Spontaneous Small Bowel Perforation following Adjuvant Chemotherapy for Carcinoma Breast

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Abstract

Small bowel perforation in case of carcinoma breast occurring after chemotherapy is a rare occurrence. A case of a patient with spontaneous small bowel perforation following chemotherapy for infiltrating ductal carcinoma breast is described. The patient presented with perforation peritonitis two weeks after receiving first cycle of adjuvant chemotherapy. Awareness of the possibility of gut perforation in such cases is warranted so as to prevent delay in diagnosis and management.

Keywords: Infiltrating ductal carcinoma; Jejunal perforation; Post-chemotherapy

Introduction

Metastasis from breast cancer to gastrointestinal tract is a rare clinical entity. Small bowel perforation occurring secondary to metastatic breast cancer is even rarer [1]. There are occasional case reports of small bowel perforation occurring following chemotherapy in such cases due to tumor lysis in the gut wall [2]. We present a case of female patient with carcinoma breast who underwent modified radical mastectomy and developed perforation peritonitis 14 days after the first cycle of adjuvant chemotherapy. On laparotomy, there was a single proximal jejunal perforation for which resection and end to end anastomosis was done. The biopsy revealed non-specific inflammation with no evidence of metastatic deposits. Spontaneously occurring small bowel perforation in a patient of carcinoma breast receiving chemotherapy is very unusual. Such perforation may go unrecognized due to lack of awareness leading to peritonitis and high chances of mortality.

Case Report

A 60 year old female presented to the Emergency Department with complaints of acute onset abdominal pain, distension of the abdomen, bilious vomiting and absolute constipation since two days. The patient had undergone modified radical mastectomy for carcinoma right breast (T2N1M0, Stage II B) six weeks ago. On histopathology, infiltrating ductal carcinoma was reported, two lymph nodes out of thirteen were positive for tumor deposits and the tumor was ER positive, PR positive, Her2neu status equivocal and Ki-67 positive. She received first cycle of adjuvant chemotherapy FEC (5-Fluorouracil 600 mg/m², Epirubicin 100 mg/m² and Cyclophosphamide 600 mg/m²) two weeks earlier. The patient did not receive any radiotherapy or steroids. The patient also gave history that she had developed diarrhea four days after the first cycle that lasted for two days. The stool frequency was 6-8 times/day, non-foul smelling, contained mucus and liquid fecal matter, unaccompanied with blood and settled without any medication. The patient was not taking any non-steroidal anti-inflammatory drugs (NSAIDs) and there was no past history of chronic intestinal ailment.

On general examination, the patient looked dehydrated with temperature 39 degree Celsius, pulse rate 110/min and blood pressure 110/70 mmHg. The mastectomy scar was healed with primary intention. The abdomen was distended with rebound tenderness in lower abdomen and sluggish bowel sounds. On rectal examination, there was no ballooning or pelvic tenderness. Laboratory studies demonstrated a white blood cell count of 14400/cmm, polymorphs 92%, hemoglobin 9.0 gm/dl, BUN 26 mg/dl, serum sodium 134 mEq/Liter and serum potassium 3.8 mEq/Liter. The liver enzymes were within normal limits. Perirectal swab was found to be negative for Clostridium difficile infection. Chest skiagram revealed free air under right dome of diaphragm (Figure 1). Ultrasound examination of the abdomen showed dilated bowel loops with minimal inter-gut free fluid.

Emergency laparotomy was performed and a sealed jejunal perforation was found one foot distal to duodeno-jejunal flexure along with 500 ml of free fluid in the peritoneal cavity. The perforation was measuring 1x1 cm in size and was located near the mesenteric border of the jejunum (Figure 2). There were no metastatic deposits seen in the gut wall, omentum or peritoneum. The diseased jejunal segment was excised and end-to-end anastomosis was performed. Post operatively there was no ballooning or pelvic tenderness. Laboratory studies demonstrated a white blood cell count of 14400/cmm, polymorphs 92%, hemoglobin 9.0 gm/dl, BUN 26 mg/dl, serum sodium 134 mEq/Liter and serum potassium 3.8 mEq/Liter. The liver enzymes were within normal limits. Perirectal swab was found to be negative for Clostridium difficile infection. Chest skiagram revealed free air under right dome of diaphragm (Figure 1). Ultrasound examination of the abdomen showed dilated bowel loops with minimal inter-gut free fluid.

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Figure 1: X-ray abdomen showing pneumoperitoneum.
and pelvic organs [3,4]. Such metastasis is usually disseminated to liver, lung, brain and bones. The site of metastasis in breast cancer depends upon estrogen receptor status and histological type of breast cancer.

Discussion

Common sites for metastasis from breast cancer are lymph nodes, liver, lung, brain and bones. The site of metastasis in breast cancer also depends upon estrogen receptor status and histological type of carcinoma. Skeletal metastasis is commonly seen in ER positive cases whereas ER negative cases usually have visceral metastasis. Similarly ductal carcinoma usually metastasizes to liver, lungs and brain whereas lobular carcinoma may spread to gastrointestinal tract, peritoneum and pelvic organs [3,4]. Such metastasis is usually disseminated at presentation. Gastrointestinal metastasis from breast cancer is considered as a rare entity. However autopsies indicate that occurrence of gastrointestinal metastasis is not that uncommon in carcinoma breast, especially in locally advanced disease. In one such series of 707 autopsy cases, metastasis to small intestine was detected in 64 cases (9%) with carcinoma breast [5]. Such cases may present with intestinal obstruction, perforation or hemorrhage.

There have been a few cases reported in literature where metastatic breast cancer has presented with bowel perforation after receiving chemotherapy [2,6,7]. The possible mechanism in such cases is tumor lysis caused by chemotherapy leading to perforation [2]. However there have been reports of jejunal perforation following chemotherapy with or without tumor cell involvement at perforation site [7].

The gut perforation has been reported to occur 2-3 weeks after giving first cycle of chemotherapy [2,6,7]. The similar time interval between giving first cycle of chemotherapy and small gut perforation in our case suggests that it was also related to chemotherapy.

Making diagnosis of gut perforation in cases of carcinoma breast receiving chemotherapy is difficult since chemotoxicity often leads to nausea, vomiting and abdominal pain mimicking features of acute abdomen. Hence a strong suspicion and awareness of the possibility of gut perforation in such cases is warranted so as to prevent delay in diagnosis and management.

References
