

# Gut metastasis from breast carcinoma

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## ABSTRACT

Breast cancer is the second most common malignancy in women. Common sites of metastases include the liver, lung, bone, and the brain. Metastases to the gastrointestinal tract are rare with patients presenting with small-bowel perforation, intestinal obstruction, and gastrointestinal bleeding. Here we report a case of a Saudi female presenting with invasive lobular carcinoma and ileo-cecal junction metastasis.

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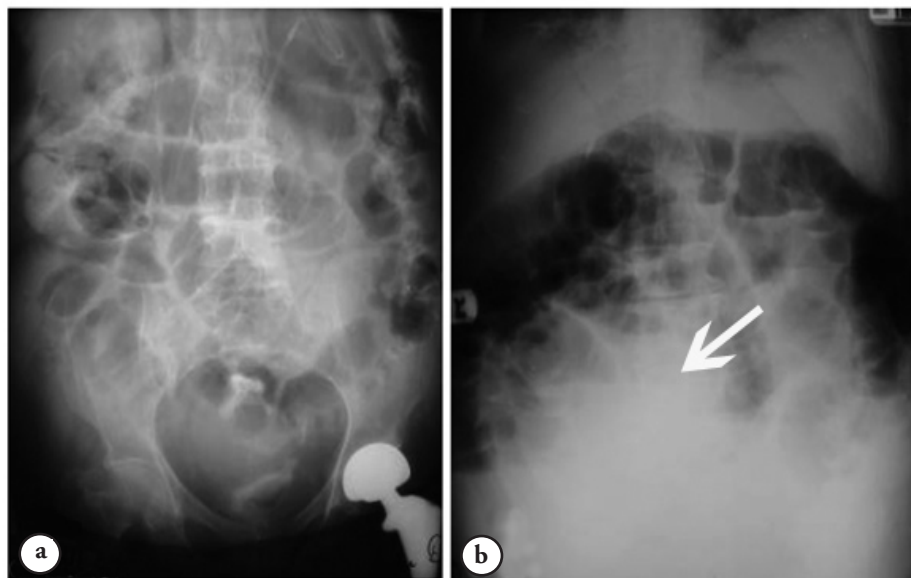
Breast cancer is a common malignancy in women, and frequently metastasizes to various organs such as the liver, lung, brain, bone, and others, however metastasis to the gastrointestinal tract is rare and could mimic gastrointestinal disorders.<sup>1-4</sup> Diagnosis is frequently made postmortem, but may present ante-mortem as small bowel perforation, gastrointestinal hemorrhage, or intestinal obstruction.<sup>1,2,5,6</sup> Lobular carcinoma comprises one-fifth of cases of ductal carcinoma.<sup>1</sup> Intestinal metastasis is dominant in cases of lobular carcinoma, but without a prior diagnosis of lobular carcinoma of the breast, the diagnosis of intestinal metastasis from breast cancer is difficult.<sup>1</sup> Gastrointestinal tract metastases from primary breast carcinoma are present in 14 - 35% of cases in autopsy series, with the stomach being involved in 6 - 18% of cases.<sup>1</sup> The aim of reporting this case is to create awareness of the possibility of gut metastasis in breast cancer patients, and to underline its rarity and difficulty in pre-mortem diagnosis.

**Case Report.** A 75-year-old Saudi female, with diabetes mellitus, and had been on oral hypoglycemic agents for 15 years, was admitted to the Aseer Central Hospital (ACH), Abha, Kingdom of Saudi Arabia (KSA) with a one-year history of a painless right breast mass. There was no nipple discharge. No history of other swellings in the body or any other complaints. There was no family history of breast cancer, and she had never been on oral contraceptives. Past medical history before this presentation includes cataract extraction in the right eye 8 years ago, a left hip joint replacement in Riyadh, KSA, 4 years ago, and a laparoscopic cholecystectomy 5 years ago. On physical examination, she looked healthy and was not pale or jaundiced. The chest, abdomen, cardiovascular, and nervous systems were within normal limits. There was a hard, painless mass in the upper outer quadrant of the right breast. There was nipple retraction but no nipple discharge, no other masses, and no palpable lymph nodes in the right axilla. The left breast was normal. A mammogram showed no focal mass in the left breast and a retracted right nipple. There was an irregular, speculated, dense mass in the lateral upper quadrant of the right breast measuring 4 x 3 cm, with extensive fibrotic changes. There were benign calcifications scattered all over the breast. There were bilateral axillary lymph nodes detected. The breast parenchyma had vascular calcifications bilaterally. Ultrasound scan of both breasts showed an irregular, ill-defined, hypodense mass with loss of normal parenchyma in the right breast. A provisional radiological diagnosis of right breast cancer with axillary lymphadenopathy was made. Fine needle aspiration of the right breast was highly suspicious of malignancy, most probably of infiltrating ductal carcinoma. She was taken to the operating room, and a biopsy and frozen section of the right breast mass confirmed the diagnosis of breast cancer. She underwent a modified radical right mastectomy with right axillary clearance. The pathological diagnosis revealed invasive lobular carcinoma of the right breast. The mass was 6 cm at its maximum diameter. There were 7 lymph nodes out of 13, that showed metastatic deposits. The

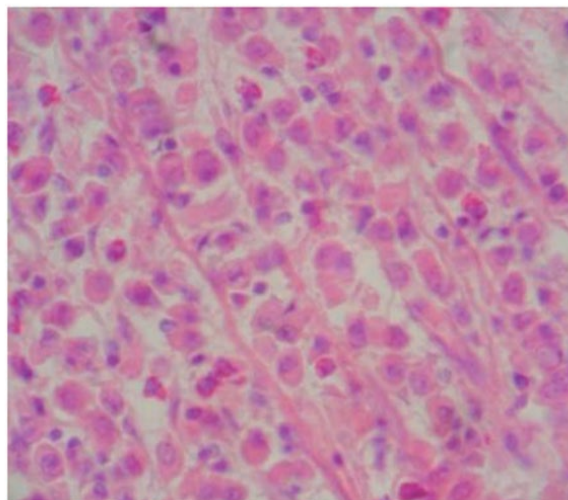
axillary fat tissue showed tumor deposits. The surgical margins were free. Results of the hormone receptors were positive for both estrogen and progesterone receptors, and negative on *c-erbB-2*. Upon her full recovery from the operation, she was referred to King Faisal Specialist Hospital, Riyadh, KSA for further management.

Nine weeks after her mastectomy, she again presented to the Emergency Room of ACH with a 3-day history of generalized, colicky abdominal pain associated with vomiting and constipation. She had no other complaints. Physical examination showed normal vital signs. The abdomen was slightly distended. There was no tenderness

or rigidity. On auscultation, the bowel sounds were hyper-resonant. Rectal examination showed an empty rectum. Abdominal x-rays showed dilated loops of small bowel (supine position) and multiple air fluid levels (erect position) (**Figures 1a & 1b**). She was admitted as a case of intestinal obstruction (adhesive type). Oral feeds were withheld, and she received intravenous fluid infusions for 6 days. Ultrasound scan of the abdomen revealed dilated fluid-filled bowel loops. Gastrografin meal and follow-through showed dilated, gas distended small bowel loops suggesting intestinal obstruction. Six days after her readmission, she was taken to the



**Figure 1** - Abdominal x-ray showing a) dilated loops (supine position), and b) multiple air fluid levels of the small bowel (erect position).



**Figure 2** - Histopathological examination of the ileo-cecal mass showing invasive lobular carcinoma originating from the breast.

operating room for exploratory laparotomy. Operative findings showed a hard mass at the ileo-cecal junction with dilated proximal small bowel loops. There were no liver or peritoneal metastases. A right hemicolectomy was performed. Histopathological examination of the operative specimen showed metastatic invasive lobular carcinoma in the ileo-cecal region (originating from the breast) (Figure 2). Carcino-embryonic antigen (CEA) was 1.7 ng/ml (normal=0.0 - 3.4 ng/ml). The patient had an uneventful postoperative period and was discharged home on the 16th post-operative day in good condition.

**Discussion.** In this case, gastrointestinal pathology did not manifest at the time the patient first presented with breast cancer. Our patient presented with features of acute intestinal obstruction 9 weeks after undergoing a modified radical right mastectomy for invasive lobular carcinoma. In the case reported by Santini et al,<sup>7</sup> the patient presented with signs of intestinal obstruction requiring an ileocolic bypass after 11 months. Our patient was admitted with acute intestinal obstruction, 9 weeks after modified radical mastectomy. In the cases reported by Jo et al,<sup>4</sup> and Aurello et al,<sup>8</sup> the interval between mastectomy and gastrointestinal symptoms were 6 and 14 years. On the other hand, the gastrointestinal metastasis may manifest earlier than the primary breast cancer. Kobayashi et al<sup>1</sup> reported the case of a 52-year-old woman who underwent duodenogastrectomy for duodenal cancer, and had mastectomy for lobular carcinoma of the breast 18 months after.<sup>3</sup>

In view of the rarity of gastrointestinal metastases in breast cancer, the diagnosis may not be readily evident or suspected early. They are usually due to lobular breast carcinoma, and resemble primary gastric carcinoma on microscopy<sup>1</sup> as the case in the patient presented. Our patient was initially managed conservatively for 6 days as a case of adhesive intestinal obstruction, and was submitted to a laparotomy when there was no improvement in her clinical condition. The diagnosis of gastrointestinal metastases from breast cancer is aided by the estimation of CEA, which rules out a gastrointestinal origin of the tumor. In the case presented, the CEA level was within normal range. Santini et al,<sup>7</sup> reported a progressive increase of carbohydrate antigen (CA) 19.9, which is a marker of primary colorectal carcinoma as the first clinical sign of ileocecal valve metastasis from breast cancer. Although our patient had metastases to the ileo-cecal region, CA 19.9 was not estimated due to lack of facilities. Immunohistochemical assays for estrogen

receptor can also be used to confirm breast cancer metastasis.<sup>3</sup> The ages of the patients with gastrointestinal metastases from breast carcinoma range from the late 50s to the early 70s.<sup>1-8</sup> The age of our patient, which is 75 years, is within this age group. It is evident from the literature, that women who present with gastrointestinal metastasis from breast cancer are older than the ages of women at the initial presentation of the primary breast cancer.<sup>1-8</sup> This is explained by the fact that there is a variable interval between the occurrence of the primary breast cancer and the manifestation of gastrointestinal metastases. The fact that gastrointestinal metastasis from breast cancer may mimic any gastrointestinal disease, may also introduce a confounding variable and delay the correct diagnosis.

In conclusion, we have presented the case of a 75-year old female who had modified radical mastectomy for invasive lobular carcinoma of the right breast. She presented with acute intestinal obstruction due to metastasis to the ileo-cecal region 9 weeks later. Right hemicolectomy was curative. An increased awareness could lead to earlier diagnosis of gastrointestinal metastasis from breast cancer in elderly females.

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