Can Acute Appendicitis be the First Sign of an Inoperable Gastric Cancer Metastasis? A Case Report

Akut Appandisit, İnoperabl Mide Kanseri Metastaz›n›n İlk Bulgusu Olabilir mi? Olgu Sunumu

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ÖZET

ABSTRACT
Primary non-carcinoid adenocarcinoma of the appendix is rare. Likewise, distant metastasis of another organ or system cancer is even more rare. Generally, gastric adenocarcinoma may clinically be detected while it is spreaded. A 31-year-old man who had no specific medical history was admitted to the clinic with complaint of right lower abdominal quadrant pain and rebound tenderness over McBurney’s point. Laparotomy was performed for a diagnosis of acute appendicitis. Histopathological examination revealed an obstruction of the appendicular lumen due to adenocarcinoma metastasis. Correspondingly, the patient was re-evaluated to detect the primary malignancy focus and underwent inoperable gastric adenocarcinoma diagnosis. As our knowledge, there is only one other example in the literature; a patient with undiagnosed gastric cancer who had an acute appendicitis as the first clinical
Introduction
Acute appendicitis is the most common cause of the acute abdomen, and in almost every case, the primary reason is the obstruction of appendiceal lumen.\(^1\)\(^-\)\(^3\) Usually the obstructions occur because of the coprolites in adults and lymphoid hyperplasia in childhood.\(^2\) Acute appendicitis due to primary non-carcinoid appendiceal malignancies is seldom.\(^2\) Besides, metastasis of a distant organ cancer into the appendix vermiformis presented with acute appendicitis clinic may be defined as an extraordinary entity.

Case Presentation
A 31-year-old man was admitted to the emergency room with sudden onset of acute right lower abdominal quadrant pain. He had no significant medical history. Physical examination revealed rebound tenderness over McBurney’s point. Axillary body temperature was 37.7°C. The pulse was 88 beats/min and blood pressure 110/75 mmHg. Complete blood count showed mild leucocytosis with neutrophil dominance (WBC. 14700/mm\(^3\)). Ultrasound (US) scan disclosed an incompressible and swollen appendix with 11-mm-diameter. Consequently urgent laparotomy with McBurney’s incision was done for a diagnosis of acute appendicitis. The patient was discharged two days after the operation. Histopathological examination showed obstruction of the appendicular lumen due to infiltration of six-mm-diameter adenocarcinoma metastasis invading muscularis propria (figure 1a and 1b). According to this finding, the patient was re-hospitalized and evaluated to detect the primary focus of malignancy. Gastroscopy and colonoscopy was performed and the patient underwent intramucosal gastric adenocarcinoma diagnosis (figures 2 and 3). Subsequent to determination of a hypermetabolic lesion with malignant aspect on the ileocecal region on the fluorodeoxyglucose positron emission tomography (FDG-PET) scanning, laparoscopic exploration was performed.

Multiple biopsies were taken from the suspect areas of diaphragm and peritoneum (figure 4). Also peritoneal lavage with %0.9 NaCl was performed for cytopathological examination. Frozen histopathological examination’s data of laparoscopic biopsies was concordant with infiltration of adenocarcinoma. The cancer was considered inoperable and the patient discharged on the second postoperatively day after the laparoscopy. He is still having chemotherapy treatment with FUFA protocol (fluorouracil 425 mg/m2 and folinic acid 20 mg/m2 for 5 days, every 4 week for 6 cycles).

**Figure 2.** Gastroscopic view of exulcerated mucosal area localized on the incisura.

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Discussion

The ratio of primary non-carcinoid appendiceal cancers in all gastrointestinal tract malignancies is less than 0.5%.3 In general, clinical presentation of these patients is acute appendicitis due to tumoral obstruction of the lumen.2,3 The majority of all cases are misdiagnosed preoperatively, even intraoperatively. Usually, the lesions are identified after the histopathological examinations.3 In the circumstances, it is difficult to diagnose a distant metastasis into the appendix presented with only acute appendicitis symptoms and no other significant medical history or physical examination findings.

Any types of malignancy may spread to the appendix vermiformis. Appendiceal metastasis of colorectal, prostate and even lung cancers were reported.4-6 Regarding to the literature, the gastric adenocarcinomas are the most common neoplasm types which tend to spread to the appendix.7-9 Gastric carcinoma metastasis to the appendix was first described by Goldfarb and Zuckner in 1951.10 The metastasis process begins as serosal implants. Therefore malignant cells infiltrate progressively all layers of the appendix wall. Tumoral mass and the environmental inflammation occlude the lumen and cause the stasis of appendiceal secretions which lead to the catarrhal infections and result in acute appendicitis. Once in a while, the direct obstruction of the metastatic cells without serosal infiltration may also occur and speeds up the process, thus appendix can be perforated and generalized peritonitis symptoms appear.

There is only one reported case of appendiceal metastasis of an undiagnosed gastric cancer, detected incidentally on colonoscopy which is not presented as acute appendicitis.9 In our case, the initial sign of a gastrointestinal adenocarcinoma is the acute appendicitis and as our knowledge, this is the second similar case in the literature. Møller et al.8 reported an undiagnosed gastric tumor case primarily presented with symptoms of acute appendicitis. However, other cases of distant adenocarcinoma metastasis to the appendix vermiformis, mentioned about metastasis after the diagnosis of primary cancer.

The prognosis of the acute appendicitis due to distant cancer metastasis is poor. However, in patient with solitary appendiceal metastasis - especially in case of metastasis from rectum or colon - a right radical hemicolectomy can be added if primary tumor is also radically resectable and in such case, the patient should not be considered as inoperable. In our case, diagnosis of peritoneal carcinomatosis took away the opportunity of radical surgery.

Though the majority of acute appendicitis caused by benign obstruction, malignancy - and even more distant metastasis - also should be kept in mind.
Kaynaklar