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CASE REPORT

Esophageal Metastases from Breast Carcinoma: a Rare Delayed Metastases After 15 Years

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Introduction

Tumor metastasis to the esophagus is a rare occurrence. The incidence of metastasis in esophagus in malignant esophageal disease is approximately 2.7 to 7.4% [1, 2]. Most of the patients present with dysphagia and loss of weight. The clinical and radiological findings are similar to primary esophageal cancer. Histopathologically, it can be differentiated from primary and secondary malignancy. We present a rare case report of esophageal metastasis from breast cancer after a 15-year disease-free interval. We review here the characteristics of diagnostics and therapeutics for metastatic esophageal tumor, particularly from primary breast cancer.

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Case Report

A 59-year-old female patient had a history of left-sided breast cancer treated with lumpectomy with axillary clearance 15 years back in 2001. Postoperative histopathology showed T2N0 disease with Estrogen receptor (ER) negative and Progesterone receptor (PR) negative status. She received adjuvant chemotherapy with FEC (5-FU, epirubicin, and cyclophosphamide) regimen followed by adjuvant whole breast radiotherapy (50 Gy in 25 fractions over 5 weeks) and boost (16 Gy in 8 fractions over 1½ weeks). She was on regular follow-up and was disease free for 15 years.

In March 2016, she presented with hoarseness of voice and dysphagia to solid food for 5 months which was associated with weight loss of 15 kg in 5 months. Barium swallow showed an upper esophageal short segment stricture and endoscopy revealed a tight stricture with ulceration at 20 cm from incisors. Biopsy from thoracic esophageal stricture showed features of adenocarcinoma. On further immunehistochemistry (IHC), the tumor was immunopositive for ER (8/8) and PR (8/8) while negative for Her 2 neu (Fig. 1). Whole body positron emission tomography (PET) scan showed FDG avid circumferential thickening of esophagus starting 2.5 cm above carina for a length of 2.5 cm. The left mediastinal and left internal mammary lymph nodes were present (Fig. 2).

The final diagnosis of esophageal metastasis from the breast cancer was made. In view of metastatic esophageal disease with mediastinal and internal mammary lymph nodes, the patient received six cycles of systemic chemotherapy with single agent docetaxel 85 mg/m^2 at three weekly intervals. After chemo completion, the patient had symptomatic partial response to dysphagia and PET scan showed resolution of uptake of the esophageal lesion with decrease in size and uptake of mediastinal lymph node suggestive of partial response. In view of partial response to

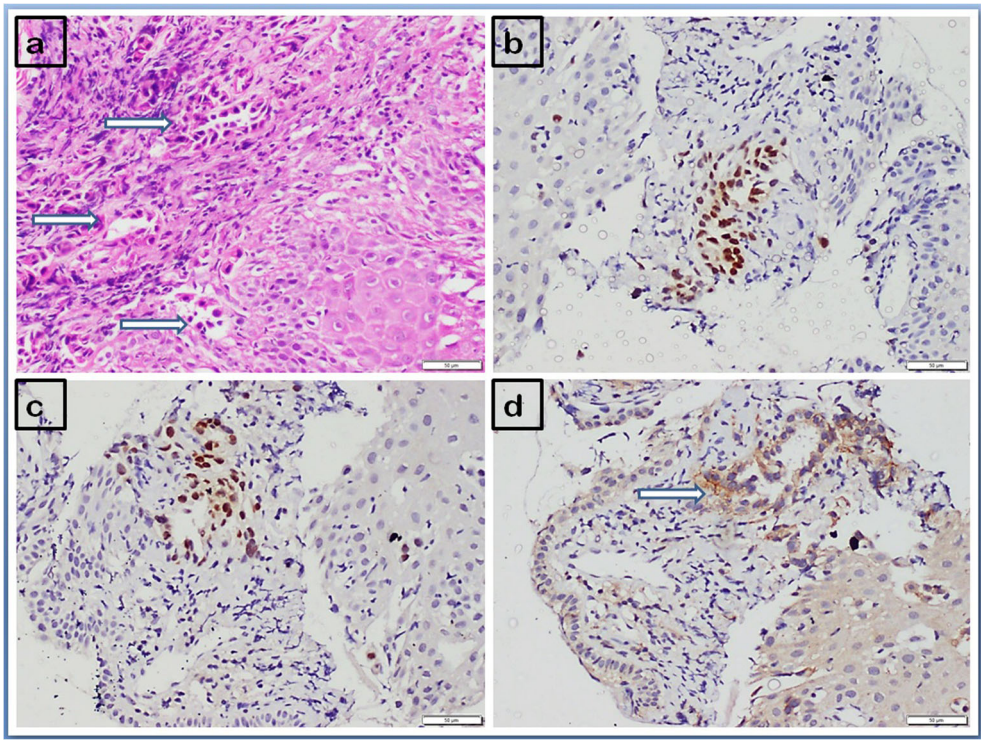

Fig. 1 Microphotograph from the esophageal mucosa showing **a** infiltrative atypical glandular structure favoring an adenocarcinoma (arrows). IHC showing strong immunopositivity for **b** Estrogen receptor, **c** Progesterone receptor while negative for (**d**) HER2/neu (arrow)

chemotherapy and persistent dysphagia, the patient received locoregional radiation to esophagus and mediastinum 30 Gy in ten fractions over 2 weeks. Subsequently, she was started on tablet anastrazole 1 mg once daily as hormonal therapy. PET scan after 6 months of radiation showed complete response (Fig. 3). She is on regular follow-up and is disease free after 1 year of follow-up.

Discussion

Breast cancer is the most common cancer in females. The most common sites of metastatic spread from breast cancer are the bone, liver, brain, and lungs, whereas gastrointestinal metastasis remains rare. Most tumors metastasizing to the gastrointestinal tract are lobular breast carcinomas which have a

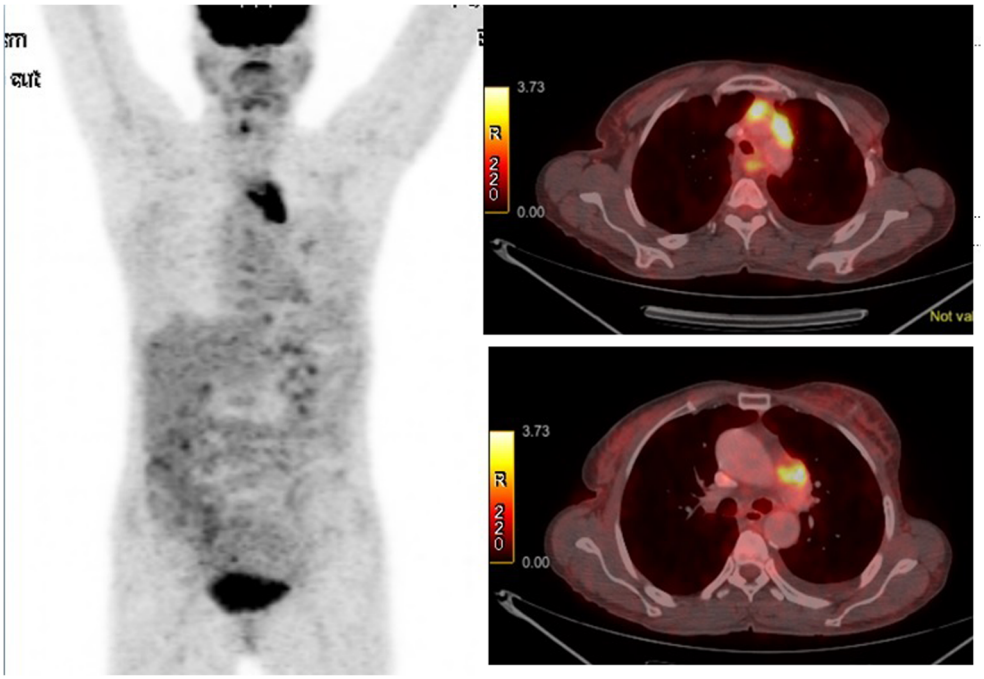

Fig. 2 Pre-therapy FDG PET/CT showing abnormal tracer uptake in the upper thoracic esophagus, left internal mammary nodes, and left mediastinal nodes

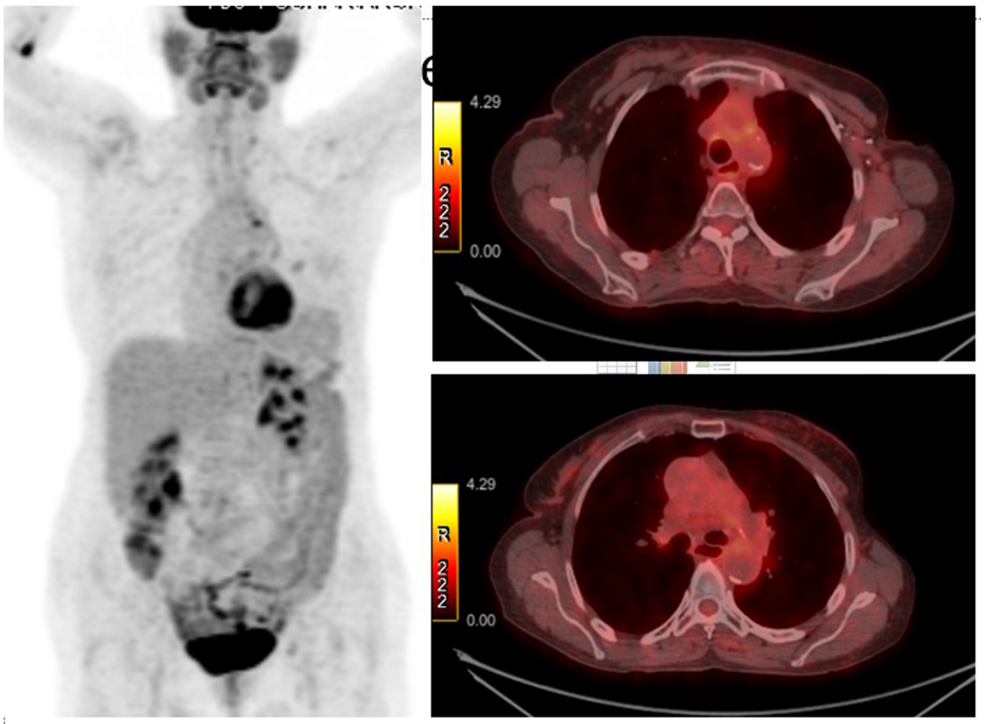

Fig. 3 Post-therapy FDG PET/CT showing complete metabolic response in the upper thoracic esophagus, left internal mammary nodes, and left mediastinal nodes

predilection toward the stomach and colon. In a large pathological series of 4198 patients of malignant esophageal disease, Rampado et al. showed that metastases from non-esophageal primaries comprised 2.7% of cases of which metastases from primary breast cancer was 0.6% only [1]. Mizobuchi et al. in an autopsy series showed that the breast cancer comprised 7.4% of primary cancer in 112 esophageal metastases [2]. McLemore et al. reported only 0.03% prevalence of esophageal metastases secondary to breast cancer in a series of 12,001 patients with metastatic breast cancer [3]. Asch et al. in an autopsy study showed esophageal metastases in 20 of 337 patients (5.9%) who died of breast cancer [4]. Most common cancers metastasizing to the esophagus are lung and breast cancers. Other primary sites can be the kidney, pancreas, ovary, thyroid, bladder, rectum, liver, and endometrium [5]. The mechanism of esophageal spread from breast cancer has been controversial. Involvement of periesophageal lymph nodes secondary to internal mammary lymphatic channels was suggested as a route of spread [6]. We report an unusual case of esophageal metastases secondary to primary breast cancer presenting with dysphagia.

Dysphagia is one of the most common clinical presentations associated with esophageal metastasis from breast cancer. It is followed by weight loss, anorexia, and reflux symptoms in patients similar to primary esophageal tumors. Esophageal metastases after treatment of the primary breast cancer have been reported to range from 8 to 30 years [7]. In our case, esophageal metastases developed 15 years after the treatment of primary breast cancer.

Diagnosis of metastatic esophageal carcinoma is a challenge because of the difficulty of obtaining adequate specimens for pathological diagnosis and difficulty to differentiate it from primary esophageal carcinoma. The disease typically involves the submucosal layer of the esophagus, forming a stricture overlaid with normal mucosa, thus endoscopic evaluation followed by biopsy is required for adequate tissue diagnosis [8]. In our case, the histopathological diagnosis was made after endoscopic biopsy. Further metastatic workup is done as done in breast cancer to look for other sites of metastases. CECT chest, abdomen, and bone scans are done. PET scan can also be done as a single test for metastatic workup.

Treatment of the metastatic esophageal disease is done as per the treatment recommendation for metastatic breast cancer [3]. Systemic chemotherapy and locoregional RT is recommended. The index case received systemic chemotherapy followed by locoregional RT.

There has been a concern of development of esophageal cancer as the second malignancy after radiotherapy and chemotherapy treatment of primary breast cancer. Esophageal cancer as the second malignancy after breast cancer treatment comprises 0.13% of all other second malignancies [9]. Moreover, the second malignancy is always a primary esophageal cancer as opposed to esophageal metastasis from breast cancer as in the index case.

This case is important as it reports a rare case of esophageal metastases from breast cancer as a rare cause of dysphagia. It enforces the importance of long-term follow-up of breast

cancer patients and early evaluation of any distressing symptoms at any site.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

References

1. Rampado S, Ruol A, Guido M, Zaninotto G, Battaglia G, Costantini M, et al. Mediastinal carcinosis involving the esophagus in breast cancer: the "breast-esophagus" syndrome: report on 25 cases and guidelines for diagnosis and treatment. Ann Surg. 2007;246(2):316–22.
2. Mizobuchi S, Tachimori Y, Kato H, Watanabe H, Nakanishi Y, Ochiai A. Metastatic esophageal tumors from distant primary lesions: report of three esophagectomies and study of 1835 autopsy cases. Jpn J Clin Oncol. 1997;27(6):410–4.
3. McLemore EC, Pockaj BA, Reynolds C, Gray RJ, Hernandez JL, Grant CS, et al. Breast cancer: presentation and intervention in women with gastrointestinal metastasis and carcinomatosis. Ann Surg Oncol. 2005;12(11):886–94.
4. Asch MJ, Wiedel PD, Habif DV. Gastrointestinal metastases from carcinoma of the breast: autopsy study and 18 cases requiring operative intervention. Arch Surg. 1968;96(5):840–3.
5. Haney JC, D'amico TA. Transhiatal esophagogastrectomy for an isolated ovarian cancer metastasis to the esophagus. J Thorac Cardiovasc Surg. 2004;127(6):1835–6.
6. Caramella E, Bruneton JN, Roux P, Aubanel D, Lecomte P. Metastases of the digestive tract. Report of 77 cases and review of the literature. Eur J Radiol. 1983;3(4):331–8.
7. Varanasi RV, Saltzman JR, Krims P, Crimaldi A, Colby J. Breast carcinoma metastatic to the esophagus: clinicopathological and management features of four cases, and literature review. Am J Gastroenterol. 1995;90(9):1495–9.
8. Daly JM, Fry WA, Little AG, Winchester DP, McKee RF, Stewart AK, et al. Esophageal cancer: results of an American College of Surgeons patient care evaluation study1. J Am Coll Surg. 2000;190(5):562–72.
9. Zablotska LB, Chak A, Das A, Neugut AI. Increased risk of squamous cell esophageal cancer after adjuvant radiation therapy for primary breast cancer. Am J Epidemiol. 2005;161(4):330–7.

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