

An unusual metastatic site of laryngeal carcinoma: scapular muscles

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Abstract

It is well known that in advanced cervical metastatic disease of head and neck squamous cell carcinoma, the incidence of distant metastasis is high. A case of distant metastasis to the scapular muscles from an uncontrolled cervical metastasis of laryngeal carcinoma is presented. Other unusual metastatic sites are reviewed and the possible mechanism of the spread is discussed.

Key words: Carcinoma, Squamous Cell; Larynx; Neoplasm Metastases; Muscles

Introduction

The lymphatic metastatic pattern of head and neck squamous cell carcinoma is well known. The most common site of metastasis is the cervical regional lymph nodes. The reported incidence of clinically detected distant metastasis varies from 2.98 per cent to 8.5 per cent.^{1–3} However, postmortem studies have demonstrated a higher incidence ranging from 34.6 per cent to 57 per cent.^{4–6} In a large group of patients, the most common distant metastases occurred to the lung and mediastinum (53 per cent), skin (seven per cent), central nervous system (three per cent), and other organ systems (22 per cent).² Unusual metastatic sites are skin,^{7–11} percutaneous gastrostomy site,^{12,13} small intestine, and spleen,⁴ but metastasis of laryngeal carcinoma to the scapular muscles has not been reported previously in the English literature. This case is presented and the mechanism of metastasis is discussed.

Case report

A 46-year-old male was referred to our department with a neck metastasis on the right side that was infiltrating the skin. His history revealed that he had undergone left vertical hemilaryngectomy in September of 2000, but a recurrence developed at the primary site 10 months later. Then a total laryngectomy and left radical neck dissection was performed at the same clinic. On histopathologic examination a metastatic lymph node was detected with extracapsular spread. However, radiation therapy was not recommended to the patient. Three months later, a fixed mass developed at the upper right jugular region and the patient was referred to our department.

On physical examination a 4 × 4 cm fixed neck metastatic infiltrating the overlying skin was seen. Magnetic resonance imaging (MRI) sections revealed that the common carotid artery was free of tumour and a 1 cm mass at the left side posterior to the carotid bifurcation was observed (Figure 1). A right radical neck dissection with skin resection and excision of the left-sided metastatic mass was performed. The skin defect was closed with a rotation

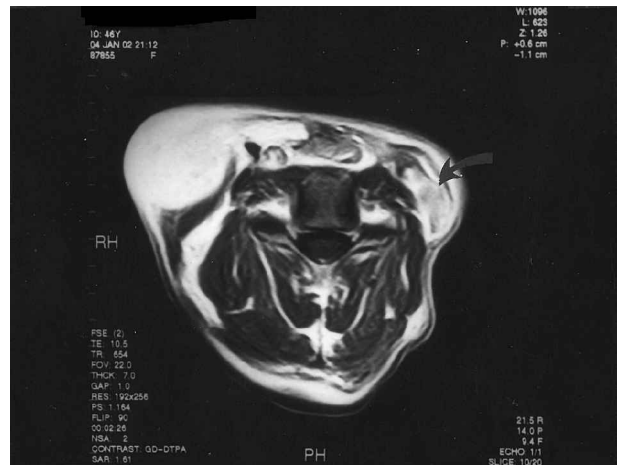


FIG. 1

T₂-weighted axial MR scan showing small tumour recurrence on left side (arrow), and a big cervical metastatic mass and infiltration of skin is seen.

skin flap. On histopathologic examination, two lymph node metastases of squamous cell carcinoma and soft tissue involvement were observed. Also, the left-sided metastasis of the carcinoma was detected.

Ten days after the operation the patient complained of severe pain and deformity on his left shoulder (Figure 2). He also gave a history of falling over on his left shoulder one month previously. At first his symptoms were attributed to previous left radical neck dissection and the trauma and the patient was referred to the orthopaedics department and an MRI scan of the left shoulder was obtained. A mass that was 11 × 8 × 7 cm in dimensions was detected between the infraspinatus and subcapsular muscles (Figure 3a, 3b). The mass was heterogeneous in structure, containing necrotic spaces and eroding the lateral margin of the left scapular bone. A biopsy was

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FIG. 2

The deformity and swelling of left shoulder.

obtained under ultrasonography by one of the authors (UE) and metastasis of squamous cell carcinoma was detected histopathologically (Figure 4 and 5). The morphological properties of the tumour was the same with the



(a)



(b)

FIG. 3 (a)–(b)

A metastatic mass (arrows) that is infiltrating the infraspinatus and subscapular muscles and eroding the cortex of the scapular bone.

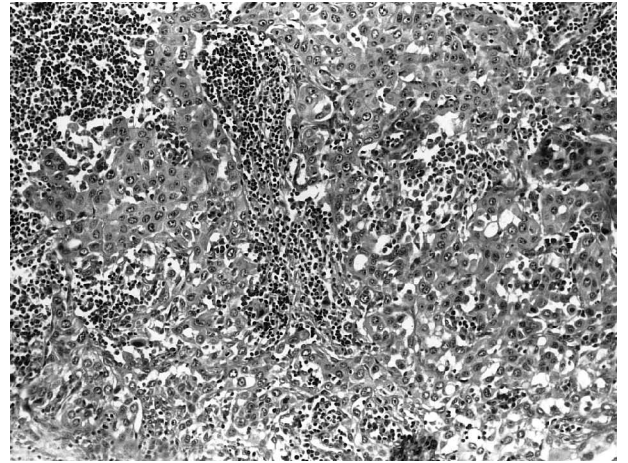


FIG. 4

Squamous cell carcinoma metastasis in lymph node from left jugular lymphatic chain (H & E; $\times 125$).

specimen that was excised from the left side of the patient's neck. Distant metastatic disease was confirmed, then the patient was evaluated for other sites of distant metastases by abdominal ultrasonography, cranial computed tomography (CT), chest X-ray and scintigraphy of the skeletal system. These investigations proved no other distant metastases. The metastatic lesion was considered to be unresectable and the patient was referred to the oncology department for palliative chemo-radiotherapy.

Discussion

Advanced nodal disease increases the incidence of distant metastases by threefold.² Distant metastases were defined as tumour spread to other organ systems. The tumour spread may be of two types: lymph node metastases to other than regional lymph nodes, the most common are mediastinal, abdominal or axially node metastases, or nonlymphatic metastases (haematogenous spread).¹ However, the mechanism of metastasis to the scapular muscles is not clear in that patient.

The disturbance of the lymphatic system in the cervical region resulting from radiation therapy or neck dissection may result in alternative pathways of drainage. This phenomenon can result in lymphatic metastasis of lar-

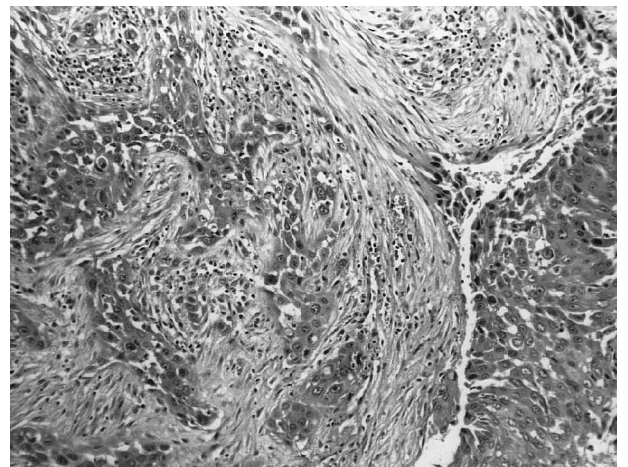


FIG. 5

Squamous cell carcinoma metastasis in the scapular muscles (H & E; $\times 310$).

yngeal cancers to sites below the clavicle.¹⁴ A connection between the jugular lymphatic system and the axillary lymph nodes has been reported.¹⁴

A subgroup of axillary nodes are the subscapular group. This group consists of six or seven nodes that are deployed on the posterior axillary wall's inferior margin, along the subscapular vessels. Their afferents drain the skin and superficial muscles of the inferior posterior region of the neck.¹⁵ The uncontrolled disease and previously performed radical neck dissection may predispose different pathways to the subscapular nodes.

Another possible explanation is haematogenous spread of the tumour, but, no other metastatic site could be found after abdominal ultrasonography, cranial CT scintigraphy of the skeletal system, and chest X-ray. But, it is probable that these techniques could miss small metastatic foci. Considering the patient's huge metastatic mass, it was agreed to refer the patient for radiation and chemotherapy. The metastatic tumour mass was too big for surgical resection, therefore further histopathologic examination, that may have provided clues for the route of metastasis could not be performed.

In conclusion, any complaint of a patient with head and neck cancer may alert the clinician for possible metastatic disease. An MRI or CT scan should be obtained and the patient should be biopsied for diagnosis.

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