A Case of Esophageal Stricture Due to Metastatic Breast Cancer Diagnosed by Endoscopic Mucosal Resection

Fumiko Sunada1, Hironori Yamamoto1, Hiroto Kita1, Kazunobu Hanatsuka1, Hironari Ajibe1, Mamiko Masuda1, Tomosuke Hirasawa1, Hiroyuki Osawa1, Kiichi Sato1, Yasuo Hozumi2 and Kentaro Sugano1

1Department of Gastroenterology and 2Department of Surgery, Jichi Medical School, Kawachi-gun, Tochigi, Japan

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Metastasis of breast cancer to the esophagus has been reported but is rare. It is often difficult to diagnose metastases of breast cancer to the esophagus because they are often located in the submucosa and covered with normal mucosa. Although several methods have been reported in order to obtain specimens for pathological diagnosis, the adverse effects including bleeding and perforation were considerable problems. We report a case of a patient with esophageal stricture due to metastatic breast cancer to the esophagus. Pathological diagnosis was successfully obtained using endoscopic mucosal resection of the esophagus.

Key words: tumor metastasis to esophagus – metastatic breast cancer – endoscopic mucosal resection

INTRODUCTION

Tumor metastasis to the esophagus is a rare occurrence, and breast cancer is its most frequent origin (1–3). Diagnosis of esophageal stricture resulting from metastatic breast cancer is often difficult, and most cases were diagnosed on autopsy and surgery (1,4–10). Only some cases have been reported in which endoscopic biopsy confirmed metastatic breast cancer of the esophagus (1,4–10).

We present here a case of a patient with esophageal stricture due to metastatic breast cancer of the esophagus, in whom pathological diagnosis was successfully established using endoscopic mucosal resection (EMR) of the esophagus.

CASE REPORT

A 68-year-old woman was admitted to our hospital because of increasing symptoms of dysphagia lasting several years. She had had a mastectomy due to breast cancer when she was 45 years old. Upper endoscopy showed a severe stricture in the mid-esophagus where the endoscope could not pass through (Fig. 1). Repeated biopsy from the stricture was negative for malignancy. Chest computed tomography (CT) showed thickening of the wall of the esophagus around the stricture (Fig. 2). Endoscopic ultrasound (EUS) of the stricture revealed thickening of the fourth layer around the esophagus (Fig. 3). Laboratory data revealed a normal level of CEA (3.2 U/ml), and an elevated level of CA15-3 (52 U/ml). After receiving informed consent, the stricture was dilated endoscopically using a balloon dilator. The esophageal mucosa covering the lumen of the stricture after the dilation was smooth and neoplasm was not detected by another repeated biopsy. We could not obtain the diagnosis for the stricture even after the dilation therapy, and the patients was carefully observed because her symptoms had disappeared and also she did not want further study at that time. However, she had dysphagia 6 months later and was again admitted to our hospital. Esophagoscopy on admission demonstrated a similar esophageal stricture at the same location. In order to make a pathological diagnosis, EMR was carried out for the stricture lesion using a cap method after the injection of 20 ml of saline underneath the mucosa (Fig. 4) (11). There were no complications including perforation and bleeding after EMR. The
pathological diagnosis was adenocarcinoma (Fig. 5). Immunostaining of the resected sample was positive for Her-2, ER, PgR, GCDFP and CAM 5.2. Although detailed information on the original breast cancer was not available because the operation had been done >20 years previously, these results strongly indicate that the stricture was due to metastasis from the breast cancer. After the diagnosis, she was treated with hormone therapy. She gained weight after 6 months of treatment, and she had no symptoms during the 8 months of follow-up.

**DISCUSSION**

Since the first reported case of metastatic esophageal carcinoma from the prostate in 1942 (12), a wide variety of metastatic esophageal tumors have been reported from various organs, including breast, larynx, thyroid, hypopharynx and stomach (7,13,14). Breast carcinoma represents one of the most frequent origins of metastasis in the esophagus (1–3). Diagnosis of breast cancer metastasis to the esophagus is difficult, and esophageal involvement can occur without clinical symptoms in a considerable number of patients with breast cancer. Abrahms et al. reported seven patients with esophageal metastases on autopsy among 167 patients who died of breast cancer (15). Asch et al. also performed an autopsy series of 337 patients who died of breast cancer and found 20 patients with esophageal metastases, although dysphagia was present in only two of them (16). Graham et al. suggested a prevalence of up to 6% of metastases in the esophagus for breast cancer, although clinically symptomatic cases would not be as numerous (17). The mechanism of esophageal spread from breast cancer has been controversial. Involvement of periesophageal lymph nodes through intra-mammary lymphatic channels was
suggested to cause esophageal obstruction usually at the level of the carina (18,19).

Dysphagia is one of the most common clinical presentations associated with esophageal metastasis from breast cancer. The mean period between the diagnosis of cancer and the onset of symptoms due to esophageal metastases was reported to be ~8 years, including the previously recorded longest time interval of 22 years (17). In our case, ~20 years had passed to the onset of dysphagia due to esophageal metastases after the first diagnosis of breast cancer was made.

Metastatic esophageal carcinoma is a diagnostic challenge because of the difficulty of obtaining adequate specimens for pathological diagnosis. It is also difficult to differentiate it from primary esophageal carcinoma. In our case, esophagogastroscopy exhibited a stricture with normal mucosa, which was a typical macroscopic feature of the metastatic esophageal carcinoma. Biopsy from the stricture is often negative. Anderson et al. reported 15 cases of secondary esophageal tumor diagnosed from an autopsy and surgical pathology, including seven cases of lung cancer, four cases of breast cancer and single cases of kidney, pancreas and cervical cancers (20). Laforet et al. reported that biopsy was performed endoscopically in seven patients with esophageal strictures due to secondary esophageal tumor and accompanied with three perforations, while diagnostic tissue was recovered in three cases (21). Varanasi et al. reported that of three cases of breast carcinoma metastatic to the esophagus, diagnosis was made by surgery in two cases and by lymph node biopsy in one case (4). Esophageal obstruction was also observed in mediastinal metastasis from breast cancer (10,22).

Several techniques have been introduced for the diagnoses of strictures with possible involvement of either primary or metastatic neoplasms. Wiersema et al. and Giovannini et al. separately described the combination of EUS and EUS-guided fine-needle aspiration as a diagnostic method to treat submucosal tumor (SMT) (23,24). However, the relatively small specimens obtained with this method make it difficult to differentiate benign from malignant tumors. Normal findings also do not exclude the possibility of malignancy, (25,26). The guillotine needle biopsy technique described by Caletti et al. is safe, but up to three consecutive procedures are required for histological confirmation (27). Large forces in conjunction with a tunneling technique can be used to obtain sufficient samples. However, bleeding may be troublesome as a complication of this technique (28,29).

EMR is a widespread technique of cutting mucosal lesions through the submucosa (30). EMR is also applicable to treat SMT in the esophagus and stomach, although indications for endoscopic treatment of SMT have not been established (31,32). Several EMR techniques have been developed for the diagnosis of SMT. Takahashi et al. and Yu et al. separately reported that EMR is a safe method for obtaining tissues for histological diagnosis (18,19). Kawamoto et al. found that endoscopic submucosal tumorectomy was useful, but this technique should be restricted to the lesions limited to the submucosa (33). In this patient, we have applied the EMR technique for the diagnosis of the occupying lesion in the esophagus presumably located in the submucosa. The diagnosis was of clinical importance because metastasis from breast cancer can be treated by chemotherapy, radiotherapy and/or hormone therapy.

References


