

## Obstructive Ileum Metastasis of the Invasive Lobular Carcinoma of Breast: Case Report

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**Abstract:** Gastrointestinal metastases from breast cancer are rare. Here we report a rare case of bowel obstruction caused by ileum metastases from breast cancer and describe its relevance to histological origin and clinical practice. The clinical course and histopathology of the case are reviewed and compared with reports of similar cases in the literature. A 67 year-old female patient with signs and symptoms of intermittent bowel obstruction for the last 20 days was admitted to the General Surgery Clinic of Istanbul Training and Research Hospital. Her medical history included infiltrating lobular breast cancer treated with left radical mastectomy 4 years before the current presentation. She came to our emergency department because of symptoms of bowel obstruction. Exploratory laparotomy revealed an ileal obstruction. 1 meter distally from Treitz ligament, the jejunum and ileum segments were adherent to abdomen wall, proximal jejunum segment was highly dilated. This adhesion was caused by about a tumor of 3cm in diameter located at the distal part of ileum. After the resection of the tumor and adherents, ileostomy and jejunostomy was performed. Histological examination revealed metastases from invasive lobular carcinoma. She was discharged uneventful at the 9th postoperative day after the operation. The preoperative diagnosis of the cause of small bowel obstruction is difficult in adults. Invasive lobular breast cancer significantly metastasizes more often than invasive ductal cancer to the gastrointestinal tract. Physicians should be aware of these unusual gastrointestinal metastatic patterns of breast cancer in order to permit early diagnosis of gastrointestinal metastases and improve treatment planning.

**Keywords:** breast cancer, invasive lobular carcinoma, metastases, gastrointestinal tract, bowel obstruction.

### INTRODUCTION

Breast cancer is one of leading types of cancer seen in women with a rate of 32%. Furthermore, it is one of leading causes of death by cancer in women. The lifelong risk of breast cancer is 1/ 10 [1, 2]. The prognosis in breast cancer depends on the size of tumor, histological subtype, hormonal receptor status and axillary lymph node invasion. It is the second most common cause of metastasis to gastrointestinal canal after malignant melanoma and the rate of incidence in autopsy studies varies between 6-35 % [3, 4]. Conversely to the probability of distant metastasis development in 50 % of breast cancer patients during lifetime, it was found that the rate of subclinic metastasis was higher in the autopsy series. Metastases occur in lymph nodes, lung, bone, brain and liver in general. Interestingly, compared to ductal carcinoma and the other subtypes, it was shown that the predisposition of metastasis to gastrointestinal canal is higher for the lobular carcinoma of breast subtype [5]. In this study, an original case report of a bowel obstruction caused by an unusual ileum metastasis of lobular carcinoma of breast cancer was presented.

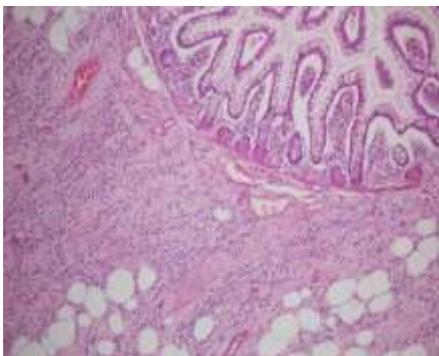
### CASE REPORT

A 67 year-old female patient with signs and symptoms of intermittent bowel obstruction for the last 20 days was admitted to the General Surgery Clinic of Istanbul Training and Research Hospital. The patient had previously undergone cholecystectomy and sigmoid colon resection with end to end anastomosis because of sigmoid colon adenocarcinoma 6 years earlier. Two years after this operation she had undergone a modified radical mastectomy due to lobular carcinoma for right breast. After oncological therapy, PET- CT that was performed 2 years after the breast operation, pathological uptake for metastasis in 6th cervical vertebra level was found out.

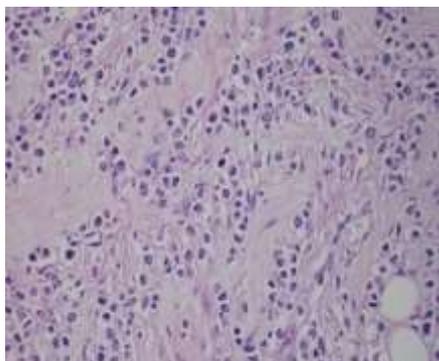
Preoperative investigation by abdominal computed tomography scanning revealed an obstruction at the small bowels. Expansive distension of abdomen, increased intestinal sounds, mild sensitivity in palpation, but no rebound was found in physical examination of the patient. No abnormality was found in routine laboratory findings. Rectal examination was normal. The patient hospitalized and nasogastric tube was applied. Her fluid intake and extract measured and electrolyte balance followed up. Clinically getting worse, an urgent operation for mechanical intestinal obstruction was required.

Exploratory laparotomy revealed an ileal obstruction 1 meter distally from Treitz ligament, the jejunum and ileum segments were adherent to abdomen wall, proximal jejunum segment was highly dilated. This adhesion was caused by about a tumor of 3 cm in diameter located at the distal part of ileum. After the resection of the tumor and adherents, ileostomy and jejunostomy was performed. Postoperatively, the patient stayed at intensive care unit for one day. She was discharged uneventful at the 9th postoperative day after the operation.

By macroscopic pathological evaluation of the resected jejunum and ileum segments, in ileum, a white coloured lesion that was approximately 3 cm in size, and partially obstructing the bowel, was detected. Microscopic analysis of the specimen showed that the 3 cm lesion was carcinoma metastasis (figure 1, 2), 11 lymph nodes were metastatic, and anjiolymphatic and perineural invasions was found. By detailed immune histochemical staining; CK7 was positive, CK 20 was negative, estrogen and progesteron receptors were negative, and c- erb b2 over expression was detected. The results of the pathological assessments showed that the mass in ileum was pleomorphic variant metastasis of lobular breast carcinoma, and it was the same pathological characteristic result as seen in the specimen of the operation for right breast cancer previously.



**Fig. 1: Carcinoma cells that are wide spread throughout the small intestinal submucosa and locally 'indian- file' formation lined-up (HEX100)**



**Fig. 2: Pleomorphic type invasive lobular carcinoma infiltration in large magnification(HEX400)**

## DISCUSSION

Solitary metastasis from breast carcinoma to the gastrointestinal tract is an uncommon finding. We describe a female patient with a solitary ileal metastasis from a lobular breast cancer who presented to the emergency department with a bowel obstruction.

Breast carcinoma is the most frequent cancer in women and a significant cause of morbidity and mortality. Some 30-80% of patients will develop metastatic disease following therapy.

Gastrointesrinal (GI) metastatic tumors are a rare entity. GI manifestations of metastatic breast cancer may occur many years after the primary breast cancer diagnosis, usually between 5 and 20years [6-9]. In our case metastasis in ileum occurred 4 years after the primary breast cancer.

As suggested in a study invasive lobular carcinoma ( ILC), although less common than invasive ductal carcinoma ( IDC), is more likely to metastasize to the GI tract: 4.5% in ILC *versus* 0.2% in IDC(7). GI metastases are usually associated with extensive spread. Loss of expression of the cell-cell adhesion molecule E-cadherin in ILC may contribute to the differences in metastatic patterns when compared to IDC [8].

The localization of GI metastases from breast cancer varies. Metastatic involvement of the stomach is the most frequent (up to 15%), as shown by autopsy series [8, 9]. Breast cancer is one of the major causes of gastric metastases. Metastatic involvement of the small bowel is recognized at autopsy, but clinical presentation is uncommon. The terminal ileum is more often involved than the rest of the small bowel [9, 10]. Rare metastases to duodenum and appendix have also been reported [11- 13]. In our case metastasis was in proximal ileum.

Diagnosis is challenging because of the clinical symptoms including those of primary GI tumors, Crohn's disease and several other benign tumor processes. It is occasionally difficult to distinguish metastatic small intestine tumors from primary tumors [14].The main causes of death among patients with known GI metastases are GI obstruction, perforation, septic shock and total renal failure. We could diagnose the metastases because of its GI obstruction.

The typical features of the tumor are determined by macroscopic and immunohistochemical analysis [15]. CK7, CEA, ER, PR is usually detected positive in metastatic breast cancers. CK7, CEA and GCDFP- 15 being positive is nonspecific. CK20 is always seen in gastrointestinal tumors while not in breast carcinomas [16]. In our case by detailed immunohistochemical staining; CK7 was positive, CK 20 was negative, estrogen and progesteron receptors

were negative, and c-erb b2 over expression was detected. Many authors also emphasized the difference of hormonal receptors between primary and metastatic tumor [17]. The treatment of breast cancers with metastases to gastrointestinal system is systemic hormonal therapy and chemotherapy [18]. Surgical treatment is performed usually in cases of symptomatic obstruction, perforation stenosis, patients that have total obstruction symptoms and for palliative purpose [19]. In our case, surgical treatment was performed because of GI obstruction. The mean survival rate in gastrointestinal metastatic breast cancer is approximately 1 year [20].

## CONCLUSION

The preoperative diagnosis of the cause of small bowel obstruction is difficult in adults. Invasive lobular breast cancer significantly metastasizes more often than invasive ductal cancer to the gastrointestinal tract. Physicians should be aware of these unusual gastrointestinal metastatic patterns of breast cancer in order to permit early diagnosis of gastrointestinal metastases and improve treatment planning.

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