Metastatic Breast Carcinoma Presenting as Perforated Appendicitis

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Key Words

Breast cancer, metastasized · Appendicitis

Summary

Background: Patients presenting with symptoms from unknown metastatic breast carcinoma are becoming increasingly uncommon. Perforated appendicitis from metastatic breast carcinoma is a rare entity with only a few published reports in the literature. **Case Report:** The case of a 76-year-old female patient who developed perforated appendicitis from previously unknown metastatic breast cancer is presented. During physical examination in the emergency department, a large left breast mass was palpated. The patient underwent an appendectomy and had no gross evidence of disease elsewhere in the intra-peritoneal cavity. Subsequent pathologic examination of the appendix revealed a lobular carcinoma. **Conclusions:** The factors that influence the site of metastasis from breast cancer include estrogen receptor status and the subtype of carcinoma – ductal versus lobular.

Schlüsselwörter

Mammakarzinom, metastasiertes · Appendizitis

Zusammenfassung

Hintergrund: Patienten mit Symptomen verursacht durch ein nicht diagnostiziertes metastasiertes Mammakarzinom werden immer seltener vorstellig. Perforierte Appendizitis als Folge eines metastasierten Mammakarzinoms ist eine seltene Entität mit nur wenigen publizierten Fallberichten in der Literatur. **Fallbericht:** Wir stellen den Fall einer 76-jährigen Patientin mit einer perforierten Appendizitis als Folge eines bisher nicht diagnostizierten metastasierten Mammakarzinoms vor. Während der ärztlichen Untersuchung in der Notaufnahme wurde ein großer Tumor in der linken Brust palpiert. Eine Appendektomie wurde durchgeführt, bei welcher keine augenscheinlichen Anzeichen eines Befalls der Bauchhöhle bestanden. Die anschließende pathologische Untersuchung der Appendix ergab jedoch ein lobuläres Karzinom. **Schlussfolgerungen:** Zu den Faktoren, die die Lokalisation von Mammakarzinommetastasen beeinflussen, gehören Östrogenrezeptorstatus und der Karzinomsubtyp – duktal versus lobulär.

Introduction

With today's sophisticated diagnostic techniques, patients presenting with symptoms from unknown metastatic breast carcinoma are becoming increasingly rare. The following is a case of a 76-year-old female who presented to the emergency department with perforated appendicitis secondary to metastatic breast carcinoma.

Case Report

A 76-year-old Caucasian female presented to the emergency department with a 6-day history of nausea, vomiting, and abdominal pain. The patient had a temperature of 36.1 °C and was in mild distress from the abdominal pain. Physical examination revealed a distended abdomen with diffuse tenderness, greatest in the right-lower quadrant. Rectal exam was negative. The remainder of the examination was unremarkable except for a large mass that was palpated in the left breast adherent to the chest wall. No axillary lymphadenopathy was evident. Laboratory tests revealed a white blood cell (WBC) count of 8.1 k/ul with normal differential cell

count. Computed tomography (CT) scan showed evidence of a perforated appendix and dilated small bowel loops.

The patient was taken to the operating room where a perforated appendix was found with a surrounding phlegmon. The tip of the appendix was perforated, and there appeared to be no cecal involvement. Several loops of small bowel were adhered to the phlegmon. There was no gross evidence of disease elsewhere in the abdominal cavity. An appendectomy was performed, and the abdominal cavity was irrigated. The patient tolerated the procedure well and overall had an uneventful post-operative course.

Pathology revealed a perforated appendix with periappendicitis. Several sections of the specimen showed metastatic carcinoma in the serosal tissue and some foci showing extrinsic invasion into the muscularis propria and submucosa of the appendix. A panel of immunohistochemical stains was positive for estrogen receptor and GCDFFP-15. The immunohistochemical stains and morphology suggested metastatic breast carcinoma of the lobular type. Further testing showed the tumor to be estrogen receptor-positive, progesterone receptor-negative, and HER2/neu-negative.

Discussion

The presentation of perforated appendicitis from previously unknown metastatic breast carcinoma is a rare entity with only a few published reports in the literature. The most common site of metastatic breast cancer is bone, with the spine, ribs, pelvis, skull, femur, and humerus most often involved [1]. Metastatic adenocarcinoma to the appendix is an uncommon finding and it often can cause appendicitis that presents late

with a high incidence of perforation [2]. Because of this high incidence of perforation, the option of prophylactic appendectomy should be discussed with patients with carcinoma of the breast at the time of oophorectomy or other abdominal surgery [3]. Making a diagnosis of appendicitis in patients receiving chemotherapy is often difficult because the side effects associated with chemotherapy – nausea, vomiting, and abdominal pain – mimic the signs and symptoms of an acute abdomen [4]. Breast cancer metastasizing to the appendix is a rare occurrence, but the metastatic patterns of breast cancer have been studied. Factors that influence the site of metastasis from breast cancer include estrogen receptor status and the subtype of carcinoma – ductal versus lobular. Estrogen receptor-positive breast cancer is likely to spread to bone, unlike estrogen receptor-negative breast cancer that is more likely to spread to viscera [1, 5]. The metastatic patterns of lobular versus ductal carcinoma have also been studied. Gastrointestinal, gynecologic, and peritoneum-retroperitoneum metastases are more prevalent in lobular carcinoma [6]. Ductal carcinoma is more likely to have hepatic, lung, and brain metastases [7].

Conflict of Interest

The authors have no conflicts of interest or competing financial interests with regards to this manuscript.

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