

Understanding the Association of Axillary Lymph Node Metastasis in Esophageal Cancers

Abstract

Lymph node metastasis is widely believed to be one of the most powerful prognostic factors influencing the outcomes of many solid cancers, including esophageal cancers. The left supraclavicular node, famously described as the Virchow's node, is occasionally involved in patients with advanced gastrointestinal cancers. Virchow node involvement is considered "nonregional" in all the gastrointestinal cancers, except in esophageal cancers. On the other hand, axillary lymph node metastases (ALNMs) are considered "nonregional" in all gastrointestinal cancers, including esophageal cancers. Exceptionally, some experts share a contrarian view and consider ALNM and supraclavicular lymph node metastasis to represent a contiguous regional dissemination of esophageal cancer. The clinical presentation of ALNM in the vast majority of the patients with esophageal cancers has been reported to be metachronous. Synchronous presentation is exceedingly rare, and our patient is possibly the second case to be reported in the English language literature. The increasing role of ^{18}F -fluorodeoxyglucose positron emission tomography computed tomography scans in aiding the staging workup in patients with esophageal cancers and ultimately influencing the choice of management in such rare scenarios is further discussed.

Keywords: Axillary lymph node metastasis, carcinoma esophagus, positron-emission tomography-computed tomography scans, prognosis

Introduction

Axillary lymph node metastases (ALNMs) from esophageal cancers are rare, the exact prevalence of which is not known.^[1] ALNM in such rare scenarios is in fact considered as a type of distant metastasis. Exceptionally, some experts share a contrarian view and consider ALNM and supraclavicular lymph node metastasis to represent a contiguous regional dissemination of esophageal cancers. We present an interesting case of carcinoma esophagus in an elderly gentleman presenting with synchronous ALNM. The association of ALNM in carcinoma esophagus along with its implications in management and prognosis is further discussed.

Case Report

A 60-year-old gentleman presented to our center with progressively increasing dysphagia and significant weight loss for 6 months. Clinical examination revealed pallor, weight loss, and significant adenopathy involving the

left supraclavicular region. An upper gastrointestinal endoscopic examination revealed a 6-cm long circumferential ulceroproliferative growth in the middle third of the esophagus, starting 30 cm from the incisors and obstructing the lumen at 36 cm, the biopsy of which revealed a moderately differentiated squamous cell carcinoma. A positron emission tomography computed tomography (PET-CT) done for staging revealed an irregular bulky growth in the middle third of the esophagus (SUV: 15.9) with the involvement of the adjacent mediastinal pleura. In addition, significant adenopathy was noted the subcarinal regions, right paratracheal region (SUV: 3.9), left supraclavicular region (SUV: 1.9), and the right axilla (SUV: 4.9) [Figure 1]. Aspiration cytology from the right axillary and the left supraclavicular lymph nodes revealed features suggestive of a metastatic squamous cell carcinoma. The management options and prognosis were explained to the patient, and a decision was made to proceed with esophageal stenting for palliation of his dysphagia and to consider palliative chemotherapy if his general condition improved.

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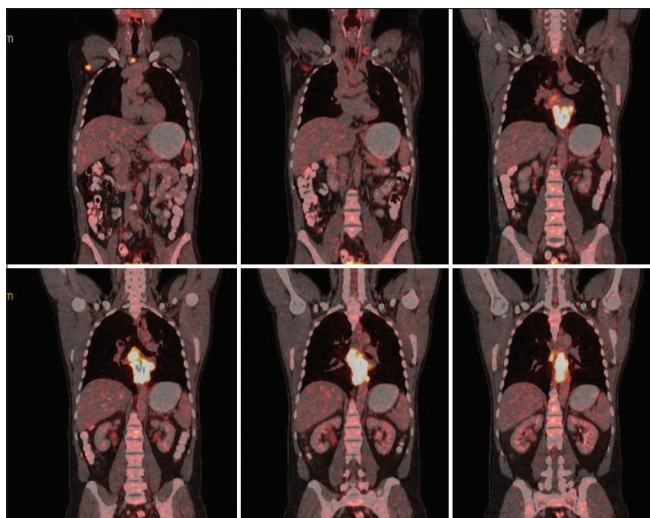


Figure 1: A positron emission tomography computed tomography done for staging revealed an irregular bulky growth in the middle third of the esophagus (SUV: 15.9) with involvement of the adjacent mediastinal pleura. In addition, significant adenopathy was noted in the subcarinal regions, right para-tracheal region, (SUV: 3.9) left supraclavicular region (SUV: 1.9), and the right axilla. (SUV: 4.9)

Discussion

The mechanisms underlying the spread of esophageal cancers to the axillary lymph nodes have not yet been clearly elucidated; there have been at least two theories proposed to explain this rare occurrence. First is the theory of retrograde spread to the axillary nodes from the supraclavicular lymph nodes. Komatsu *et al.* in a series of 361 patients with esophageal cancers reported four cases (1.1%) of ALNM. In their series, all four patients presented with left ALNM along with left supraclavicular lymph node metastasis; the authors, therefore, hypothesized that ALNM was caused by retrograde flow owing to the lymphatic blockade caused by the supraclavicular lymph node metastasis.^[2]

In a separate series of 334 patients, Bourgeois *et al.*^[3] reported the patterns of thoracic lymphatic drainage by visualization of the supradiaphragmatic lymph nodes using lymphoscintigraphy. Interestingly, in two cases (0.6%), drainage toward the left axillary lymph nodes was demonstrated without visualizing the supraclavicular nodes. A similar finding was reported in patients with lung cancers^[4,5] and also in a case report of a patient with synchronous double cancers of the esophagus with left ALNM and a right breast primary, prompting the author's to suggest a second theory of a possible direct lymphatic spread to the axillary lymph nodes bypassing the supraclavicular lymph nodes.^[6]

The two other hypotheses, which are in fact better documented in lung cancers as against in esophageal cancers, include the development of new lymphatic channels arising due to pleural involvement of lung tumors and the involvement of axillary lymph nodes as a part of

systemic disease. Our patient had esophageal cancer with left supraclavicular adenopathy and right axillary lymph nodes. Apart from the possibility of a systemic spread, it is also possible that our patient had a direct involvement of the right axilla bypassing the right supraclavicular lymph nodes.

PET-CT scans have been shown to be of immense value in the primary staging of esophageal cancers^[7-9] Further, various studies have showed that PET-CT examination can change the clinical staging of esophageal cancers in up to 40% of the patients and also change the management in up to 34% of cases, as was evidenced in our patient as well. The PET-CT scan results can also be used to evaluate the responses to neoadjuvant therapies and also to provide prognostic information.

Nonregional lymph node dissemination such as ALNM is classified as a type of distant metastasis according to the staging systems, and such patients are usually managed by esophageal stenting and/or palliative systemic chemotherapy. The prognosis of patients with ALNM is majorly influenced by the presence of other sites of distant metastasis. Some authors, however, suggest that isolated ALNM caused due to retrograde spread from supraclavicular lymph node metastasis represents an extended spectrum of locoregional disease and that good outcomes can be achieved by aggressive locoregional treatments in these highly selected patients.^[2] Our patient was deemed fit only for palliative esophageal stenting, with a decision to reserve chemotherapy after his general condition improved.

In conclusion, our report adds to the limited published evidence on the rare association of ALNM from esophageal cancers. From the clinicians' perspective, there is a need for a diligent examination of the axillary regions as a part of clinical examination of patients with esophageal cancers, especially so in the presence of supraclavicular lymph node metastasis. Similar diligence is also warranted while examining patients during follow-up, following definitive management of their esophageal cancers. A PET-CT scan is definitely a useful adjunct for primary disease staging and as demonstrated in our case in aiding the clinicians in choosing appropriate treatments for the rare patients of esophageal cancer presenting with ALNM.

Informed consent

Appropriate informed consents have been obtained.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that name and initial will not be published and due efforts will be made to conceal identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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