
| + | 4 | 10 | |
| Flap necrosis | | | |
| - | 29 | 18 | p= 0.331 |
| + | 1 | 2 | |
| Flap separation | | | |
| - | 29 | 15 | **p= 0.021** |
| + | 1 | 5 | |
| Surgical site infection | | | |
| - | 29 | 17 | p= 0.316 |
| + | 1 | 3 | |

**Table 2.** Association between iNPWT and surgical drainage outcomes

| | No of Patients (%) | | p |
|---|---|---|---|
| | iNPWT (+) group 60 (n= 30) | iNPWT (-) group 40 (n= 20) | |
| Drainage volume, cc, median | 860 (340-2450) | 1000 (640-2400) | p= 0.011 |
| Time to drain withdrawal, days, median | 6 (4-12) | 7.5 (4-13) | p= 0.021 |

**S-6902**

# Molecular investigation of factors affecting the resolution of obesity and obesity-related metabolic complaints after sleeve gastrectomy in rats

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## ABSTRACT

**Objective:** Obesity causes chronic low-grade inflammation that affects the phenotype of many organs and is implicated in the development of several chronic inflammatory disorders, notably Non-alcoholic fatty liver disease (NAFLD) and NASH. Sleeve gastrectomy is the most important therapeutic procedure for the treatment of obesity, which remains effective in long-term follow-up. The efficacy of this treatment on the complications of obesity, especially NASH, is a matter of debate. Long-noncoding RNAs (LncRNAs) act as key regulators of inflammatory signaling pathways by mediating pre- and post-transcriptional gene regulation. In this thesis project, it was aimed to demonstrate the resolution of NAFLD and NASH, which are complications of obesity, after sleeve gastrectomy, to examine the association of high expression levels of HULC, MALAT1 and NEAT1, which are LncRNAs in signaling

pathways that play a key role in lipogenesis and inflammation processes and whose significance was determined in previous patient-based studies in our clinic, with the development of obesity complications and to examine the expression status of these marker candidates after sleeve gastrectomy surgery.

**Material and Methods:** Male Wistar rats were fed a choline-meyitonin defective high-fat dietary model for 8 (n= 14) and 12 (n= 7) weeks for NAFLD and NASH, respectively. Body mass index (BMI) higher than 0.65 was accepted as obesity criterion. Blood samples were collected from the rats at the end of the feeding period and at the end of the surgical follow-up period. NAFLD and NASH were characterized by hematoxylin-eosin (HE) staining of biopsy samples before surgery (laparotomy and sleeve gastrectomy). LncRNA MALAT1, NEAT1 and HULC expression profiles were analyzed by RNA isolation from blood and RT-PCR.

**Results:** There was no significant weight loss between pre- and postoperative period in the laparotomy group ($p > 0.05$), whereas significant weight loss was observed in the sleeve gastrectomy group ($p < 0.05$). MALAT1, NEAT1 and HULC showed high expression in NAFLD and NASH groups compared to healthy controls ($p < 0.005$). There was no significant difference in the preop and postop expression of the three LncRNAs in the laparotomy group, whereas HULC and NEAT1 showed a significant decrease especially in the NASH group undergoing sleeve gastrectomy ($p < 0.0001$).

**Conclusion:** Our results suggest that analyzing the serum expression levels of high NEAT1 and HULC are candidate biomarkers that can be used in the diagnosis and follow-up of obesity-related NAFLD and NASH.

**Keywords:** LncRNA, NASH, obesity

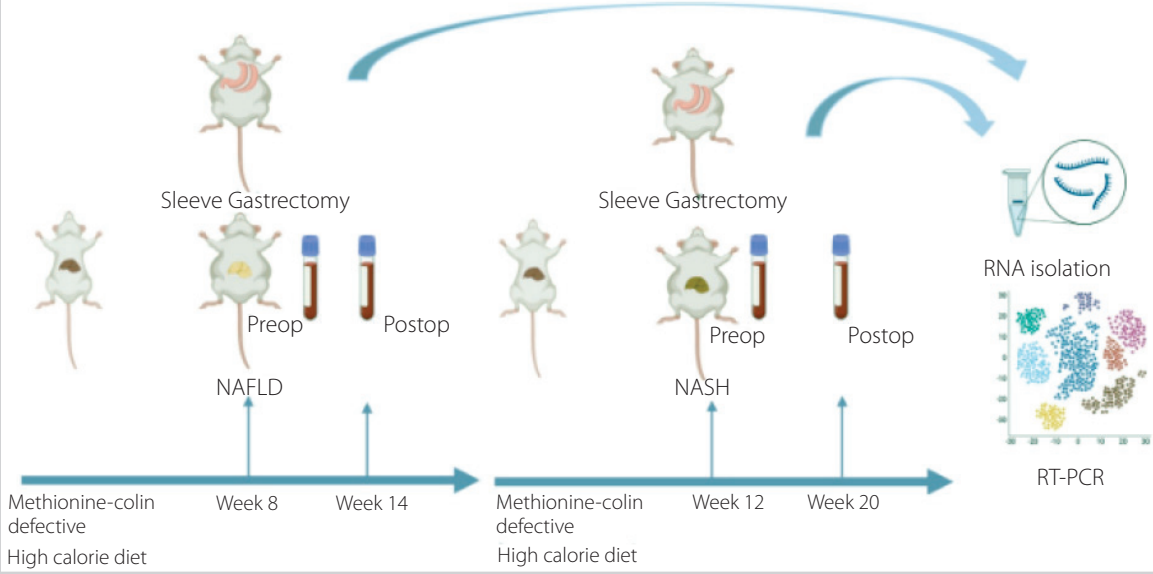


**Figure 1.** Method.

**S-7183**

# Can endocan act as a molecular "hepatostat" in liver regeneration?

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## ABSTRACT

**Objective:** The liver is specialized for the restoration of its anatomical volume and mass after toxic injury or surgical resection. The liver responds to these changes by tissue regeneration. The optimal mass of the liver after partial hepatectomy or transplantation depends on a number of parameters such as liver/body mass ratio and angiogenesis. After partial hepatectomy, hepatocyte regeneration and then angiogenesis occur. The liver reaches its

optimal functional volume and mass between postoperative days seven and 10 in rats. Regeneration stops when the liver reaches its optimal functional size. In this way, liver regeneration does not cause pathologic angiogenesis or uncontrolled growth. Regeneration ends when the appropriate mass and functional volume are reached. The liver undergoes hyperplasia or hypertrophy to maintain its mass. The liver has three mechanisms to maintain its mass. These are proliferation of existing differentiated cells, differentiation and proliferation of stem cells, and proliferation of periportal hepatocytes. If hepatocyte proliferation cannot compensate for cell loss, new hepatocytes will be produced from differentiating stem cells. If this mechanism is insufficient or inhibited, hypertrophy of periportal hepatocytes will occur. One of the important endogenous factors involved in tissue homeostasis is endostatin. Endostatin is an endogenous antiangiogenic molecule produced by hepatocytes. Systemic administration of endostatin inhibits angiogenesis and tumor growth and inhibits the growth of microscopic metastases. Endostatin levels have been shown to increase with increasing resection percentages in normal and cirrhotic liver. This revealed a significant correlation between serum endostatin level and regeneration capacity after hepatectomy in normal liver. In cirrhotic liver, endostatin level has been shown to be unrelated to liver regeneration. Proteoglycans (PGs) are complex macromolecules found mainly on the cell surface, in the extracellular matrix surrounding most mammalian cell types and also in body fluids. Endocan belongs to the dermatan sulfate proteoglycan family and is released from the vascular endothelium and found free in the bloodstream under healthy conditions. Thanks to their multitude of protein binding patterns (e.g. growth factors, chemokines, enzymes and other extracellular matrix proteins), they have been shown to play an important role in the regulation of normal cellular processes such as proliferation, remodeling, migration or angiogenesis. There are studies showing that endocan regulation is disrupted in disease states and in the cancer process. Increasing evidence suggests that endocan is an important cofactor in various cellular behaviors. It has been shown that endocan, a circulating proteoglycan, is concentrated in tumor sites and inflamed areas, and that soluble proteoglycans are critical regulators of chemokines and growth factors that influence inflammatory events and tumor behavior. Furthermore, proteoglycans have been found to be present at the wound site and regulate the activities of local growth factors. There is evidence for the effects of angiogenic growth factors on gene regulation of endocan. Furthermore, the direct interaction of these angiogenic growth factors and endocan leads to the regulation of the activation of these angiogenic growth factors. The expression of these angiogenic growth factors has been shown to be simultaneous with the expression of endocan. In the study conducted by our group in 2010, the relationship of endostatin with hepatic regeneration and angiogenesis after 70% hepatectomy in rats was examined. In this planned study, it was aimed to reveal the relationship of endocan with other regeneration and angiogenesis markers in liver regeneration after partial hepatectomy.

**Keywords:** Endocan, liver regeneration, hepatectomy

**S-7572**

# The effect of microorganisms growing in the wound on the length of hospitalization in Fournier gangrene

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## ABSTRACT

**Objective:** Fournier's gangrene is a microbial pathology characterized by necrotizing fasciitis involving the perianal and genital area. Fournier's gangrene most commonly originates from colorectal pathologies (30-50%), followed by urogenital pathologies (20-40%) and skin pathologies (20%). Despite all aggressive treatments, mortality can be as high as 63%. The length of hospitalization is long, causing loss of labor force and increasing hospital costs. In this study, we aimed to predict the length of hospitalization with the microorganisms grown in culture.

**Material and Methods:** Patients treated for Fournier's gangrene in Ankara City Hospital between February 2019 and February 2022 were included in our study. In total, 31 of 73 patients were eligible for the study. Data were analyzed with mean values and Student's t-test in SPSS 22 program.

**Results:** Out of the 73 patients screened, 31 patients were found to grow agents other than skin flora by proper deep tissue culture. Twenty-seven of the patients were males and six were females. Diabetes mellitus was found to accompany 16 of the patients. Mean age of the patients was 59.87 years. The most frequently isolated agent was *Escherichia coli* (25%). It was observed that diabetes mellitus accompanied all patients with fungal and *Acinetobacter* isolates. Mean length of hospitalization was 26.4 days. Mean length of hospitalization was the highest with 48 days in cases with *Corynebacterium striatum* growth in deep tissue culture and the lowest with seven days in cases with *Proteus vulgaris* growth. These values were statistically significant.

**Conclusion:** One of the most important problems in Fournier's gangrene is prolonged hospitalization and increased cost and labor loss. These losses can be minimized if the length of hospitalization can be predicted in advance. In our study, the length of hospitalization was found to be the highest in cases with *C. striatum* growth and lower in cases with *P. vulgaris* growth. Although *P. vulgaris* is mostly transmitted from the urinary system, we think that the reason for the more benign course of uro-genital fournieres is the lower virulence of this colonization.

**Keywords:** Fournier gangrene, tissue culture

S-7743

# Does minimally invasive hernia surgery cause less trauma?

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## ABSTRACT

**Objective:** Although there are reports to the contrary, the advantages of minimally invasive surgery such as early return to work, less pain and early discharge suggest that minimally invasive surgery causes less trauma and inflammation. In this prospective and randomized study, it was aimed to objectively demonstrate that minimally invasive surgery causes less trauma. We evaluated the systemic inflammatory response in open (Lichtenstein repair) and total extraperitoneal repair (TEP) inguinal hernia repairs. The systemic inflammatory response is thought to be proportional to the severity of trauma and determines the postoperative recovery of patients. In endoscopic procedures, the systemic inflammatory response can often be reduced by using minimally invasive techniques. It can be argued that TEP repair has the advantage of providing higher postoperative patient comfort and less pain than Lichtenstein repair. However, this can be proven with a more objective method of demonstrating pathophysiologic and/or biochemical mechanisms.

**Material and Methods:** The aim of this prospective study was to evaluate preoperative and postoperative 24 h blood neutrophil/lymphocyte count, CRP sedimentation, procalsitonin, IL-6 values and postoperative day three superficial ultrasound results of the inguinal region in patients who underwent open (33 patients) and closed (35 patients) inguinal hernia repair.

**Results:** Statistical analysis of the data revealed that postoperative neutrophil count was significantly lower in patients who underwent TEP repair compared to patients who underwent Lichtenstein repair. No significant difference was observed in sedimentation, CRP, procalcitonin and IL-6 values. As a result of superficial ultrasound performed on postoperative day three, the presence of seroma was statistically significantly less in patients with TEP repair than in patients with open repair. No significant difference was observed in the evaluation of seroma size in patients with seroma.

**Conclusion:** A systemic inflammatory response was observed in patients who underwent Lichtenstein repair and TEP repair. Although the inflammatory response was lower in patients who underwent TEP repair, there was no significant difference in blood tests except postoperative neutrophil count. The significantly lower presence of seroma in patients who underwent TEP repair may be associated with less trauma and less systemic inflammatory response despite more dissection.

**Keywords:** Inguinal hernia, inflammatory response

**Table 1.** Comparison of statistical analyses of the study groups

| | Open (Lichtenstein) n= 33 (48.52) | Closed (TEP) n= 35 (%51.47) | p (95% confidence interval) |
|---|---|---|---|
| Sex (Male) | 32 (97.5%) | 31 (88.6%) | 0.357 |
| Age | 54.00 ± 12.64 | 56.54 ± 11.79 | 0.394 |
| Preoperative neutrophil count | 4.16 ± 1.05 | 3.80 ± 1.42 | 0.239 |
| Preoperative lymphocyte count | 2.00 (1.10-3.10) | 1.80 (0.90-4.00) | 0.563 |
| Preoperative sedimentation | 4.00 (2.00-22.00) | 4.00 (2.00-25.00) | 0.077 |
| Preoperative CRP | 1.20 (0.20-19.90) | 1.20 (0.30-35.10) | 0.432 |
| Preoperative procalcitonin | 0.04 (0.02-0.10) | 0.03 (0.01-0.10) | 0.880 |
| Preoperative IL 6 | 0.61 (0.280-2.43) | 0.74 (0.041-2.96) | 0.148 |
| Preoperative neutrophil/lymphocyte ratio | 2.00 (0.84-4.15) | 1.94 (0.50-4.93) | 0.602 |
| Postoperative neutrophil count | 7.10 (3.50-12.40) | 5.60 (3.20-15.80) | 0.004 |
| Postoperative lymphocyte count | 1.78 ± 0.55 | 1.56 ± 0.47 | 0.093 |
| Postoperative sedimentation | 8.00 (2.00-23.00) | 7.00 (2.00-29.00) | 0.945 |
| Postoperative CRP | 20.00 (1.20-472.00) | 20.20 (4.00-139.00) | 0.985 |
| Postoperative procalcitonin | 0.05 (0.02-0.10) | 0.05 (0.02-0.24) | 0.790 |
| Postoperative IL 6 | 0.67 (0.04-2.44) | 0.68 (0.38-2.63) | 0.314 |
| Postoperative neutrophil/lymphocyte ratio | 4.00 (1.52-8.86) | 3.50 (1.46-14.36) | 0.401 |
| Seroma (present) | 19 (57.6%) | 6 (%17.1) | 0.001 |
| Seroma size | 8.00 (4-25) | 7.00 (3-22) | 0.587 |

*mean ± standard deviation **median (minimum-maximum).

**S-7973**

# Comparison of tumor infiltrating lymphocyte and positron emission tomography/computed tomography values in breast cancer molecular subtypes

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## ABSTRACT

**Objective:** Breast cancer is the most common type of cancer in women all over the world and in our country and is the second most common cause of cancer-related death after lung cancer. According to the 2018 research of International Agency on Cancer for Research (IARC) affiliated to the World Health Organization (WHO), the number of newly diagnosed breast cancer patients worldwide is 2.000.088 and the difference with lung cancer, the most common cancer, is only 5.000. In recent years, early diagnosis opportunities have improved due to the widespread use of screening methods with developing technology, and progress has been made in reducing mortality rates with newly developed chemotherapy agents and protocols. In a study published in 1994, the incidence of breast cancer in Türkiye was found to be 24/100.000, whereas a 2.5-fold increase was observed after a 25-year period. The reasons for this increase can be listed as changes in lifestyle (obesity, sedentary life, nulliparity, late childbirth (>35 years), short lactation period, early menarche, late menopause, long-term oral contraceptives and hormonotherapy, etc.), aging of the population, increased awareness, development of screening programs, and population growth. 18F-FDG PET/CT is increasingly being used in the clinical approach for staging, treatment response evaluation and re-staging in patients diagnosed with cancer. The 18F-FDG uptake intensity of the tumoral lesion provides important information about prognosis. The relative change in 18F-FDG uptake intensity after treatment has been shown to be a strong criterion for the evaluation of treatment response. Mechanisms such as GLUT I-III expression on the tumoral cell surface, hexokinase activity, tumor

vascularization, necrosis rate, lymphocyte infiltration, tumor cell density and mitotic activity index have been reported to change the 18F-FDG uptake rate. Studies have also shown that the disease-free survival time is inversely proportional to the SUVmax value, which expresses the 18F-FDG uptake intensity of the tumor, and as the value increases, the disease-free survival time shortens. Despite the advances in breast cancer studies and increased opportunities for early diagnosis, some points in breast cancer treatment design and prognosis prediction are still unclear. This study was designed and conducted to investigate the relationship between 18F-FDG PET/CT, a metastasis screening and staging method that is increasingly used in clinical approach, and tumor-infiltrating lymphocytes, which have become increasingly important in cancer studies and have opened new horizons since their discovery, especially in triple negative and HER2 positive subtypes of breast cancer defined as immunological cancer.

**Keywords:** Breast cancer, tumor-infiltrating lymphocytes, PET/CT

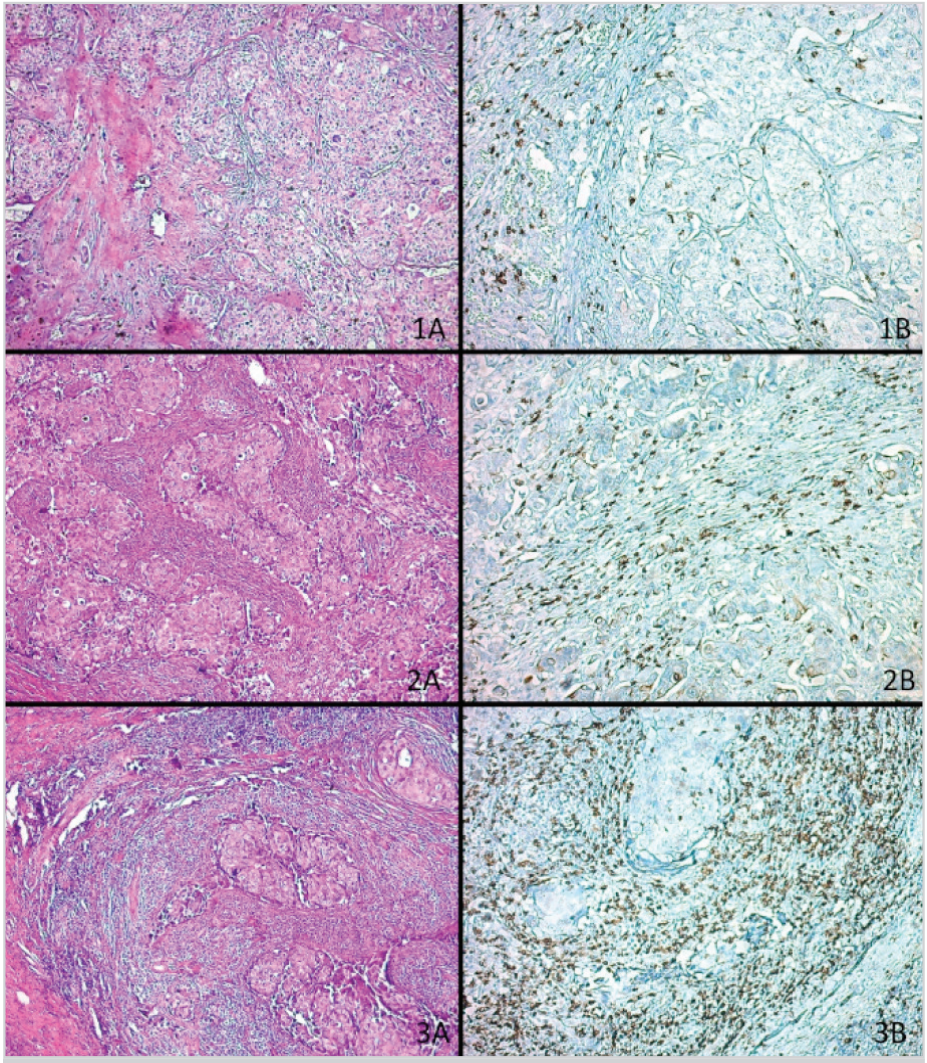


**Figure 1.** TILS microscopic images. Classification of tumor-infiltrating lymphocytes according to the International TIL working group criteria. (1A-1B) Low-grade TILs: Few lymphocytes in the stromal tissue around tumor islands. (2A-2B) Intermediate grade TILs. (3A-3B) High grade TILs: Dense lymphocytes in the stromal tissue around tumor islands. Images on the left (A's) are standard hematoxylin eosin staining at X50 magnification, images on the right (B's) are CD8+ lymphocytes grouped at X100 magnification.

**Table 1.** Size, mass SUV, TILS score correlation

| | | | Size | Mass Suv. | Aksilla Suv | TILS |
|---|---|---|---|---|---|---|
| **Spearman's rho** | Size | Correlation | 1 | 0.263* | 0.55 | 0.007 |
| | | p | - | 0.018 | 0.625 | 0.948 |
| | Mass Suv. | Correlation | 0.263* | 1 | 0.291* | 0.141 |
| | | p | 0.018 | - | 0.009 | 0.214 |
| | TILS | Correlation | 0.007 | 0.141 | -0.027 | 1 |
| | | p | 0.948 | 0.214 | 0.814 | - |

p< 0.05.

There is a statistically significant positive correlation between size and mass SUV values (p= 0.018 <0.05). An increase of 1 unit in tumor size leads to an increase of 0.263 units in mass SUV value. No significant correlation was found between TILS values and size, mass SUV.

**Table 2.** Correlation of age, mass size, grad, menopause and TILS rates

| | | | Age | Size | Grade | Menopause Status | TILS |
|---|---|---|---|---|---|---|---|
| **Spearman's rho** | Age | Correlation | 1 | 0.104 | 0.106 | -0.613 | -0.54 |
| | | p | - | 0.359 | 0.350 | 0.000 | 0.636 |
| | Size | Correlation | 0.104 | 1 | -0.030 | 0.059 | 0.007 |
| | | p | 0.359 | - | 0.789 | 0.601 | 0.948 |
| | Grade | Correlation | 0.106 | -0.030 | 1 | -0.168 | 0.291[1] |
| | | p | 0.350 | 0.789 | - | 0.135 | 0.009 |
| | Menopause Status | Correlation | -0.613 | 0.059 | -0.168 | 1 | -0.039 |
| | | p | 0.000 | 0.601 | 0.135 | - | 0.730 |
| | TILS | Correlation | -0.54 | 0.007 | 0.291* | -0.039 | 1 |
| | | p | 0.636 | 0.948 | 0.009 | 0.730 | - |

p< 0.05.

The correlation of age, mass size, grade, menopause and TILS rates were analyzed. There was a statistically significant correlation between TILS value and grade.

**S-8095**

# Is ultrasound successful in locating parathyroid adenomas?

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## ABSTRACT

**Objective:** Primary hyperparathyroidism (PHPT) is a disease caused by excessive secretion of parathormone (PTH) by an abnormal parathyroid gland, usually arising from a single adenoma, which can be localized by imaging modalities. Preoperative scintigraphy and ultrasound (USG) are frequently used to localize the parathyroid adenoma. This study was planned to evaluate the diagnostic accuracy of commonly used imaging modalities in PHPT patients.

**Material and Methods:**TIn our retrospective study, 255 patients (53.9 ± 14.7 years; 74% female) who underwent single gland parathyroidectomy for primary hyperparathyroidism between March 2012 and January 2022 were selected. The sample group had a successful operation without

complications. PTH and serum calcium levels were measured at the 2nd postoperative hour. Sensitivity, specificity, positive predictive value, and negative predictive value were calculated for imaging tests.

**Results:** Of these 255 patients, 207 patients were localized by preoperative USG with a rate of 80.6% and 163 patients were localized by scintigraphy with a rate of 75.4%. In patients in whom scintigraphy and USG were performed together, this rate was 100% (43 out of 43 cases). In all 43 patients in whom parathyroid adenoma was detected on USG and scintigraphy, the pathology was parathyroid adenoma. The location of parathyroid adenoma was reported in eight of 12 patients who underwent neck CT. Parathyroid adenoma was detected in 19 of 31 patients (12.2%) who underwent neck MRI. Frozen examination was performed intraoperatively in eight patients, and all eight patients were evaluated as parathyroid adenoma. There was a significant decrease in PTH and serum calcium levels at the 2nd postoperative hour ($p< 0.001$). The rate of normocalcemic patients was 90% at the 6th month follow-up. When the pathology reports of the patients were analyzed, it was seen that parathyroid adenoma was excised in 233 patients (91.4%), parathyroid hyperplasia in seven patients (2.74%), parathyroidal cyst in two patients (0.78%), suspicious lesion with unclear differentiation between parathyroid adenoma and carcinoma in one patient (0.38%), nonparathyroidal tissue in six patients (2.35%), and normal parathyroid gland in six patients (2.35%). USG had a sensitivity of 67.5%, specificity of 90%, positive predictive value of 99.4% and negative predictive value of 10.5% for parathyroid adenoma localization, while scintigraphy had a sensitivity of 11%, specificity of 41.7%, positive predictive value of 6.5% and negative predictive value of 41.9%. In addition, the difference between 2012-2018 (Group A) and 2019-2022 (Group B) was that in 2019-2022, all USGs were performed by a single radiologist experienced in the parathyroid field. In group A, the detection rate of parathyroid adenoma by USG was 67.2% and 80.9% by scintigraphy, while in group B, the detection rate of parathyroid adenoma by USG was 98.9% and 62.5% by scintigraphy.

**Conclusion:** Our success rate after parathyroidectomy was 92.1% in patients who underwent preoperative MIBI scintigraphy and USG. Parathyroidectomy can be safely performed by an experienced surgeon with imaging methods. In addition, ultrasound has high diagnostic accuracy for parathyroid adenoma localization when performed by experienced teams.

**Keywords:** Parathyroid adenoma, ultrasonography, scintigraphy

**S-8470**

# Artificial intelligence supported analysis of surgical trend changes in Türkiye

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## ABSTRACT

**Objective:** General surgery has shown many changes and developments in a dynamic historical process. Breakthroughs in technology have accelerated these processes and paved the way for many changes. Today, concepts such as artificial intelligence and minimally invasive surgery come to the forefront. This development is progressing in our country in parallel with the process in the world. In this study, we planned to analyze the historical development process of surgery using artificial intelligence robots based on medical literature data in Türkiye.

**Material and Methods:** To screen the data, articles indexed in the international index of PubMed search engine between 2015 and 2023 were considered. It was planned to analyze with the help of Bard® artificial intelligence supported chatbot. Through the commands given to Bard, trends in surgery were analyzed, data were interpreted, and evaluations were made on the results.

**Results:** According to the Bard analysis, 2473 laparoscopic-endoscopic, 492 robotic and 712 AI-assisted surgery articles from Türkiye between 2015 and 2003 were screened and included in the study analysis. These articles were accessed through the PubMed database. Bard calculated the statistical data of these articles separately by year. The number of articles increased steadily over the years. Looking at the proportional increases of the articles in their groups according to the years, the laparoscopic-endoscopic surgery group increased between 2.92-10.75%, the robotic surgery group increased between 7.14-20%, and the artificial intelligence assisted surgery group increased between 3.22-11.49%.

**Conclusion:** Surgical trends in Türkiye have evolved in the last 10 years to a minimally invasive and artificial intelligence-supported process that allows multidisciplinary management with the increasing involvement of technology. The increase in the number of articles over the years shows that Turkish surgeons are regularly developing and updating themselves in the scientific field. While minimally invasive surgery continues to maintain its increasing popularity in recent years, the fact that the highest proportional increase is in robotic surgery among the groups puts it one step ahead of laparoscopic and endoscopic surgery. Surgical studies in the field of artificial intelligence are also accelerating. By conducting these analyzes supported by artificial intelligence, we aimed to raise awareness of trend changes and to look at the surgical trend change from a different perspective.

**Keywords:** Artificial intelligence in surgery, minimally invasive surgery, surgical trends

**Table 1.** Article analysis by year

| Year | Laparoscopic-Endoscopic Surgery | Robotic Surgery | Artificial Intelligence Assisted Surgery |
|---|---|---|---|
| 2023 | 328 | 84 | 128 |
| 2022 | 304 | 72 | 116 |
| 2021 | 287 | 60 | 104 |
| 2020 | 279 | 56 | 99 |
| 2019 | 271 | 52 | 94 |
| 2018 | 263 | 48 | 91 |
| 2017 | 255 | 44 | 88 |
| 2016 | 247 | 40 | 85 |
| 2015 | 239 | 36 | 82 |

**S-8505**

# Etiologic reasons for delay in diagnosis and treatment of locally advanced breast cancer: Preliminary results from a nationwide survey

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## ABSTRACT

**Objective:** Breast cancer is the most common type of cancer in women worldwide and detection at an advanced stage is the most important factor in decreased survival. The aim of our survey study was to investigate the patient and regional factors that cause delay in diagnosis and treatment of breast cancer in different geographical regions of our country.

**Material and Methods:** A questionnaire survey was designed to be administered to women diagnosed with locally advanced breast cancer in all regions of Türkiye between August 2023 and October 2024. The questionnaire consists of two parts filled out by the patient and the physician to examine possible delays in diagnosis and treatment. The questionnaire designed for the data collection part was completed by a trained doctor/nurse during face-to-face interviews. The questions included socio-demographic factors [age, education level, first year of marriage, marital status, occupation, menopausal status, place of residence, health insurance, daily exercise time, body mass index (BMI), smoking, x-ray history, chronic disease, delay time, family history of breast cancer, age at first pregnancy, history of breast benign disease, breast self-examination, knowledge and regularity] and clinical factors (lymph node status, type of first symptom, tumor location, tumor type, date and type of onset of breast cancer symptoms noticed by patients, date of first symptom, date of first medical consultation, and socioeconomic factors at that time). Clinical data were obtained by the physician from the patients' medical records.

**Results:** The study included 37 centers from seven regions of Türkiye. A total of 55 researchers were involved in the creation of the questionnaire and the conduct of the study. A total of 532 questionnaires were evaluated in the first period. Patients were aged 22-89 years (median 55), 40% had primary school education and 51% performed breast self-examination (BSE). It was observed that 466 patients first applied to the hospital, 62 to the family physician, 327 knew how to perform BSE, 290 patients had the disease detected during screening, 290 patients applied to the doctor within one month after the mass was detected, and 271 patients rarely performed BSE. Regarding the factors causing delay in diagnosis, 17% of the patients reported that lack of knowledge and 16% reported that fear of death delayed consultation. The time to be examined by a specialist was within one month after the finding in 273 patients, between 1-3 months in 110 patients and more than three months in 70 patients, while the time to mammography was within one month in 331 patients, between 1-3 months in 84 patients and more than three months in 17 patients. Other radiologic imaging (ultrasonography-magnetic resonance imaging) was performed in 331 patients and tissue biopsy in 174 patients within one month. The most important factor in the delay of chemotherapy and radiotherapy after surgery was determined as treatment side effects. In the Black Sea region, the most common factors causing delayed diagnosis were not being able to get an appointment and fear of losing the breast, while in the Mediterranean and Eastern Anatolia regions it was fear of death, lack of information and lack of time from daily work, and in Southeastern Anatolia, Marmara, Aegean and Central Anatolia regions it was lack of information, economic reasons, fear of death and fear of losing the breast.

**Conclusion:** Approximately half of the women diagnosed with locally advanced breast cancer did not know how to perform BSE and 33% performed BSE once a month. Among patient-based factors across geographical regions, ignorance and then fear of death were found to be the most common factors causing delay. We believe that it will be possible to obtain more precise and detailed results on the factors causing delay in the diagnostic and treatment process by increasing the number of questionnaires to be obtained after the completion of the project.

**Keywords:** Delayed diagnosis, breast cancer, biopsy

**Table 1.** Results by region

| Regions | Most common reason | Most common second reason |
|---|---|---|
| Black Sea | Not getting an appointment (33%) | Loss of breast (33%) |
| Mediterranean | Fear of death (50%) | Ignorance (50%) |
| East Anatolia | Fear of death (50%) | Housework (50%) |
| Southeastern Anatolia | Ignorance (33%) | Economy (20%) |
| Marmara | Ignorance (33%) | Fear of death (25%) |
| Eagean | Ignorance (40%) | Loss of breast (20%) |
| Central Anatolia | Ignorance (40%) | Fear of death (33%) |

S-9421

# Effect of geraniol in hepatic ischemia reperfusion injury model induced in rats

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## ABSTRACT

**Objective:** Effect of geraniol in a rat model of hepatic ischemia reperfusion injury. This study aimed to investigate the effect of geraniol, an isoterpene group molecule, which is widely found in nature and has been shown to have antioxidant and hepatoprotective properties, on hepatic I/R injury in rats.

**Material and Methods:** Twenty-eight male Wistar albino rats weighing 350-400 g were used. The rats were divided into four groups as control group, I/R group, 50 mg/kg geraniol + I/R group and 100 mg/kg geraniol + I/R group. Ischemia and reperfusion periods were determined as 15 min and 20 min, respectively. Ischemia was started at the 15$^{th}$ minute of geraniol administration. ALT, AST, lactic acid levels were measured in sera. SOD, CAT and GPx activity levels were measured in liver tissues. Liver tissues were examined histopathologically.

**Results:** Intraperitoneal administration of 50 mg/kg and 100 mg/kg of geraniol molecule significantly decreased AST, lactic acid and TNF-α levels. Although serum ALT levels were significantly decreased in the 50 mg/kg group, the decrease in the 100 mg/kg group was not significant. SOD and GPx enzyme activities were shown to be significantly increased in the 100 mg/kg group, but no significance was found in the 50 mg/kg group despite the increase in enzyme levels. Again, although CAT enzyme activity was shown to increase in the 50 mg/kg and 100 mg/kg groups, the increase was not found to be significant. Suzuki score was significantly decreased in the 50 mg/kg and 100 mg/kg groups.

**Conclusion:** In this study, geraniol molecule was shown to reduce hepatic damage biochemically and histopathologically and to increase antioxidant defense enzymes. Thus, it was concluded that geraniol can be used to prevent hepatic I/R injury if supported by large centered and comprehensive studies.

**Keywords:** Hepatic ischemia reperfusion injury, geraniol, oxidative stress

S-9432

# Investigation of the expression of immune checkpoint and fatigue-related molecules in cytotoxic T cells in the lymph node near the tumor in breast cancer

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## ABSTRACT

**Objective:** In cancer, molecular and functional characterization of T cells in lymph nodes located close to the tumor is important in the treatment approaches to be applied to patients. However, studies with lymph nodes are limited and are mostly performed with peripheral blood samples. The aim of this study was to examine the expression of immune checkpoint and T cell fatigue-related molecules in cytotoxic T cells in lymph nodes close to the tumor of breast cancer patients.

**Material and Methods:** Lymph nodes and peripheral blood samples were collected from twenty-five breast cancer patients. Multicolor immunophenotyping was used to determine the expression of PD-1, TIM-3, LAG3, CTLA-4, CCR7, CD45RO, CD127, CD25, CXCR5 and ICOS molecules on CD3+CD4-CD4-CD56-CD8+ cytotoxic T cells.

**Results:** A population of cytotoxic T cells with high PD-1 and CXCR5 expression was found in the lymph nodes of breast cancer patients. Co-expression of PD-1, CXCR5, TIM-3 and ICOS indicated a follicular helper T cell (Tfh)-like, exhaustion-related immunophenotype in these cytotoxic T cells. Only a small population with CTLA-4 and LAG3 expression was recorded. PD-1+CXCR5+ cytotoxic T cells were found to largely exhibit a central memory phenotype (CD45RO+CCR7+).

**Conclusion:** In conclusion, regional lymph nodes of breast cancer patients harbor Tfh-like depleted cytotoxic T lymphocytes with high PD-1 and TIM-3 checkpoint molecule expression. The results were evaluated together with clinical data.

**Keywords:** T cell fatigue, breast cancer

**S-9555**

# Intraoperative indocyanine green angiography in the evaluation of the level of surgical amputation in patients with arterial ulcers due to thromboangiitis obliterans

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## ABSTRACT

**Objective:** Determining the level of amputation in patients with arterial ulcers diagnosed with thromboangiitis obliterans (TAO) is very important to protect patients from repeated surgeries and to ensure postoperative wound healing. This study aimed to evaluate the effect of intraoperative Indocyanine green angiography (ICGA) on amputation level in patients with TAO.

**Material and Methods:** The study included a retrospective review of all patient records admitted to the diabetic foot department of the general surgery clinic. The population of the study consisted of all patients with arterial ulcers diagnosed with TAO between November 2019 and January 2022, and the sample consisted of patients who underwent intraoperative ICGA.

**Results:** Our study included n= 26 patients with lower extremity arterial ulcer and TAO. The mean age of the patients was 62.3 ± 9.9 years and 88.5% were male. Tobacco product use was present in all patients. 38.5% of the patients underwent forefoot amputation and 34.6% underwent single amputation. The rate of patients who underwent peripheral angiography preoperatively was 96.2% and the rate of patients with successful angiography was 80.8%. The mean contraction (inflammation value) in patients who underwent ICGA intraoperatively was 167.3 ± 27.9. Postoperative complications did not develop in 53.8% (14) patients, while 30.8% underwent repeat surgery. The rate of patients with delayed wound healing was 34.6%. The mean postoperative wound healing time was 148.9 ± 109.3 days. The long-term follow-up period without ulcer development in these patients was analyzed as 474.3 ± 209.5 days.

**Conclusion:** Although recovery times were long in our patients, ICGA can be used as a functional and valuable diagnostic tool in TAO patients to protect patients from recurrent amputations and to keep the surgical amputation margin within a safe range.

**Keywords:** Indocyanine green angiography, thromboangiitis obliterans

S-9717

# The mysterious link between Parkinson's disease and appendectomy appendectomy: The surprising solution to Parkinson's disease?

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## ABSTRACT

**Objective:** Alpha-synuclein (α-syn) proteinopathy in enteric nervous system (ENS) neurons is proposed to play a critical role in the onset and progression of Parkinson's disease. Interestingly, the ENS of the human appendix harbors abundant α-synuclein and appendectomy has been associated with reduced risk and delayed onset of Parkinson's disease. This suggests that the appendix may influence PD pathology. In the light of this information, we investigated the relationship between appendectomy history and Parkinson's patients in our center.

**Material and Methods:** We retrospectively screened newly diagnosed Parkinson's disease patients in our hospital between 2016 and 2023. We questioned these patients about their age and history of appendectomy. Descriptive statistical methods were used to evaluate the data. Inclusion criteria, all patients with a diagnosis of Parkinson's disease who could be contacted; in addition, patients whose complete data could not be accessed and/or who did not consent to the use of their data in the study were excluded from the study.

**Results:** In our study, 80 of 185 patients diagnosed with Parkinson's disease were reached. Among this group, 12 patients who had undergone appendectomy were identified. When the mean age of the patient groups was analyzed, the mean age of patients diagnosed with Parkinson's disease who did not undergo appendectomy was 62.36 years. On the other hand, the mean age of the patients who were diagnosed with Parkinson's disease and underwent appendectomy was 65.75 years. The analysis showed that there was no significant correlation between the two groups. However, the study is ongoing and a detailed examination of other patients diagnosed with Parkinson's disease is planned. These findings may form the basis for a more comprehensive evaluation of the relationship between appendectomy and Parkinson's disease.

**Conclusion:** In the light of these studies, the potential association between Parkinson's disease and appendectomy has not yet reached a definitive conclusion. The links shown by various studies and epidemiologic data suggest that this is an important area of research. However, further studies are needed on the mechanisms underlying this association and how these findings can be translated into clinical practice. Further research on the etiology of Parkinson's disease could be an important step towards developing new strategies for the prevention and treatment of this disease. Furthermore, advances in this area may have general value for the understanding of neurodegenerative diseases.

**Keywords:** Parkinson's disease, appendectomy, α-synuclein

P-1206
DOI: 10.47717/turkjsurg.2024.P1

# A rare complication after gastrectomy: Unilateral intrathoracic leak

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## ABSTRACT

**Objective:** The incidence of postgastrectomy complications is 14% and ranges from superficial surgical site infection to septic shock. Anastomotic leakage from esophagojejunostomy after total gastrectomy is 1.51% and causes intra-abdominal abscess, peritonitis and enterocutaneous fistulas. Management of anastomotic leakage is important for prognosis.

**Material and Methods:** We report the nonoperative management of isolated right pleural anastomotic leakage from esophagojejunostomy in a patient who underwent total gastrectomy.

**Results:** A 60-year-old male patient with hypertension and BPH was hospitalized in our clinic because of a malignant diagnosis of biopsy and gastroscopy performed due to upper gastrointestinal bleeding, and gastroscopy revealed a mass causing gastric retention. Preoperative staging revealed a T4N3M1 tumor localized to the pylorus. Histopathological diagnosis was adenocarcinoma. Pet-ct showed metastatic lymph nodes in the upper lobe of the right lung. Total gastrectomy + Roux-en-Y esophagojejunostomy was performed. In post operative follow-up, the patient tolerated the r2 diet started on post op day three. On post op day five, dyspnea developed, and bilateral pulmonary effusion was observed on thorax CT. On post op day eight, right thoracic tube was inserted due to development of right hydropneumothorax. Piperacillin-tazobactam treatment was started by infectious diseases. On the 14$^{th}$ postoperative day, a 20 cm nitinol-coated stent was applied due to the detection of a defect in the esophagojejunostomy line on endoscopy. The patient was started on enteral nutrition with nasojejunal tube. On post op day 17, the thoracotube was replaced with a heimlich valve system and one additional drain was placed. Imipenem, teicoplanin and caspofungin were started on post op day 20. Daily lavage with sterile sf was performed in the thoracic tube. On post op day 34 oral intake was started. It was seen that he tolerated it. He was discharged on post op day 38 with drains. Drains were terminated at post op day 48. He was taken to oncology follow-up.

**Conclusion:** Anastomotic leaks after gastrectomy are a cause of mortality and morbidity. It should be kept in mind that leaks may be intraabdominal or intrathoracic, and diagnostic methods should be used accordingly. Early detection of leaks, shaping the treatment according to the localization and choosing the right treatment method are important in the management of patients. In conclusion, in addition to antibiotic therapy, washing and drainage through the thoracic tube provides treatment of empyema caused by intrathoracic leaks without the need for thoracoscopy or thoracic surgery.

**Keywords:** Gastrectomy, anostomotic leakage, gastrointestinal stent

P-2181

# Incidental detection of jejunal diverticulum: A case report

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## ABSTRACT

**Objective:** Jejunal diverticulosis was first described by Sommering and Baille in 1794. It is a rare upper gastrointestinal tract disease with an incidence of 0.06%-5%. It is most common in the 6$^{th}$ and 7$^{th}$ decades. Although it is usually asymptomatic, it may cause abdominal pain, nausea, vomiting and malabsorption. Diverticulitis is very rare due to the nature of the small intestinal contents. In this case report, it was aimed to present a patient with jejunal diverticulitis who was followed and treated in our clinic in the light of the literature.

**Results:** A 79-year-old male patient was admitted to the emergency department with complaints of abdominal pain, nausea and vomiting ongoing for two days. Laboratory tests revealed WBC 14 x 10$^3$/µl and CRP 102.4 mg/L. Physical examination revealed tenderness in the left upper quadrant, but no defense and rebound were detected. The patient underwent opaque computed tomography for splenic infarction. CT scan revealed mesodontic contamination in the area localized in the anus of the proximal jejunum, minimal free fluid and an appearance compatible with diverticulum. The patient was hospitalized due to advanced age and presence of comorbidities. Oral intake was stopped and IV replacement and antibiotherapy was started. The patient's mouth was opened gradually with no regression in infection parameters and no pathologic findings on physical examination. The patient who tolerated was discharged with recommendations.

**Conclusion:** Jejunal diverticulosis accounts for 8% of all small bowel diverticula. The incidence is 0.06%-5% in autopsy series and 0.02%-2.3% in radiologic examinations. The majority of patients are 70 years of age and older. It is considered a pseudodiverticulum. Factors such as peristalsis abnormalities and high intraluminal pressure are thought to play a role in the pathogenesis. They are usually asymptomatic. Depending on the extent of the diverticula, complications such as diverticulitis, perforation, intestinal bleeding and intestinal obstruction may occur. Patients with uncomplicated small bowel diverticulitis can be managed conservatively, similar to patients with colonic diverticulitis. Surgical treatment is the golden option in cases of jejunal diverticulitis perforation.

**Keywords:** Jejunal diverticulum, incidental

P-2544

# Repair of tracheal coagulation necrosis defect with tutopatch: Case report

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## ABSTRACT

**Objective:** Tracheal necrosis (TN) is a rare life-threatening complication of thyroidectomy. It is usually diagnosed in the early postoperative period with neck swelling or subcutaneous emphysema. To date, a limited number of cases have been reported worldwide. In delayed cases, severe stridor may be seen due to infection and edema. In this article, it was aimed to present a patient who developed tracheal necrosis after total thyroidectomy, bilateral central and left lateral lymph node dissection and reconstruction with tutopatch.

**Results:** A 50-year-old male patient was admitted to our clinic with a diagnosis of thyroid papillary ca. Pathologic lymph nodes were detected at left cervical level 2, 3 and 4. Total thyroidectomy + central lymph node and left lateral lymph node dissection was performed. On the 1st postoperative day, the patient complained of swelling and pain in the neck. Cervical CT was performed because of subcutaneous emphysema on physical examination. Loss of wall integrity was observed on the anterolateral side of the trachea. The patient was followed up conservatively, primarily with oral stop. Re-exploration was performed on the 2nd postoperative day due to an increase in emphysema. A loss of wall integrity due to electro-coagulation thermal damage of approximately 2-3 mm in the left anterior aspect of the trachea was observed. Since the tissues were severely edematous and fragile, primary closure and strep muscle flap were not considered. The defect was closed with Tutopatch after debridement. No recurrent emphysema or infection findings were observed in the follow-up of the patient. The patient was discharged on the 6th postoperative day.

**Conclusion:** Tracheal injury is a rare but mortal complication of thyroid surgery. This risk increases especially in cases with tracheal invasion. Although the use of bi-polar cautery reduces this risk, it does not reduce it to zero. Early diagnosis and treatment is life-saving. Treatment of tracheal necrosis is not standardized because of the rarity of complications. Treatment options depend on the severity of necrosis and the number of segments involved. The strep muscle flap can be rotated for small defects and the pectoralis flap can be used for larger defects. Repair with tutopatch is not yet available in the literature.

**Keywords:** Tracheal necrosis, tutopatch, flap

P-3571

# Our experience with simultaneous laparoscopic cholecystectomy and TAPP inguinal hernioraphy

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## ABSTRACT

**Objective:** Laparoscopic cholecystectomy (LC) and inguinal herniorrhaphy with transabdominal pre-peritoneal (TAPP) hernia repair have an important place in general surgical practice. LC has been adopted as the gold standard surgical method for cholecystectomy worldwide. Laparoscopic inguinal herniorrhaphy techniques have also gained acceptance due to their unique advantages. In this study, it was aimed to share our clinical experience in patients who underwent combined LC and TAPP herniorrhaphy.

**Material and Methods:** Between January 2020 and January 2023, 16 patients with a diagnosis of inguinal hernia and gallstones or polyps in the gallbladder who were operated in the General Surgery Clinic of Gülhane Training and Research Hospital were included in the study. All patients underwent LC and then TAPP herniorrhaphy. The data of the patients were analyzed retrospectively.

**Results:** All 16 patients included in the study were males. Mean age of the patients was 43 years (29-58). Eleven patients were operated on for unilateral inguinal hernia and cholelithiasis, four patients for bilateral inguinal hernia and cholelithiasis, and one patient for unilateral inguinal hernia and gallbladder polyp. Surgery was performed with five ports in six patients and six ports in 10 patients. Mean operation time was 95 (70-175) minutes.

None of the patients developed complications in the postoperative follow-up, and all patients were discharged with recovery. Mean duration of hospitalization was 1.5 (1-3) days.

**Conclusion:** According to the results of our study, there were no complications due to simultaneous surgery in patients diagnosed with inguinal hernia and cholelithiasis. Simultaneous operations are advantageous because of shorter mean operative time and lower cost. Simultaneous surgery can be safely performed in selected patients with inguinal hernia and cholelithiasis.

**Keywords:** Transabdominal pre-peritoneal (TAPP), hernia repair, cholecystectomy, laparoscopy

**P-4383**

# Focal localization in a case of recurrent primary hyperparathyroidism: Combined use of Casanova test and indocyanine green angiography

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## ABSTRACT

**Objective:** Recurrent primary hyperparathyroidism (rPHPT) is defined as the recurrence of hypercalcemia after a normocalcemic period of more than six months after parathyroidectomy. In symptomatic patients, the absolute treatment is surgery. Preoperative focal localization should be meticulously determined because of the high complication risk of reoperations. In this study, it was aimed to present the use of intraoperative indocyanine green (ICG) angiography and Casanova test for focal localization in rPHPT cases as a case report.

**Material and Methods:** A 44-year-old female patient with MEN1 syndrome underwent subtotal parathyroidectomy and thymectomy in 2006. In 2012, remnant resection and left forearm parathyroid transplantation were performed due to recurrence of remnant in the neck. Ultrasonography, scintigraphy and 4D-CT were performed due to the development of recurrence in the follow-up and no foci were detected. Therefore, it was decided to localize the focus by Casanova test. A tourniquet was placed on the proximal part of the left forearm where the remnant gland was located and blood was collected for parathormone (PTH) measurement from the left and right forearms at a systolic pressure of 150 mm-Hg for approximately five minutes. PTH was significantly higher in the left forearm compared to the right forearm. It was decided to remove the remnant in the left forearm. After intraveous ICG was administered to the patient, an uptake area was observed in the left forearm under autofluorescence camera. Foci of involvement were excised and sent for frozen examination. The smallest of the tissues confirmed as parathyroid tissue on frozen examination was transplanted to the right forearm. Intraoperative PTH decrease was also observed and the operation was terminated.

**Results:** Casanova test is one of the methods used in parathyroid surgery reoperations for focal determination when preoperative imaging methods are inconclusive. In the literature, it is generally used in recurrences of secondary hyperparathyroidism cases. In our study, the patient was operated because of the development of rPHPT due to MEN1 syndrome. The risk of complications increases in reoperations. With the help of ICG, the pathologic focus can be detected early and removed with a smaller dissection area. In our case, Casanova test and ICG angiography were used to reduce complications and to identify the focus, and the operation was completed without complications.

**Conclusion:** Preoperative localization of recurrent hyperparathyroidism is important for surgical safety. Casanova test can be used to determine the localization in these cases. ICG angiography can be used as an advanced method to reduce surgical complications.

**Keywords:** Primary hyperparathyroidism, indocyanine green angiography, Casanova test

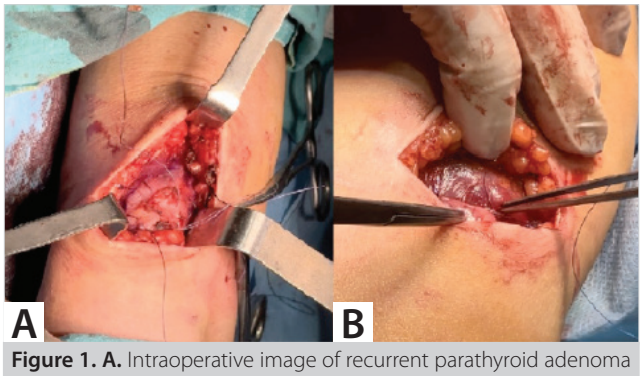


**Figure 1. A.** Intraoperative image of recurrent parathyroid adenoma in the left forearm. **B.** Transplantation image of remnant parathyroid tissue into the right forearm muscle.


**Figure 2.** Postoperative image of the excised parathyroid tissue under SPY Elite® system.

P-4410

# Rare tumors; biphasic synovial sarcoma originating from the abdominal wall

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## ABSTRACT

**Objective:** Synovial sarcomas (SS) are malignant soft tissue neoplasms representing 5 to 10% of all soft tissue sarcomas with an incidence of 2.75 per 100.000. The adult population has been found to have the highest prevalence rate, with the extremities being the most common sites. The anterior abdominal wall is an unusual site for SS. After liposarcoma and rhabdomyosarcoma, SS is a rare type of soft tissue sarcoma. In fact, a literature review reported only four cases in 55 years. The aim of this case report was to highlight the rarity of this condition, the available treatment options, and to increase knowledge about this difficult malignant tumor among young surgeons. Synovial sarcoma of the abdominal wall is an aggressive type of cancer that often requires aggressive treatment.

**Material and Methods:** A 38-year-old female patient came to our outpatient clinic with a mass in the right upper quadrant that had been growing on the anterior abdominal wall for about four months, causing distension. Physical examination revealed an immobile hard swelling with a diameter of 8 cm which was thought to be associated with the anterior abdominal wall causing deformity in the right upper quadrant. As a result of the examinations, a 12.5 x 12.5 x 8.5 cm heterogeneous mass with a lobulecontoured 12.5 x 12.5 x 8.5 cm entering the abdominal cavity, which was thought to originate from the rectus sheath, was noted. Then the patient underwent total excision of the mass, including the anterior sheath of the rectusabdominis muscle, partial rib resection and repair with dual mesh.

**Results:** The pathology result was in favor of abdominal wall biphasic synovial sarcoma. The lesion size was 12 cm. Surgical margins were normal. After nine months of follow-up, no complications were observed.

**Conclusion:** Synovial sarcoma is a rare pathology with no specific findings both clinically and radiologically. The main treatment modality is surgery with healthy resection margins. Synovial sarcoma of the abdominal wall is among the rare tumors, so it is difficult to obtain a positive preoperative diagnosis due to the lack of specific clinical and radiological findings. Surgical treatment with intact surgical margins is the main treatment modality, followed by multidisciplinary management with appropriate chemotherapy and radiotherapy to prevent recurrence.

**Keywords:** Synovial sarcoma, abdomen, excision

P-4606

# Posterior reversible encephalopathy syndrome after thyroidectomy: Case report

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## ABSTRACT

**Objective:** Posterior reversible encephalopathy syndrome (PRES) is a transient clinical picture that can be diagnosed by neurological examination and radiological imaging methods. Symptoms such as rapidly progressive headache, mental status changes, visual disturbances, paresis, nausea and generalized seizures are usually accompanied by hypertension. The pathophysiologic mechanism has not yet been fully clarified. Cases have been reported after pregnancy toxemia, organ transplantation, immunosuppressive therapies, systemic inflammatory response syndrome (SIRS), autoimmune diseases, porphyria, chemotherapy treatments and shock. In this article, it was aimed to present a patient who developed visual loss after thioidectomy operation and was diagnosed as pres.

**Results:** A 40-year-old male patient was admitted to our clinic with a diagnosis of toxic diffuse goiter. In his anamnesis, it was learned that he was treated for HT and epilepsy. Bilateral total thyroidectomy was performed under general anesthesia. The patient who showed hypertensive course in the postoperative period was taken to the intensive care unit. The patient described sudden visual loss in the 2nd postoperative hour. Neurologic examination revealed blurred consciousness and loss of orientation. The patient was consulted with the ophthalmology clinic and pupillary light reflex was normal and bulbus movements were free. The patient who had a history of epilepsy was consulted with neurology. Cranial tomography and MRI were performed. MRI showed edema in bilateral parietal-occipital lobes consistent with PRES. Antiedema treatment and antihypertensive treatment were administered and visual functions improved at the end of 24 hours. The patient was taken to the ward and discharged on the 4th postoperative day.

**Conclusion:** PRES is clinically characterized by nonspecific findings such as headache, nausea, vomiting, visual and mental changes, but radiologically it is characterized by diffuse cerebral edema which is more prominent in the occipital and parietal regions. The pathophysiology is the development of cytotoxic edema after cerebral vascular spasm secondary to sudden hypertension. PRES is a condition whose clinical and radiologic findings can be reversed rapidly with prompt diagnosis and treatment. With early diagnosis, the disease can be reversed without leaving sequelae.

**Keywords:** PRES, hypertension, reversible

**P-4751**

# Ectopic parathyroid adenoma-our CTF experience

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## ABSTRACT

**Objective:** Ectopic parathyroid adenoma causes diagnostic and therapeutic difficulties in the management of patients with hyperparathyroidism. Diagnosis with imaging and surgery is difficult in these lesions. It is the cause of unsuccessful first surgical intervention.

**Material and Methods:** Eight patients with ectopic parathyroid adenoma who were examined for primary hyperparathyroidism between 2017 and 2021 were retrospectively analyzed.

**Results:** The mean age of the patients was 48 years (range= 35-70), with seven females and one male. The diagnosis was primary hyperparathyroidism in five patients and persistent hyperparathyroidism in three patients. Scintigraphy was used for preoperative imaging in six patients, PET in one patient, and 4-DCT in one patient. Partial sternotomy was performed in one patient, Kocher necklace incision in one patient and VATS in six patients. Pathology revealed parathyroid adenoma in seven patients and no parathyroid gland in one patient.

**Conclusion:** Choosing the most appropriate preoperative imaging modality and the right surgical approach in patients with ectopic parathyroid adenoma is important for successful patient management.

**Keywords:** Ectopic, parathyroid, sternotomy

P-4803

# A patient with food residue in the drain incision after abdominal drainage catheter withdrawal: A case report of drain migration

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## ABSTRACT

**Objective:** Abdominal drains are routinely used after abdominal operations to provide drainage of peritoneal collection, bleeding and possible anastomotic leakage in the closed cavity. The continued use of drains following surgical procedures is still a controversial issue. However, many surgeons prefer long-term drain use, especially in major abdominal surgery patients. In addition to complications such as pain, infection and obstruction, strangulation and organ perforation may be rare complications of long-term abdominal drain use. A limited number of case reports of luminal organ migration have been reported in the literature. It was aimed to present a patient with intestinal abdominal drain migration in a patient who underwent pelvic exenteration in the light of the literature.

**Material and Methods:** A 57-year-old female patient who underwent low anterior resection operation for colon cancer was diagnosed with pelvic recurrence two years later. Pelvic exenteration was performed together with the urology clinic. After receiving adjuvant treatment, the patient underwent a repeat operation due to a solid mass filling the pelvis completely. No distant organ metastasis was detected. The operation was terminated after placement of an abdominal drainage catheter as the mass invaded the iliac vascular structures and multiple metastatic implants were seen in the small intestine segments.

**Results:** In the follow-up of the patient, the oral was opened after postoperative spontaneous gas stool discharge. Active peritoneal ascites was obtained from the drain and the patient was discharged with the drain. In the follow-up, the patient's drain was removed after the ascites drainage was under control in the 2$^{nd}$ postoperative week. After removal, food residue compatible with parsley was detected at the drain incision site. Abdominal CT was performed with suspicion of intestinal perforation. No intraabdominal free air or appearance compatible with abscess was observed. The patient was followed up considering drain migration and drain epithelialization tract between the intestine and abdominal cavity. No pathologic findings were detected in imaging studies and routine laboratory tests. The patient was referred to the medical oncology clinic and discharged.

**Conclusion:** Postoperative surgical drainage by surgeons is a traditional technique and dates back to Hippocratic times. However, the use of drains is not without complications. Some of these complications include drain site cellulitis, bleeding, kinking that may require surgical removal of drains, intestinal obstruction, incisional hernia, erosion of adjacent structures and fistula formation. The literature on migration of drainage catheters into the intestinal tract is very limited and all of the publications in the Pubmed database are case reports. In the etiology, improper fixation of the drain, low abdominal pressure and the pressure of body weight on the drain when the patient lies on the same side as the drain have been held responsible, but none of these factors is accepted as a definite factor.

**Keywords:** Drain, migration, foreign body

P-4851

# Efficacy of plantago major in an experimental ischemic colitis model

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## ABSTRACT

**Objective:** There are studies in the literature suggesting that plantago major extract reduces ischemia reperfusion injury. Pentoxifylline (PTX) is known to be effective on ischemic colitis. In this study, it was aimed to investigate the effects of plantago major extract and PTX in an experimental ischemic colitis (IC) model in rats.

**Material and Methods:** In the study, 30 male Wistar Albino rats weighing between 200-250 grams were used. The rats were randomly divided into five groups (Sham, placebo, high dose plantago major, low dose plantagomajor and pentoxifylline group). The experimental ischemic colitis model was established as described by Griffen and Hagihara. Group 1 (high dose plantago major) received 2000 mg/kg/day plantago major extract with orogastric cannula for three days (n= 6) after laparotomy and ischemic colitis model, Group 2 (low dose platago major) received 1.000 mg/kg/day plantago major extract with orogastric cannula for three days (n= 6) after laparotomy and ischemic colitis model, Group 3 (pentoxifylline group) received 50 mg/kg/day pentoxifylline by intraperitoneal injection for three days (n= 6) after laparotomy and ischemic model, Group 4 (placebo group) received 10 mg/kg 0.9% NaCl by oralgastric cannula for three days (n= 6) after laparotomy and ischemic colitis model. In Group 5 (Sham group), only laparotomy was performed and closed (n= 6). After 72 hours, rats were sacrificed by intracardiac blood sampling and relaparotomy was performed. Total antioxidant level (TAS), total oxidant level (TOS), oxidative stress index (OSI), total thiol (TT), native thiol (NT), matrix metalloproteinase 1 (MMP1), matrix metalloproteinase 7 (MMP7) and stromelysin 2 levels were measured in tissue and serum samples. Pathologically ischemic colon segment was evaluated after resection using macroscopic damage assessment, wallance scoring, ischemic area measurement, Chi scoring.

**Results:** In our study, intestinal dilatation, presence of acidic fluid and serosal changes were observed more in the sham group than in the other groups in the ischemic colitis model ($p< 0.05$). However, perforation and adhesion findings indicating severe ischemic colitis were not observed in any group. However, macroscopic damage scoring (MVD) defined by Wallace et al. did not show a significant difference between the groups. In our study, TOS was not significantly different between the plantago major groups and the pentoxifylline group and was lower than the placebo group, while total antioxidative levels were negatively correlated with TOS.

**Conclusion:** The findings of our study show that the use of plantago major and pentoxifylline is effective in the ischemic colitis model in rats compared to the placebo group. Statistically similar results were obtained between the groups despite different doses in the plantago major groups. However, this is thought to be due to the small sample size. With this, antioxidant and anti-inflammatory activity of plantago major extract was demonstrated and no statistically significant positive effect on ischemia was found.

**Keywords:** Ischemic colitis, experimental ischemic colitis model, plantago major

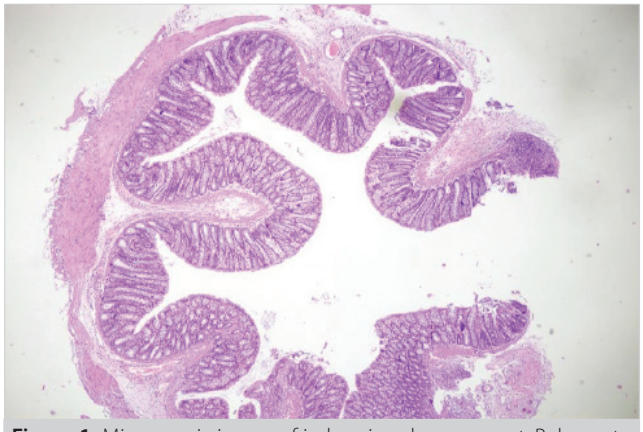

**Figure 1.** Microscopic image of ischemic colon segment. Belongs to group 1 (given a high dose of plantoga major).

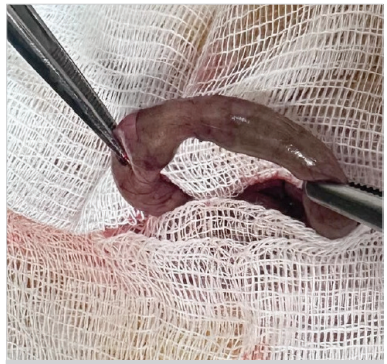

**Figure 2.** Belongs to the Sham group. Ischemic colon segment.

**Table 1.** Pathology scoring of groups

| | | Wallace Classification | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Number of Rat | 0 | 1 | 2 | 3 | 4 | 5 | ≤6 |
| High dose plantago major (Group 1) | n= 6 | 2 | 2 | 0 | 1 | 0 | 0 | 1 |
| Low dose plantago major (Group 2) | n= 6 | 0 | 1 | 0 | 2 | 0 | 0 | 3 |
| Pentoxifyline (Group 3) | n= 6 | 0 | 3 | 0 | 0 | 1 | 2 | 0 |
| Placebo (Group 4) | n= 6 | 0 | 0 | 1 | 0 | 1 | 0 | 3 |
| Sham (Group 5) | n= 6 | 0 | 0 | 2 | 1 | 1 | 1 | 0 |

**Table 2.** Chi scoring of groups

| | | Chi Score | | | | | |
|---|---|---|---|---|---|---|---|
| | Number of Rat | 1 | 2 | 3 | 4 | 5 | 6 |
| High dose plantago major | n= 6 | 2 | 3 | 1 | 0 | 0 | 0 |
| Low dose plantago major | n= 6 | 1 | 1 | 0 | 0 | 2 | 2 |
| Pentoxyphyline | n= 6 | 1 | 0 | 3 | 1 | 0 | 1 |
| Placebo | n= 6 | 0 | 0 | 2 | 0 | 0 | 4 |
| Sham | n= 6 | 0 | 0 | 2 | 0 | 1 | 3 |

**Table 3.** Biochemical parameters of groups (Average Values)

| Biochemical Parameters | High Dose Plantago Major Group | Low Dose Plantago Major Group | Pentoxifine Group | Placebo Group | Sham Group |
|---|---|---|---|---|---|
| Tissue total oxidant level (μmol $H_2O_2$ equivalent/mL mg protein) | 2.88 | 3.02 | 2.51 | 3.42 | 3.63 |
| Serum total antioxidant level (mmol ascorbic acid equivalent) | 0.85 | 0.80 | 0.88 | 0.49 | 0.32 |
| Tissue total antioxidant level (mmol ascorbic acid equivalent/mL mg protein) | 1.09 | 1.01 | 1.19 | 0.95 | 0.87 |
| Serum oxidative stress index (Au) | 9.99 | 12.27 | 9.34 | 21.83 | 37.27 |
| Tissue oxidative stress index (Au mg Protein) | 2.64 | 3.01 | 2.12 | 3.58 | 4.18 |
| Serum total thiol (μmol/L) | 310.12 | 279.34 | 340.73 | 222.83 | 205.10 |
| Serum native thiol (μmol/L) | 276.72 | 226.78 | 317.80 | 167.54 | 130.58 |
| Serum disulphide (μmol/L) | 16.70 | 26,28 | 11.46 | 27.65 | 37.26 |
| Serum Mmp1 (ng/mL) | 3.64 | 5.40 | 2.61 | 6.68 | 6.90 |
| Tissue Mmp1 (ng/mL mg protein) | 2.20 | 3.02 | 1.97 | 3.36 | 3.48 |
| Serum Mmp7 (ng/L) | 276.74 | 292.63 | 223.08 | 316.32 | 328.46 |
| Tissue Mmp7 (ng/L mg protein) | 70.57 | 85.31 | 55.89 | 119.09 | 126.42 |
| Serum stromelysin 2 (pg/mL) | 298.44 | 318.27 | 283.88 | 361.13 | 363.03 |
| Tissue stromelysin 2 (pg/mL mg protein) | 80.58 | 86.42 | 72.25 | 109.91 | 124.03 |

P-5280

# A rare benign lesion of the breast: Pseudoangiomatous stromal hyperplasia: Case report

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## ABSTRACT

**Objective:** Pseudoangiomatous stromal hyperplasia is a benign breast lesion first described by Vuitch et al. in 1986 in nine cases. It is usually found incidentally in 23% of breast biopsy material in premenopausal women. The mass-forming form is encountered in lower rates. It is generally asymptomatic. Rarely, it is found in men with gynecomastia. Pathologically, the lesion is defined as benign proliferation of stromal myofibroblasts. It consists of small vessel-like (pseudoangiomatous) clefts surrounded by dense collagen stroma and spindle cells lining them. They are generally free of atypia and are not considered to increase the risk of breast cancer. This study aimed to report a case of pseudoangiomatous stromal hyperplasia in which we found a small focal atypical ductal hyperplasia at the border of the lesion on pathologic examination after excision of the palpable mass detected ultrasonographically.

**Material and Methods:** A 30-year-old female patient presented with swelling and pain in the right breast six months ago. Her medical history included normal delivery 1.5 years ago and breastfeeding for four months. She had normal menstrual cycle and no history of hormone use. She had a rare smoking history. There was no history of breast cancer in her family history. Physical examination revealed a 2 cm mobile mass at nine o'clock in the right breast. USG showed a lesion with solid and cystic components at a distance of 2 cm from the areola at the nine o'clock level of the right breast, clustered microcalcifications were observed in the vicinity of the cystic component, and dense vascularization was observed in the solid component, with a total size of approximately 25 x 15 mm (Figure 1). USG-guided tru-cut biopsy of the lesion was compatible with pseudoangiomatous stromal hyperplasia.

**Results:** The patient was operated with these findings, and the mass was removed together with the surrounding intact breast tissue. Final pathology revealed a 4.5 x 4 x 2.5 cm lumpectomy material microscopically showing a well-circumscribed multilobulated mass consisting predominantly of areas of pseudoangiomatous stromal hyperplasia. Atypical ductal hyperplasia characterized by proliferation of small monotonous cells in an area of epithelial hyperplasia was detected in a small focus at the border of the lesion (Figure 2).

**Conclusion:** Pseudoangiomatous stromal hyperplasia is a rare benign breast lesion mostly found in premenopausal women. It is usually detected incidentally in biopsy materials performed for other breast lesions. More rarely, it may present with a palpable mass. In our case, the patient presented with a palpable mass. There is no specific radiologic appearance. It is usually detected as a smoothly circumscribed, calcification-free lesion on mammography and a slightly heterogeneous, hypoechoic lesion on ultrasonography. Because of this appearance, it may be confused with fibroadenomas and phylloides tumors in the differential diagnosis. On macroscopic examination, PASH is a lesion with smooth borders and a wide range of sizes (1-18 cm). In our case, a 25 x 15 mm lesion with solid and cystic components, microcalcifications and dense vascularization was found. There was also an area of cellular atypia within the borders of the lesion.

**Keywords:** Pseudoangiomatous stromal hyperplasia, benign breast lesions

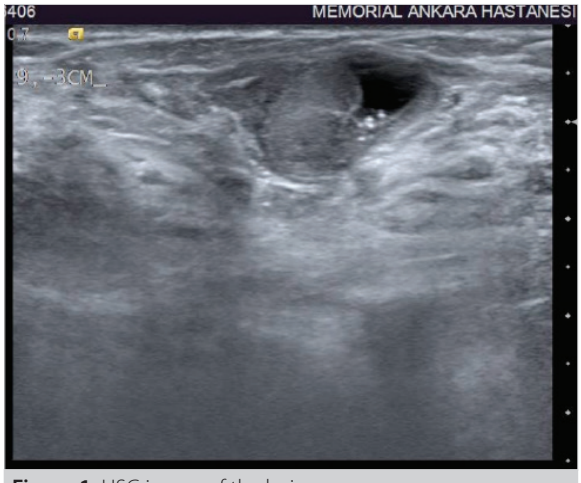


**Figure 1.** USG image of the lesion.

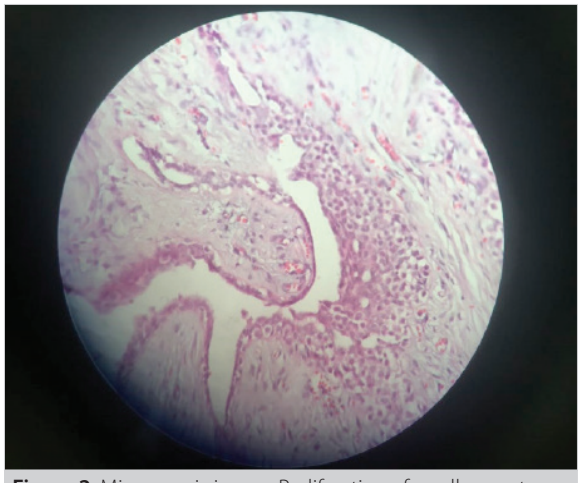

**Figure 2.** Microscopic image. Proliferation of small monotonous cells in one of the mammary ducts around the PASH area.

P-5368

# Isolated diverticulum of the cecum: A rare case report

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## ABSTRACT

**Objective:** Isolated cecal diverticulum was first described by Potier in 1912. The etiology and incidence are not clearly known. Uncomplicated cases usually have an asymptomatic course. Clinical findings often mimic acute appendicitis. The diagnosis is often made incidentally during surgery or colonoscopy. In this report, it was aimed to present a case of isolated cecal diverticulum discovered during colonoscopy in the light of the literature.

**Material and Methods:** A 54-year-old male patient was admitted to our clinic with abdominal pain. A minimal decrease in Hgb value was detected in the tests performed. Physical examination revealed no findings except tenderness in the right quadrant. Lower gastrointestinal tract colonoscopy was planned for the patient who had a family history of colon cancer. Colonoscopy revealed two diverticula located in isolated cecum. No mucosal or luminal pathology was observed in other segments. The patient who had no symptoms of active diverticulitis was discharged with a follow-up protocol.

**Results:** A 54-year-old male patient was admitted to our clinic with abdominal pain. A minimal decrease in Hgb value was detected in the tests performed. Physical examination revealed no findings except tenderness in the right quadrant. Lower gastrointestinal tract colonoscopy was planned for the patient who had a family history of colon cancer. Colonoscopy revealed two diverticula located in the isolated cecum. No mucosal or luminal pathology was observed in other segments. The patient who had no symptoms of active diverticulitis was discharged with a follow-up protocol.

**Conclusion:** Although the exact frequency of cecal diverticula is unknown, it has been reported as one case for every 34-300 appendectomy cases. They are usually asymptomatic lesions located mostly in the anterior wall of the cecum. In 80% of cases, they are within 2.5 cm from the ileocecal valve. In contrast to diverticula located in the distal colon, cecal diverticula are mostly congenital. They are often true diverticula involving all layers of the colonic wall. Single diverticulum is seen in the majority of cases. There is no clear consensus in the literature on the treatment of cecal diverticulitis. It has a spectrum ranging from conservative medical treatment to right hemicolectomy.

**Keywords:** Cecum, diverticulum, colonoscopy

P-5545

# A rare case: Gastric antral diverticulum

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## ABSTRACT

**Objective:** Gastric diverticulum is a rare entity. It is the rarest diverticulum of the gastrointestinal tract and is a very rare anatomical abnormality in general. They are usually discovered incidentally during routine diagnostic tests. Detection rates vary depending on the method used to detect them. Most patients are asymptomatic. Upper gastrointestinal endoscopies have a detection rate of 0.01-0.11%.

**Results:** A 79-year-old male patient was admitted to the general surgery outpatient clinic of our hospital with complaints of bloating. Gastroscopic examination revealed normal cardia, fundus, corpus mucosa and luminal structure. The antrum was hyperemic and edematous and biopsy was taken. A 1 cm gastric diverticulum was observed approximately 2 cm proximal to the pylorus. Pylorus, bulbus and postbulbar region were normal. *Helicobacter pylori* was detected in the biopsy and eradication treatment was given.

**Conclusion:** Management of gastric diverticulum largely depends on the severity of presenting symptoms and the size of the diverticulum. Asymptomatic individuals do not require any treatment. The majority of diverticula are congenital, discovered incidentally and are asymptomatic and therefore do not require treatment. Diverticula that cause significant symptoms or lead to complications (these diverticula are usually large) should be resected as there is no other effective treatment. Surgical resection remains the main treatment in cases where the GD is large (>4 cm in diameter), patients are still symptomatic after PPI treatment and complications such as ulceration, upper gastrointestinal bleeding, hemorrhage, perforation and malignant transformation occur.

**Keywords:** Gastric diverticulum, bleeding, endoscopy

P-5781

# A patient developing transient facial paralysis after roll (radionuclide-guided occult lesion localization) marking: A case report

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## ABSTRACT

**Objective:** Radionuclide-guided occult lesion localization (ROLL) is a method generally used to localize breast lesions that cannot be detected by palpation before excision and to confirm complete removal of the lesion after excision. In addition to breast lesions, it is also used for lymph node sampling and localization of parathyroid adenomas. In the ROLL procedure, Tc-99m-labeled human serum albumin is injected into and adjacent to the lesion within 24 hours before the operation and then the lesion is localized and excised by the gamma ray detection probe. Although it is a minimally invasive procedure, local complications may rarely develop. In this article, it was aimed to present a case with thyroid papillary cancer that developed transient facial paralysis after ROLL marking.

**Material and Methods:** A 16-year-old female patient was admitted to our clinic for total thyroidectomy and left lateral neck dissection with a diagnosis of thyroid papillary cancer. Before the operation, pathological lymph nodes in the left lateral level 2 upper border and level 4 lower border lymph node stations were marked with Tc-99m-labeled human serum albumin. Lateral neck dissection was completed with the help of a gamma probe and excision of the marked pathological lymph nodes was confirmed.

**Results:** In the postoperative period, the patient complained of numbness on the left side of the face, limitation of movement, and inability to close the left eye. Physical examination revealed facial paralysis consistent with facial nerve buccal and mandibular branch localization. The patient was consulted with the otorhinolaryngology clinic and edema in the peripheral branches of the facial nerve secondary to lateral level 4 ROLL marking and grade 3 peripheral facial paralysis due to this was confirmed. Steroid treatment was started, and the symptoms started to regress on the 2$^{nd}$ postoperative day. The patient was discharged with recommendations on the 7$^{th}$ postoperative day after almost complete regression of symptoms.

**Conclusion:** Accurate localization is the most important factor in the correct surgical removal of non-palpable lesions. The ROLL method minimizes the amount of healthy tissue removed unnecessarily while maintaining safe tissue margins. In the literature, erroneous localization between 1-5% in the ROLL technique in the presence of an experienced radiologist has been reported. There may be anaphylactic reaction due to Tc-99m and local complications such as seroma or hematoma.

**Keywords:** ROLL, gamma probe, facial paralysis

P-6445

# Giant, submucosal gastric lipoma causing anemia

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## ABSTRACT

**Objective:** Gastrointestinal (GI) lipomas occur third most commonly in the stomach after the colon and small intestine. Although gastric submucosal lipomas are rare benign tumors that are usually asymptomatic and detected incidentally during endoscopy, they may be symptomatic as in our case. This study aimed to report a case of a giant gastric lipoma localized in the greater curvature of the stomach causing iron deficiency anemia in a female patient.

**Material and Methods:** A 68-year-old female patient with complaints of abdominal pain, nausea and vomiting was diagnosed with iron deficiency anemia and treated. Colonoscopy revealed no pathology. Endoscopy revealed a 6 x 4 cm wide-based lesion in the corpus distal to the large curvature with a diameter of 6 x 4 cm, a 2 x 2 cm area with a small amount of exudate and an ulcer area depressed from the surrounding tissue. EUS, Doppler USG confirmed a homogeneous, hyperechogenous, thick-based lesion protruding into the lumen, consistent with lipoma, without blood supply in the

corpus greater curvature. Biopsy result was compatible with chronic inflammatory process. Abdominal tomography revealed a 62 x 48 mm, fat dense, capsulated lesion protruding into the lumen from the large curvature of the gastric corpus (Figure 1).

**Results:** The patient was operated with these findings, and wedge resection was performed through the great curvature to include the mass. Oral feeding was started gradually from postop day one. She was discharged uneventfully on postop day four. The final pathology was reported as a submucosal, smoothly circumscribed, 7.2 x 5.1 cm, lipomatous lesion with no mitotic activity, necrosis or cellular atypia causing central ulceration of the mucosa (Figure 2).

**Conclusion:** The most common findings of symptomatic gastric lipomas larger than 2 cm are abdominal pain, GI bleeding, obstruction and dyspepsia. In our case, a giant lipoma causing iron deficiency with no evidence of active bleeding was presented. Although such lesions are not neoplastic, they should be removed because of the complications they may cause. These lesions can also be excised endoscopically. In this case, since endoscopic excision was not considered by gastroenterology due to the size of the lesion, surgical excision was decided and the mass was removed by wedge resection in the most appropriate way for the patient according to the location of the mass.

**Keywords:** Iron deficiency anemia, giant submucosal gastric lipoma

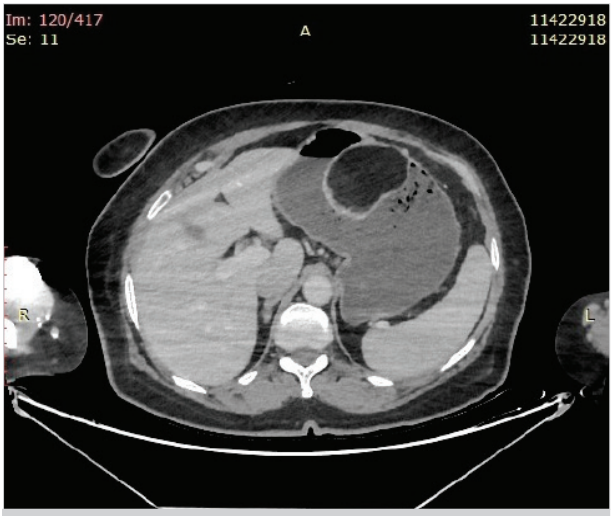


**Figure 1.** Preoperative CT image. In the gastric corpus, a 6 cm lesion of lipoma density located in the greater curvature is seen.

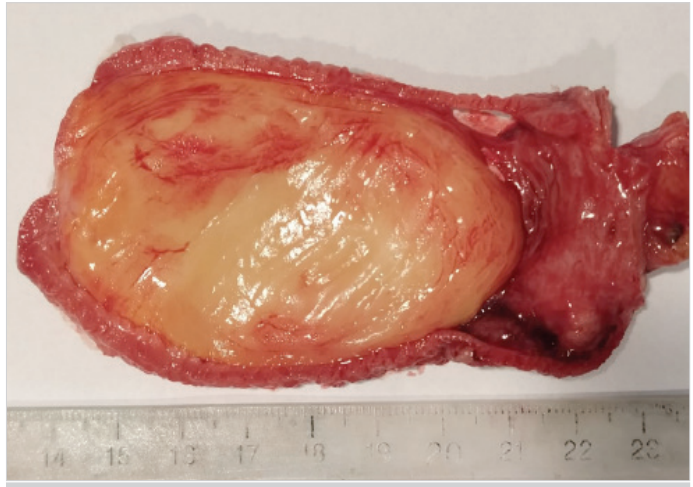

**Figure 2.** Preoperative CT image. Submucosal giant lipoma.

P-6682

# The fourth case in the literature: Isolated cyst of the cystic duct

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## ABSTRACT

**Objective:** The patient was operated for laparoscopic cholecystectomy in an external center, and magnetic resonance cholangiopancreatography (MRCP) was performed during the operation because of the possibility of anatomical variation. He was referred to our institution with a prediagnosis of choledochal cyst. We found isolated cystic duct dilatation during the operation, and it was aimed to present this as the fourth case in the literature.

**Material and Methods:** The patient was prepared for the operation. The operation was started with a classic right subcostal incision.

**Results:** In the operation, there was a cystic structure next to the gallbladder with separate walls. When it was separated by sharp and blunt dissection, the middle part of the cystic duct was dilated. The cystic structure was seen to be separate from the gallbladder. The cystic structure was split from the gallbladder. When the dissection was continued, a narrow canal was seen coming out of the gallbladder. It was concluded that this was the beginning of the cystic duct. The beginning of the cystic duct was narrow, then a dilated structure and when it was on the choledochal side, it was seen that the cystic duct narrowed again and entered the choledochal duct. The cystic duct was dilated from the middle part. The part where the clip was located

in the excised plexus was the junction of the cystic duct and the choledochus. The cystic duct was dilated in isolation. In the literature, three cases of isolated cystic duct dilatation were reported before our case.

**Conclusion:** Todani's classification is most commonly used for choledochal cysts. There are five types. Dilatation of the cystic duct is not included in Todani's classification. Serena et al. named isolated cystic dilatation of the cystic duct as type VI in the modified Todani classification. Ultrasound, computed tomography, cholangio-magnetic resonance image (MRI) and endoscopic retrograde cholangiopancreatography show all malformations of the biliary tree. Biliary abnormalities should be operated because of the risk of complications such as pancreatitis, acute cholecystitis and cholangitis. Treatment of cystic duct dilatations is similar to other dilatations. Surgery is the only option.

**Keywords:** Isolated, cyst, cystic duct

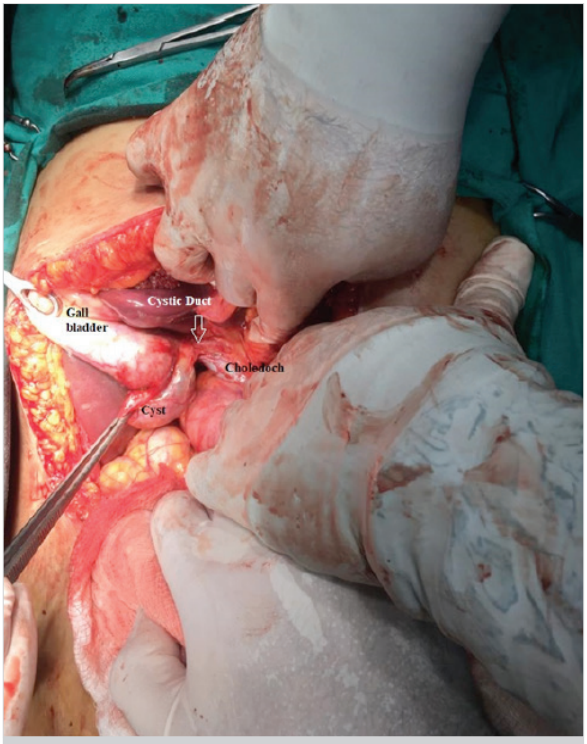


**Figure 1.** Cystic duct cyst. Gallbladder, cystic duct, cystic duct cyst and choledochal at the time of operation.

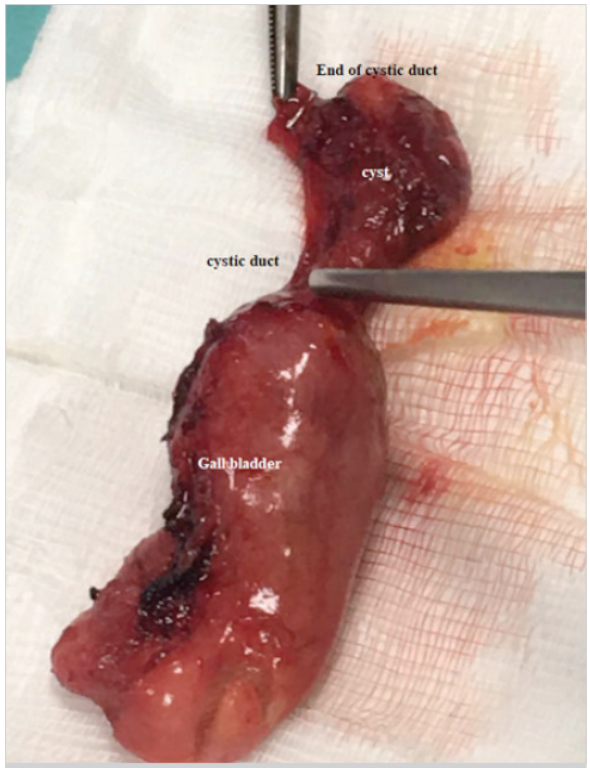


**Figure 2.** Part extracted during the operation. The distal cystic duct is closed with a clip.

P-6979

# Transient vocal cord paralysis after endotracheal intubation: Case report

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## ABSTRACT

**Objective:** Vocal cord paralysis after endotracheal intubation is a complication with an incidence of less than 0.1%, which can lead to aspiration pneumonia and postoperative mortality and morbidity. Bilateral vocal cord paralysis requires extreme caution as it can obstruct the airway and lead to serious respiratory problems. However, there are few reports of bilateral vocal cord paralysis associated with double lumen endotracheal tube (DLT). In this case, it was aimed to present a patient who developed vocal cord paralysis after endotracheal intubation in the light of the literature.

**Results:** A 63-year-old male patient was admitted to our clinic with a diagnosis of multinodular goiter. The patient was evaluated by the ENT clinic for vocal cord control during preoperative preparation. The patient underwent bilateral thyroidectomy operation. During the operation, bilateral laryngeal nerve integrity was recorded with nerve monitoring. On the 1st postoperative day, decreased voice quality and hoarseness were detected. Cold steam and prednol treatment was started. The patient was consulted with the ENT upon the lack of regression in her symptoms, and bilateral vocal cord was immobilized and paramedian fixed in indirect laryngoscopy. Since nerve continuity was recorded with a nerve monitor during the operation, transient vocal cord paralysis due to endotracheal tube intubation was primarily considered. Oral prednisolone was started for three weeks without respiratory distress and dysphagia. At the postoperative 1st month follow-up visit, the patient's voice quality improved.

**Conclusion:** Endotracheal intubation-induced vocal cord paralysis was first described by Ellis and Pallister, who suggested that compression injury caused by an overinflated cuff in the larynx may cause an anterior branch of the recurrent laryngeal nerve passing medial to the thyroid lamina. Conservative approach, steroids and cold vapor therapy is the first approach that comes to mind in treatment. In patients with respiratory distress and asphyxia, tracheostomy and temporary endotracheal intubation are inevitable treatment methods.

**Keywords:** Endotracheal intubation, vocal cord paralysis

**P-7230**

# An atypical cause of sleep apnea syndrome: Retrosternal goiter

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## ABSTRACT

**Objective:** Retrosternal goiter is an ectopic thyroid gland located in the thorax. Although 95% of substernal goiters have retrosternal extension, they are more frequently found in the anterior mediastinum. Most substernal goiters can be removed by the classical cervical approach. However, extracervical interventions such as sternotomy or thoracotomy may be required in some cases. Patients may develop dyspnea and dysphagia due to the increase in the size of thyroid nodules. In this report, it was aimed to present bilateral total thyroidectomy via median sternotomy in a patient who was examined for dyspnea and dysphagia and was found to have a giant retrosternal goiter causing severe narrowing of the trachea.

**Material and Methods:** In our presentation, we will present our patient who was referred to Haseki Training and Research Hospital general surgery clinic from internal medicine policlinic in April 2023. After complaints of dyspnea with a history of goiter, retrosternal goiter was detected in the investigations and bilateral total thyroidectomy operation was performed by median sternotomy.

**Results:** A 55-year-old male patient with a known diagnosis of obstructive sleep apnea syndrome with a history of goiter using CPAP was referred to us from the internal medicine outpatient clinic with the result of thyroid ultrasonography. On physical examination, there was a giant goiter extending to the substernal area. When the patient's complaints were questioned, shortness of breath was present. Pemberton's sign was positive. On thyroid ultrasonography, the trachea was markedly narrowed up to 1.5 mm at the level of the thyroid gland; there were multiple hypoechoic nodules, the largest of which was 4 cm on the right and 2.5 cm on the left, and reactive multiple lymph nodes with fatty central hilus. FNAB from the right 4 cm hypoechoic nodule was reported as Bethesda 3. Preop thyroid function tests, anti-TG and calcitonin values were within normal limits. Non-contrast CT of the neck and thorax was performed in extension. Preop vocal cord examination revealed minimal mobility secondary to left vocal cord mass compression. Bilateral total thyroidectomy was performed by median sternotomy. She was transferred to the intensive care unit due to the risk of tracheomalacia in the postoperative period. Post op period Ca= 9 mg/dL, PTH= 4 ng/dL, P= 4.9 mg/dL. He was transferred to the ward on post operative day two and left vocal cord was found to be paralytic. Anti-edema treatment was started in accordance with ENT recommendations. She was discharged on postoperative day seven with recommendations. Terminal pathology was benign. In the follow-up, the patient did not complain of hoarseness in the 2nd month post op and did not have dyspnea and stopped using CPAP.

**Conclusion:** Retrosternal goiter should be considered in patients presenting to the outpatient clinic with nonspecific complaints such as dyspnea and dysphagia. Further imaging modalities should be used when findings such as narrowing and pushing of the trachea are detected on POAG. Although the risk of complications is higher in retrosternal and giant goiters, the operation can be performed successfully in experienced centers.

**Keywords:** Retrosternal goiter, shortness of breath, hoarseness

**Figure 1.** Coronal section.

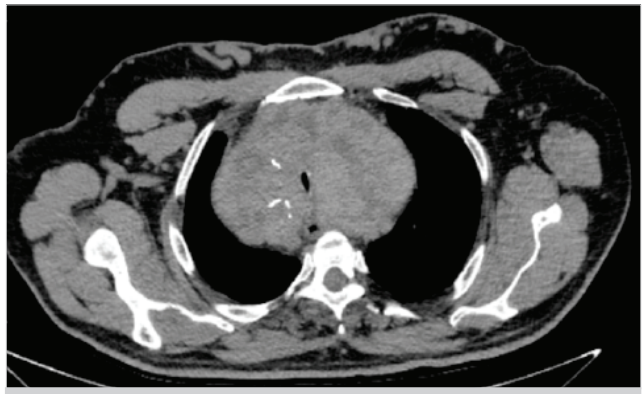

**Figure 2.** Axial section.

P-7955

# Colorectal cancer with MUTHY and MSH6 gene mutation: A case report

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## ABSTRACT

**Objective:** Many genetic alterations have been identified in colorectal carcinogenesis in the background of polyposis coli. The coexistence of mutations in different genes is becoming increasingly important in understanding cancer risks. The coexistence of the MUTHY gene, which encodes a protein that repairs oxidative damage in DNA, and MSH6 (MutS homolog 6), one of the DNA mismatch repair genes, is one of them. While MUTHY gene is associated with polyposis, inherited mutations in MSH6 gene are associated with Lynch syndrome. In this study, it was aimed to present a case of colorectal cancer (CRC) developing on the background of polyposis in which MUTHY and MSH-6 gene mutations were seen together.

**Material and Methods:** A 33-year-old male patient presented with rectal bleeding and difficulty in defecation. His family history revealed colon cancer in 2nd and 3rd degree relatives. Digital rectal examination revealed a mass approximately 5 cm from the anal canal. Radiologic imaging showed no extracolonic involvement. Colonoscopy revealed polyposis coli, and biopsy of the mass in the lower rectum was diagnosed as adenocarcinoma. Neoadjuvant three cycles of chemotherapy (FOLFOX) + radiotherapy (28 days) was applied. Laparoscopic proctocolectomy with ileal J pouch was performed. The postoperative period was uneventful, and he was discharged on the 7th day. Histopathologic result was reported as polyposis coli, moderately differentiated adenocarcinoma (pT3N0). The patient received adjuvant chemotherapy and eight-month follow-up was uneventful.

**Results:** In the literature, there are studies observing that MSH6 mutation is more likely to be found in CRC individuals with MUTHY mutation. However, there are also studies suggesting that the association of these two genes does not increase the risk of CRC. In MUTHY-associated polyposis syndrome, the age at which polyps and CRC develop is older, and cancer development occurs mostly in the proximal colon. The average age of CRC diagnosis in MSH6 mutation carriers is 42-69 years. It is rare to develop cancer at a young age and to have a mass in the rectum as in our case.

**Conclusion:** It is argued that additional testing for MUTHY gene positivity alone offers no advantage to the carrier. However, for monoallelic MUTHY mutation carriers, the coexistence of the pathogenic DNA mismatch repair (MMR) gene mutation may result in recommendations for increased screening. As the consequences of the MUTHY -MSH 6 mutation association become better understood, it will contribute more to clinical practice.

**Keywords:** MUTHY, MSH6, colorectal cancer

P-8531

# Robotic spleen sparing distal pancreatectomy

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**ABSTRACT**

**Objective:** Robotic surgery applications have been frequently used in hepatobiliary surgery as in many fields of general surgery in recent years. Although pancreatic surgery is a field with its own unique challenges, robotic applications provide us convenience in some difficulties in this field. Although spleen preservation is often not possible in distal pancreatectomy resections, an advantage of robotic surgery is that it provides us with this opportunity.

**Material and Methods:** We aimed to present a case of robotic spleen-sparing distal pancreatectomy in a patient with IPMN located in the pancreatic corpus and to analyze the technical aspects in the light of the literature.

**Results:** A 41-year-old female patient was operated on for a 2.5 cm diameter IPMN in the pancreatic corpus and underwent robotic spleen-sparing distal pancreatectomy. The patient was discharged on the 7$^{th}$ day with no post-op follow-up problems.

**Conclusion:** Minimally invasive robotic system can be used safely and effectively with low mortality and morbidity in experienced centers in pancreatic surgery.

**Keywords:** Pancreatic surgery, robotic surgery, spleen sparing pancreatectomy

P-9103

# An unexpected complication of difficult labor: Spontaneous liver rupture

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**ABSTRACT**

**Objective:** This case report discusses the clinical approach to spontaneous postpartum liver rupture.

**Material and Methods:** A 33-year-old female patient was hospitalized with placenta previa totalis at 34 weeks of gestation in her second pregnancy. She developed pre-eclampsia and underwent emergency caesarean section on the same day. After the emergency caesarean section, liver rupture and hematoma were detected when she was examined due to increasingly severe abdominal pain. The approach to spontaneous postpartum liver rupture is discussed in this case without a history of trauma and comorbidities.

**Results:** In the follow-up performed from the morning of the same day, progressive increase in liver function tests, elevated d-dimer and fibrinogen were detected. Coagulation values were not abnormal. In addition to the laceration area detected at the level of segment 7-8 on imaging, a hematoma reaching 5 cm in the widest part of the right lobe of the liver and continuing around the entire liver in the subcapsular area was observed (Figure 1).The patient was operated under emergency conditions due to diffuse intra-abdominal free fluid and expanding hematoma in the right lobe of the liver. During the operation, it was seen that the capsule was opened at the level of the laceration area, diffuse subcapsular hematoma in the liver and abundant hemorrhagic fluid in the abdomen (Figure 2). After placing hemostatic material in the laceration area, which was approximately 2-3 cm wide and 2 cm deep at the level of segment 7-8, "packing" was performed with compresses and waited. Since the bleeding stopped, the operation was terminated by placing two drains into the abdomen without any additional intervention. During the follow-up, the patient had recurrent hypertensive episodes that did not respond to medication and bleeding occurred again and a conservative approach was decided. The patient developed deep vein thrombosis in the right leg on post-op day nine and pulmonary embolism on post-op day 12. Anticoagulant DMAH was started for these reasons. After abdominal drain was removed on post-op day 15, the patient remained stable and was discharged on post-op day 20.

**Conclusion:** Spontaneous liver rupture during labor is extremely rare. Coagulation disorders secondary to pregnancy may be seen. Cases of subcapsular hematoma have been reported in patients with preeclampsia and HELLP syndrome. In the light of available data, a conservative approach may be preferred in these patients.

**Keywords:** Liver rupture, spontaneous rupture, emergency cesarean section

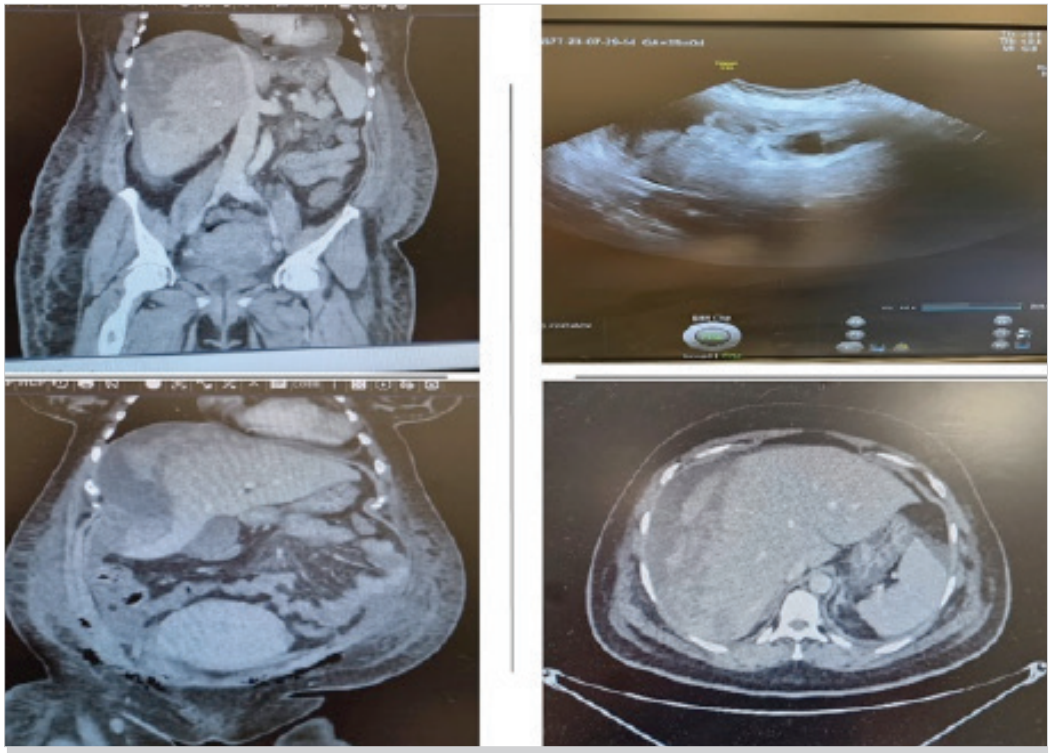

**Figure 1.** Preoperative radiologic appearance. Preoperative ultrasonography and tomography images show diffuse hematoma areas starting at the level of liver segment 7-8 with subcapsular spread.

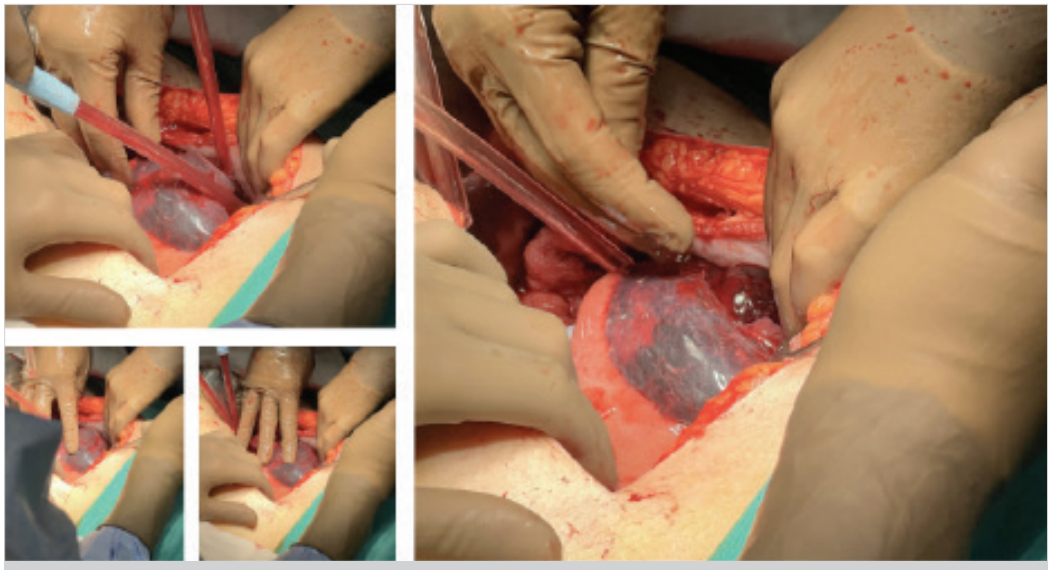

**Figure 2.** Intraoperative image. Perforated subcapsular hematoma and diffuse areas of persistent subcapsular hematoma on all liver surfaces.

P-9107

# Watermelon stomach: Gastric antral vessel ectasia, case report

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## ABSTRACT

**Objective:** Gastric antral vascular ectasia syndrome (GAVE), also known as watermelon stomach, is a rare but important cause of severe acute or chronic gastrointestinal blood loss in the elderly. GAVE was first described by Ryder in 1953 as "erosive atrophic gastritis with marked venocapillary ectasia" in gastrectomy specimens of isolated women. Although it is associated with heterogeneous medical conditions such as liver, kidney and heart diseases, its pathogenesis is unknown.

**Results:** A 37-year-old male patient was admitted to our outpatient clinic to investigate the etiology of anemia. In the anamnesis of the patient, it was learned that he was started on oral iron preparation due to low Hgb in the health center where he applied two weeks ago with the complaint of fatigue. Hgb 10.7 g/dL was measured in the tests performed in our hospital. The patient complained of melanoma, and upper gastrointestinal system endoscopy and lower gastrointestinal system colonoscopy were planned. Endoscopy of the patient, in whom no significant pathology was detected in colonoscopy, revealed multiple angiodysplasias in the antrum extending in a linear radial fashion towards the pylorus without active bleeding (GAVE). The patient, in whom no additional intervention was performed because no active bleeding was detected, was referred to the gastroenterology clinic for the regulation of medical treatment.

**Conclusion:** Gastric antral vascular ectasia is also called "watermelon stomach" because its lines resemble a watermelon on endoscopic appearance. Although it is a rare cause of gastrointestinal bleeding with an average of 4%, it has a very important place because it may require frequent transfusion. Although the pathogenesis of GAVE is still unclear, mechanical stress, humoral and autoimmune factors and hemodynamic factors are thought to play an active role. Endoscopic techniques such as sclerotherapy with proton pump inhibitors, multipolar electrocoagulation, argon and laser photocoagulation, argon plasma coagulation (APC) are used in the treatment.

**Keywords:** Vascular ectasia, watermelon stomach, endoscopy

P-9697

# Mesh migration, fistula formation, stoma retraction and subileus development after parastomal hernia repair: A demonstrative case of rare but well-known complications of hernia repair and stoma

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## ABSTRACT

**Objective:** Parastomal hernia is the most common long-term complication after stoma opening and an important morbidity factor in colorectal surgery. It has been demonstrated that the incidence of parastomal hernia is higher in end colostomies compared with other stoma types. Other stoma complications include peristomal skin irritation findings, stenosis, stoma retraction and malignancy recurrence.

**Material and Methods:** Clinical examination and imaging modalities such as ultrasonography and computed tomography can be used for diagnosis. There is no common consensus on treatment, and there are different approaches in the literature. Although there are publications suggesting that prophylactic mesh placement during stoma opening prevents the development of parastomal hernia in the long term, there are also studies showing that it does not prevent parastomal hernia.

**Results:** Main complications that may occur after hernia repair with mesh include recurrence, infection and mesh migration. In this study, we present a case with end colostomy in which mesh migration, fistula formation, stoma retraction and subileus development occurred after parastomal hernia repair with prosthetic mesh.

**Keywords:** Parastomal hernia, mesh migration, stoma retraction, stoma complications

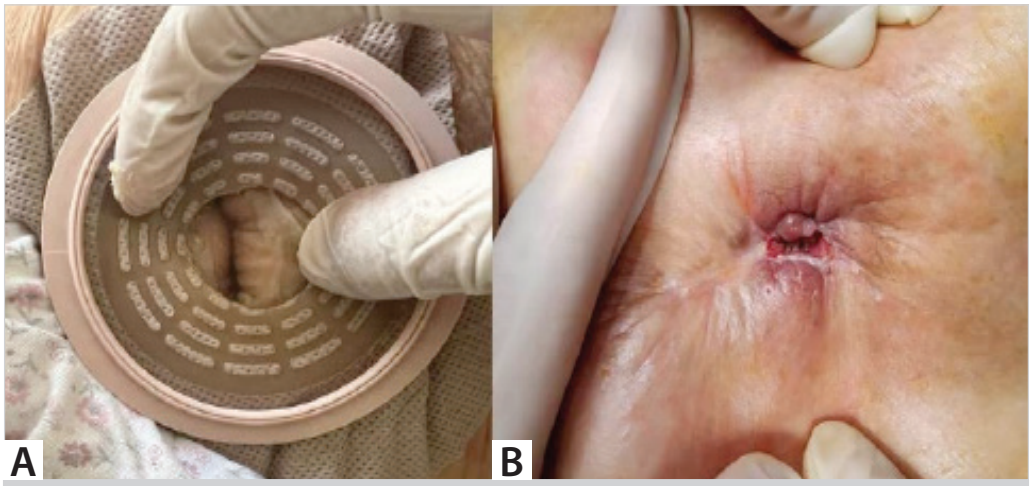


**Figure 1. A.** Stomal retraction, **B.** Mesh migration after parastomal hernia repair.

**P-9867**

# A rare acute abdomen clinic: Giant adrenal cyst

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## ABSTRACT

**Objective:** Adrenal masses are very rare in adult patients and are usually detected incidentally. These masses may be benign or malignant. Adrenal masses can reach large sizes because they are difficult to recognize. Large adenomas may present in various clinics due to compression of various organs depending on their size. This study aimed to present the case of a patient who was operated on because of an adrenal mass up to 20 cm in size causing acute abdomen clinic.

**Material and Methods:** The patient was admitted to the emergency department with complaints of abdominal pain, nausea and vomiting ongoing for two days. Physical examination revealed diffuse tenderness and deficiency in the abdomen. Laboratory tests revealed findings in favor of leukocytosis. Abdominal ultrasonography and tomography imaging performed under emergency conditions showed a lesion with a smooth cystic component starting from the pancreatic neighborhood and extending to the left pelvic inlet. Abdominal examination was evaluated as acute abdomen, and emergency operation was decided.

**Results:** Following laparotomy through midline incision, detailed abdominal exploration revealed a large cystic mass deviating the left kidney and left colon to the right. The mass was completely excised together with its capsule from the left retroperitoneal area. The pathology result of the excised cyst was found to be adrenal cyst. The patient was discharged with healing after no complications were observed during follow-up.

**Conclusion:** There are many causes of acute abdomen requiring emergency operation. In order to determine the causes of acute abdomen, the differential diagnosis should be determined by evaluating the clinic. When our patient was operated on for acute abdomen, a giant cystic mass was found to be the cause. Pathologic examination revealed an adrenal cyst. Adrenal masses should be considered in the differential diagnosis in similar clinical situations. When an adrenal mass is suspected, hormonal investigations should be performed.

**Keywords:** Adrenal cyst, acute abdomen

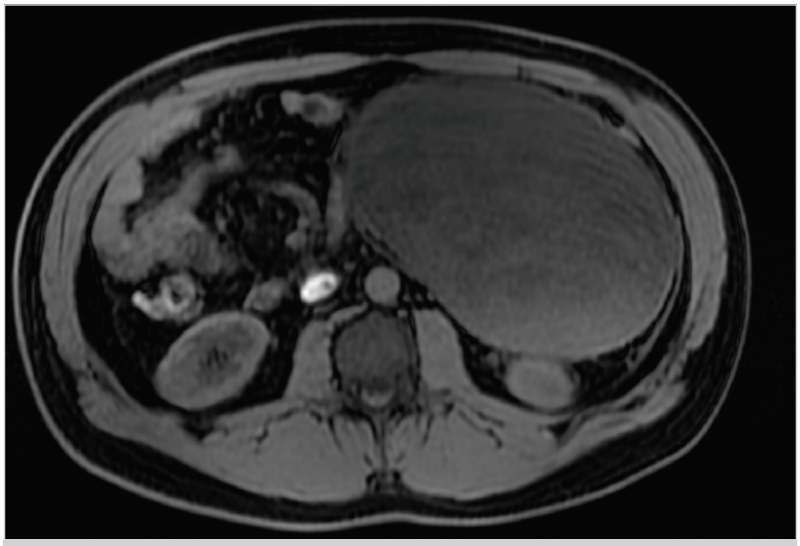

**Figure 1.** Cyst mr image. 20 cm intra-abdominal mass.