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Case Report

A Case of Surgical Resection for Superficial Esophageal Cancer With a Single Giant N4 Cervical Lymph Node Metastasis

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Superficial thoracic esophageal cancer with a solitary metastasis to a lymph node outside the usual target area of lymphadenectomy is extremely rare. We report a case of superficial esophageal cancer with a solitary, giant metastasis to the right upper deep cervical lymph node that was treated with surgery. A 57-year-old man presented to our institution with a chief complaint of a mass in the right neck. Fine needle cytology showed squamous cell carcinoma. No lesion was found in the pharyngolaryngeal area or the lungs. Upper gastrointestinal endoscopy revealed superficial squamous cell carcinoma of the thoracic esophagus. Detailed examinations showed no other lymph node enlargement or metastasis to distant organs. The patient was diagnosed with esophageal cancer with a solitary lymph node metastasis (N4; No.102upR). Subtotal esophagectomy and 3-field lymphadenectomy were performed. The patient received adjuvant chemotherapy. At 3 years postsurgery, no recurrence has been found. We think this case is extremely rare.

Key words: Superficial esophageal cancer – Cervical lymph node metastasis – Solitary lymph node metastasis – Esophagectomy

Since lymph node metastasis of esophageal cancer is frequent, it is an important prognostic factor. Lymph node metastasis is also frequent in superficial esophageal cancer, reported in 18.0% to 41.7% of that invaded into the muscularis mucosae.[1] Thoracic esophageal cancer may be associated with a jumping metastasis defined as a metastasis to the cervical or abdominal lymph node, but not to the mediastinal lymph node.[2] Superficial thoracic esophageal cancer with a solitary metastasis to a

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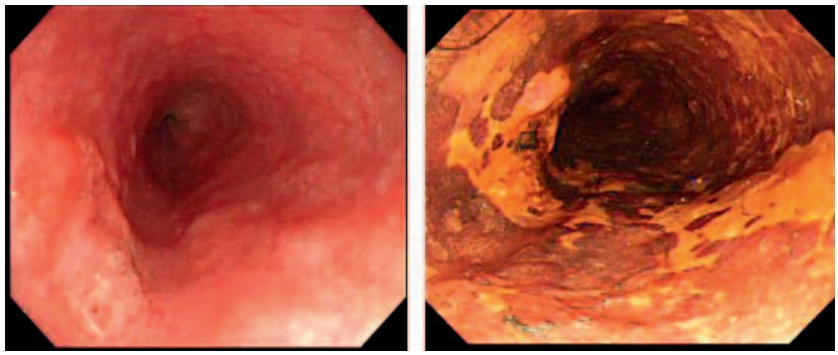

Fig. 1 Upper gastrointestinal endoscopy showed type 0-IIc+IIa esophageal cancer.

lymph node outside the usual target area of lymphadenectomy in esophageal cancer surgery is extremely rare.

We report a case of superficial esophageal cancer with a solitary, giant metastasis to the right upper deep cervical lymph node (N4) manifested as a rapidly growing mass that was treated with surgery.

Case Presentation

A 57-year-old male patient presented to the department of otorhinolaryngology in our institution with the chief complaint of a mass in the right neck in 2013. Computed tomography (CT) showed a highly necrotic capsulated mass of 3.5 cm in diameter immediately under the right submandibular gland. Fine needle cytology showed class-V squamous cell carcinoma (SCC). No lesion was found in the pharyngolaryngeal area or the lungs. Upper gastrointestinal endoscopy revealed superficial esophageal cancer. The patient was referred to the department of surgery and admitted for inpatient care. The patients had no remarkable family/past history. In palpation, a well-defined, movable, elastic, and firm mass of 4 cm in diameter was noted immediately under the right submandibular gland. No other palpable enlarged lymph node was noted. The laboratory examinations on admission showed high levels of serum tumor markers: SCC, 6.2 ng/mL; cytokeratin 19 fragments, 9.0 ng/mL.

Upper gastrointestinal endoscopy revealed a 15-mm type O-IIc+IIa/T1b esophageal cancer in the left esophageal wall, 35 cm away from the incisors. Histopathologic biopsy showed well- to moderately differentiated SCC (Fig. 1).

Neck ultrasound showed a well-defined, partly solid, and partly cystic oval mass lesion of 4.5 cm in maximum diameter in the right neck. No infiltration into the common or internal carotid artery was found; however, the internal jugular vein was retracted.

CT on initial examination at the department of otorhinolaryngology revealed a capsulated mass of 3.5 cm in diameter immediately under the right submandibular gland. The mass was highly necrotic, and the internal jugular vein was retracted and infiltrated by the lesion (Fig. 2A). Two months later, the mass rapidly grew to 4.8 cm in maximum diameter (Fig. 2B). No other lymph node enlargement or metastasis to distant organs such as the lungs or the liver was found.

Neck magnetic resonance imaging (MRI) showed a slightly high intensity in the margin compared with the surrounding muscles and an apparently high intensity inside the right neck mass in a T2-weighed image. Dynamic contrast-enhanced MRI showed

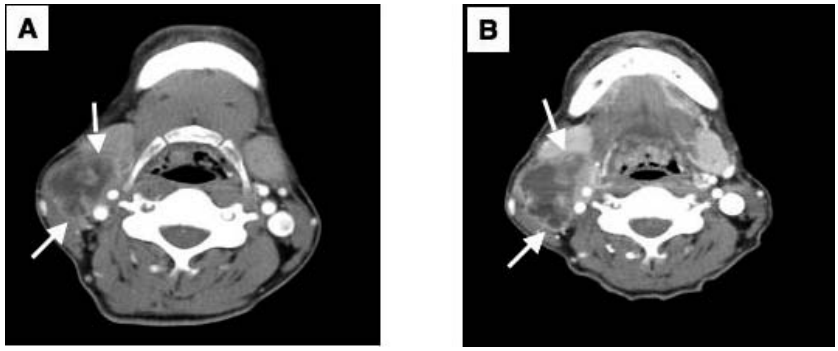

Fig. 2 (A) Neck CT revealed a capsulated mass of 3.5 cm in diameter immediately under the right submandibular gland. (B) Neck CT (2 months later). The mass rapidly grew to 4.8 cm in maximum diameter.

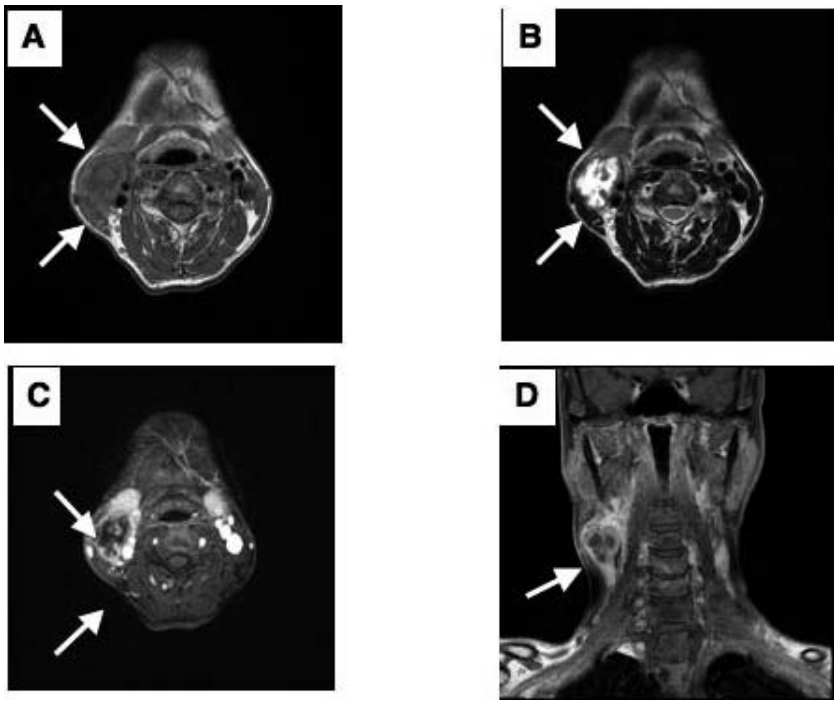

Fig. 3 (A) Neck MRI [T1 weighted image (WI)]. (B) T2WI showed a slightly high intensity in the margin compared with the surrounding muscles and an apparently high intensity. (C, D) Dynamic contrast-enhanced MRI showed prolonged contrast enhancement in the mass margin but no contrast enhancement inside.

prolonged contrast enhancement in the mass margin but no contrast enhancement inside (Fig. 3).

Positron emission tomography (PET)-CT revealed a coarse mass of maximum standardized uptake value (SUVmax) 12 in the right neck but no other significant mass (Fig. 4).

Although the diagnostic imaging of the right neck mass suggested an abscessed lateral cervical cyst, lymph node metastasis (SCC), neurogenic tumor, or tuberculous lymphadenitis, lymph node metastasis (No. 102upR) of esophageal cancer was diagnosed based on the cytology findings (class V SCC).

Thus, esophageal cancer [Mt, 0-IIc, cT1b, cN4 (No. 102upR), cMo, cStage IVa (Japanese Classification of Esophageal Cancer 2015)][3] was preoperatively diagnosed. No metastasis was found other than the giant

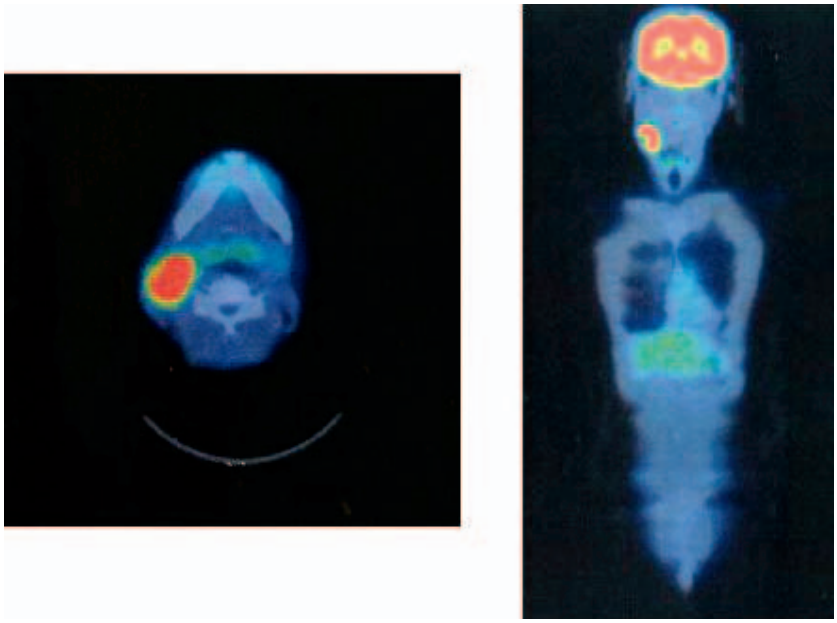

Fig. 4 PET-CT revealed a coarse mass of SUVmax 12 in the right neck but no other significant mass.

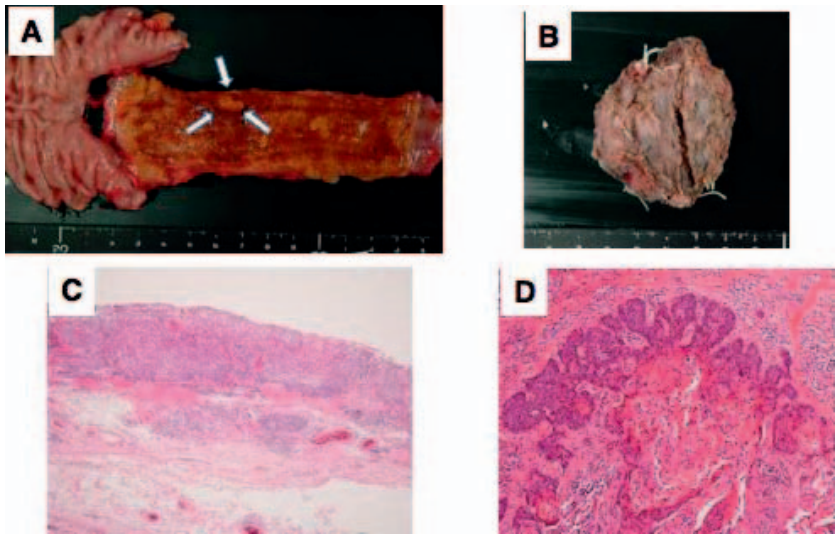

Fig. 5 (A) Resection specimen (esophagus). (B) Resection specimen (No. 102upR lymph node). (C) Histopathologic findings (esophagus ×40). (D) Histopathologic findings (lymph node ×100).

metastasis to the right cervical lymph node. Surgery was performed because the tumor rapidly grew during the detailed examination period.

The surgical techniques included subtotal esophagectomy via thoracolaparotomy approach, 3-field lymphadenectomy, combined resection of the right internal jugular vein and right upper deep cervical lymph nodes, D3, and anastomosis of the cervical esophagus and the stomach through the retrosternal route. Cur B and R0 were achieved. Macroscopic examination of the resected samples showed tight adhesion of No. 102upR lymph node to the right internal jugular vein and a large necrosis in the center (Figs. 5A and 5B).

Histopathologic examination showed that the esophageal lesion was moderately differentiated SCC. The lesion in the No. 102upR lymph node was a metastasis of SCC with a giant necrosis in the center. The esophageal cancer was pT1b (SM1); pN4 (No.102upR; 1/56); pM0; INFα; ly1; v0; and pStage IVa (Figs. 5C and 5D).

The postoperative course has been favorable. The patient completed 2 cycles of postoperative adjuvant chemotherapy with 5-fluorouracil and cisplatin (FP) and is currently taking oral TS-1. At 3 years after the surgery, the tumor marker levels are normal, no recurrence has been found in diagnostic imaging, and no tumor has been found in the pharyngolaryngeal area.

Discussion

According to the Japanese Society for Esophageal Diseases, the frequency of lymph node metastasis of superficial esophageal cancer is 0% for epithelial cancer, 3.3% for lamina propria mucosa cancer, 12.2% for muscularis mucosa cancer, 26.5% for submucosal 1 cancer, 35.8% for SM2 cancer, and 45.9% for SM3 cancer. The frequency of lymph node metastasis is quite high even in SM1 cancer.[4] According to the analysis of effectiveness of lymphadenectomy reported by the Registration Committee for Esophageal Cancer of the Japan Esophageal Society from 2001 to 2003, only 2 of 752 patients with middle thoracic esophagus cancer (0.3%), who underwent 3-field lymphadenectomy for metastasis and achieved R0, had metastasis also in No. 102upR like in the present case. None of the 752 patients survived for 5 years.[5] The Japan Esophageal Society survey in 2008 showed that only 116 of 2657 patients (4.4%) who underwent esophagectomy had pN4 tumors, and the 5-year survival rate was only 19.1%.[6]

The present case of a solitary metastasis to the upper deep cervical lymph node (No. 102upR) to which the standard lymphadenectomy is not indicated may be extremely rare because no such case was found in our literature searches. Some cases of solitary, distant metastasis of superficial thoracic esophageal cancer to the abdominal lymph nodes have been reported.[2,7,8] Such extensive random lymph node metastases are caused by the multidirectional lymph flow patterns in the esophagus. Jumping metastasis, or metastasis of esophageal cancer skipping the lymph node group, may be found in 50% to 60% of patients.[2] This is 1 such patient, but his pathology may be the rarest.

It is reported that when metastatic SCC is found in the upper deep cervical lymph node and the

primary tumor is not in the oral area like in the present case, the primary tumor is often in the epipharynx, the palatine tonsil or the root of the tongue.[9,10] Therefore, our patient has been followed up at the department of otorhinolaryngology at short intervals because of possible occult cancer in those areas. No abnormality has been found to date at 3 years postsurgery.

Thus, the patient had a solitary, skip metastasis of superficial thoracic esophageal cancer to the very distant lymph node. Such a pathologic condition is generally associated with a high recurrence risk and a poor prognosis; however, the patient has had a favorable clinical course and no recurrence presumably because of the effective postoperative adjuvant chemotherapy.

In conclusion, we reported an extremely rare case of superficial esophageal cancer with a solitary, giant metastasis to N4 lymph node that was successfully treated with surgery and postoperative adjuvant chemotherapy. The patient has had a favorable clinical course with no recurrence.

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