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Case Report

Appendix adenocarcinoma in an elderly patient from a nursing home

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ABSTRACT

Appendiceal malignancies are rare clinic entities. The clinical presentation of appendiceal malignancies is often atypical. Acute abdominal pain and acute appendicitis, which requires early surgical intervention, are the most common clinical presentations of appendiceal malignancies. In this case report, an adenocarcinoma of the appendix in a 64-year-old male from a nursing home has been presented. He had right lower quadrant pain for the last 5 days. On physical examination, he had significant guarding. Intravenous contrast-enhanced abdominopelvic tomography revealed no pathological features. Laparotomy under general anesthesia was scheduled. During exploration, a perforated appendicitis was observed. Formal appendectomy was performed. The patient was lost due to pneumonia and septic shock 5 days after surgical intervention. In addition, the natural history of the disease and its basic diagnostic and therapeutic aspects are discussed. Preoperative or intraoperative diagnosis may not be available for some patients. Thus, routine histopathological examination is essential for adequate diagnosis and treatment.

Keywords: Appendix vermiformis, adenocarcinoma, geriatric patient, acute abdomen

INTRODUCTION

Acute appendicitis is common among adult and geriatric patients (1). However, some clinical conditions, such as developmental abnormalities, are rarely observed in these patients. In addition, carcinoma of the appendix, carcinoids, or mucocele appendix may be observed rarely. Appendiceal malignancies are rare clinic entities and have been reported to constitute 1% of all colorectal malignancies and 1% of all appendectomy specimens (2). Clinical presentation of appendiceal malignancies is often atypical, which makes its diagnosis controversial and challenging in some patients.

Appendiceal malignancies are classified as primary and secondary tumors. Primary tumors are carcinoids, malignant mucocele, and adenocarcinoma. These different types of tumors have different clinical features and require different therapy and management strategies. Acute abdominal pain and acute appendicitis, which requires early surgical intervention, are the most common clinical presentations of appendix malignancies. Thus, preoperative diagnosis may not be available in most of the patients. However, ultrasonography or computed tomography may be useful in some patients. Intraoperative exploration also has limitations to diagnose appendiceal malignancies. It has been reported that the diagnosis of appendiceal adenocarcinoma is rarely established pre-operatively, and less than half of cases are diagnosed intra-operatively during acute or elective abdominal operations (3). Most tumors are identified only after histological examination of the removed specimens (4).

In this case report, an adenocarcinoma of the appendix in a geriatric patient has been presented. In addition, the natural history of the disease and its basic diagnostic and therapeutic aspects are discussed.

CASE PRESENTATION

A 64-year-old male patient with abdominal pain presented to our emergency service from a nursing home. There was limited knowledge on his medical history, and the family history was unknown. He had left hemiplegia and was on acetylsalicylic acid. His smoking and alcohol history was unknown. He had right lower quadrant pain for the last 5 days. On physical examination, he had significant guarding. No significant laboratory abnormality was noted. Abdominopelvic computed tomography with oral and intravenous contrast medium was obtained. The abdominal aorta was atherosclerotic, and intestinal segments were minimally dilated. However, appendix vermiformis was not observed, and additionally, no other pathologic finding was detected. Laparotomy under general anesthesia was scheduled. In the exploration, a perforated appendix was observed. Formal appendectomy was performed. The surgical site was irrigated and drained. The patient's medical treatment included ceftriaxone 1 gram two times a day and enoxaparin sodium (Clexane 6000 anti-Xa/0.6 mL). However, the patient was intubated due to pneumonia on the postoperative fifth day and lost due to septic shock. Histopathology revealed appendix adenocarcinoma. Tumor dimensions measured 2.5 x 1.5 x 0.8 cm. Microscopy demonstrated

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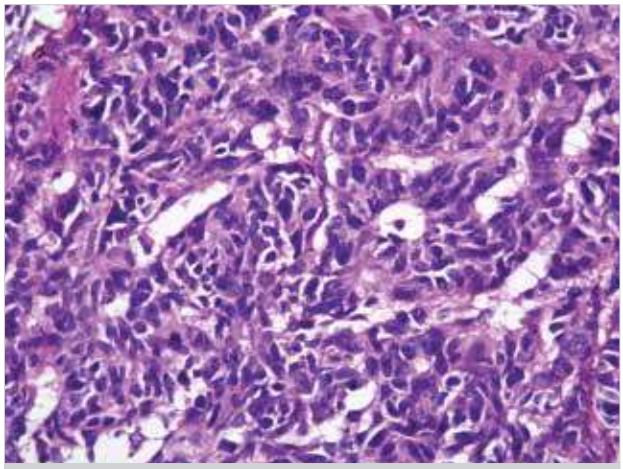

Figure 1. Pleomorphic tumor cells with hyperchromatic nucleus, H/E, x400

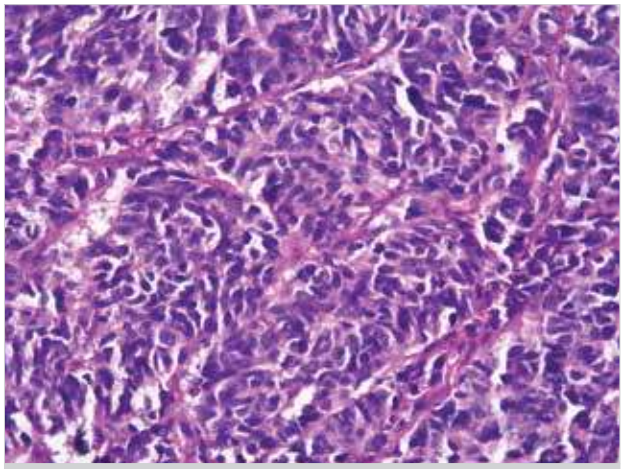

Figure 2. Atypical tumor cells forming solid layers, H/E, x400

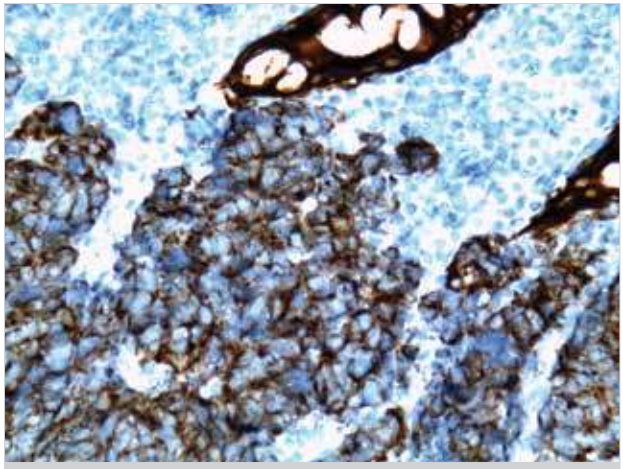

Figure 3. Positive staining with pan-cytokeratin antibody in tumor islands, x400

pleomorphic tumor cells with hyperchromatic nucleus forming solid layers and tumor islands staining positive with pan-cytokeratin antibody (Figure 1-5).

DISCUSSION

Acute appendicitis is common in adult patients and requires immediate surgical intervention, especially in geriatric patients. The primary diagnosis of acute appendicitis depends on clinical findings, and in some patients, imaging techniques should be selectively used. Early surgical intervention is essential to overcome complications. Atypical clinical outcomes, such as developmental abnormalities or masses, may be of clinical importance. However, in some patients, preoperative imaging may not be available or may have limited value. Appendicular malignancies have been rarely reported and may be primary or secondary. The incidence of primary appendiceal adenocarcinoma has been reported to be extremely rare, which indicates that a standard clinical evaluation is essential not to misdiagnose this clinical entity (5). In our experience, a geriatric patient from a nursing home was presented with acute abdomen. However, the medical history was unclear, and the preoperative evaluation was rapid for suspicious perforation. Poor postoperative mortality limited further clinical evaluation of the gastrointestinal tract.

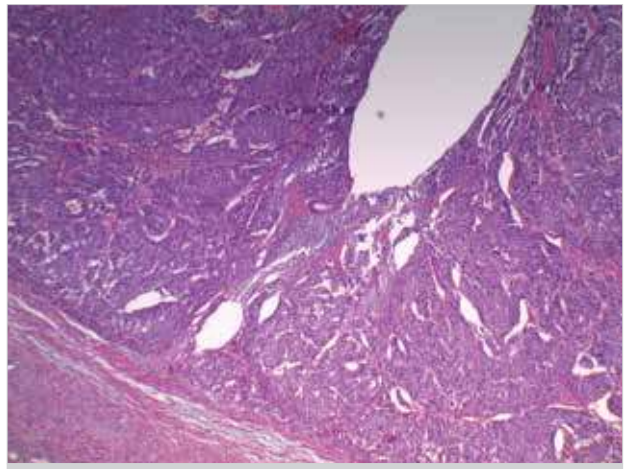

Figure 4. Serosal tumor infiltration, H/E, x400

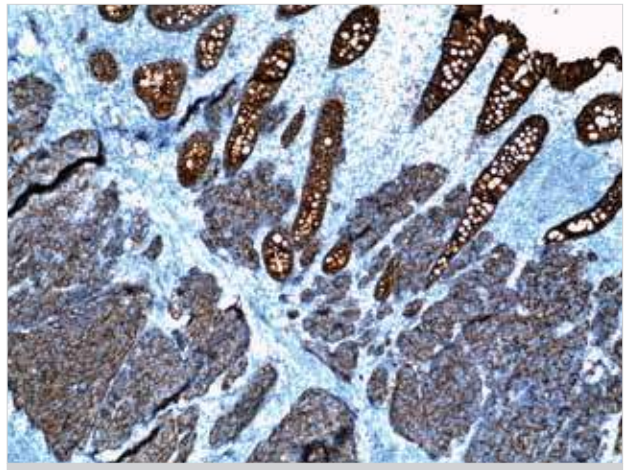

Figure 5. Diffuse and moderate positive staining with pan-cytokeratin antibody in tumor islands, x100

Currently, there is no specific symptom for primary appendicular adenocarcinoma, which makes perioperative diagnosis controversial and challenging. The common clinical presentation may be with acute or recurrent symptoms of acute appendicitis. In some patients, peritonitis due to perforation may dominate clinical symptoms (6). Some patients may have some chance for early or preoperative diagnosis of

an appendicular mass (7). Preoperative diagnosis of primary appendicular adenocarcinoma is important for optimal surgical and medical management planning. Imaging techniques, such as ultrasound and intravenous (and rectal) contrast-enhanced computed tomography, may have some value (8). However, routine use of these imaging techniques for patients with classical symptoms for acute appendicitis is controversial. In addition, the low incidence of primary appendicular adenocarcinoma makes it hard to evaluate the value of routine preoperative use of imaging techniques. However, the important role of routine histopathological examination of appendectomy materials should not be discussed (9). Forgotten histopathological examination of these materials may result in delay of diagnosis of primary appendicular adenocarcinoma and poor medicolegal outcomes for the surgeon. In our case, preoperative computed tomography had no diagnostic value, and thus, the patient was scheduled for emergent laparotomy. The histopathology and clinical outcomes of appendicular adenocarcinoma have been studied previously, and perforation is known to be common in appendicular adenocarcinoma patients. However, peritoneal implantation due to perforation is discussable (10). Surgical treatment for appendicular adenocarcinoma has controversies. However, any neoplasm greater than 2 centimeters is advised to be treated with right hemicolectomy (2). In our case, the perioperative diagnosis was not possible, and the patient was treated with appendectomy and drainage. The diagnosis of the appendicular malignancy was only available after histopathological evaluation of the patient, which was not available before this patient died.

CONCLUSION

Primary appendicular adenocarcinoma is a rare clinical entity, which should not be overlooked in adult patients. Preoperative or intraoperative diagnosis may not be available for some patients. Thus, routine histopathological examination is essential for adequate diagnosis and treatment.

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