

Case Report

DOI: <https://dx.doi.org/10.18203/2349-2902.ijssurgery20214767>

Scalp metastasis of oesophageal adenocarcinoma: a rare case

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Received: 18 October 2021

Revised: 10 November 2021

Accepted: 15 November 2021

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ABSTRACT

Cutaneous metastases of oesophageal adenocarcinoma are uncommon. Several different sites of metastases including skin and lip has been reported. However, metastases to the scalp is an extremely rare event. We present a unique case of oesophageal adenocarcinoma metastasis to the scalp. Further, a discussion is offered on the mechanism of route of spread from the oesophagus to the scalp.

Keywords: Metastases, Oesophageal cancer, Route of spread

INTRODUCTION

Cutaneous metastases of oesophageal adenocarcinoma is uncommon but not rare. However, metastases to the scalp is an extremely rare event.¹ We present a unique case of oesophageal adenocarcinoma metastasis to the scalp and discuss the potential mechanism of spread.

CASE REPORT

A 74-year-old male with a background of distal oesophageal adenocarcinoma (treated with 60 Gy radiation) seven months earlier was referred to a plastic surgeon (DG), with a cutaneous lesion on the left scalp vertex (Figure 1). His past medical history included history of chronic inflammatory demyelinating neuropathy (CIDP) for which he received IgG injections once a month. On initial presentation, the lesion was 3 cm diameter, nodular and had central ulceration. Positron emission tomography-computed tomography (PET-CT) imaging showed a fluorodeoxyglucose (FDG) avid lesion in the oesophagus, consistent with the known primary oesophageal adenocarcinoma and reduced size compared to pre-radiation imaging. Interestingly, the PET-CT failed to demonstrate an FDG avid lesion in the scalp. The

lesion was excised with a 5 mm margin including the galea aponeurotica. A large rotational scalp flap was marked, elevated with galeal scoring, and rotated to cover the defect without tension, and approximated with skin staples (Figure 2).



Figure 1: Left scalp vertex lesion 3 cm in diameter prior to excision.

Final histopathology of the lesion showed an ulcerated poorly differentiated tumour with areas suggestive of glandular differentiation and the same

immunohistochemistry profile as the primary oesophageal adenocarcinoma (Figure 3). The pathology showed necrosis in the ulcer base with evidence of lymphovascular and perineural invasion. The excision had clear margin. Oncologists recommended further local radiotherapy.



Figure 2: Post-surgical excision of lesion and large rotational flap repair of defect.

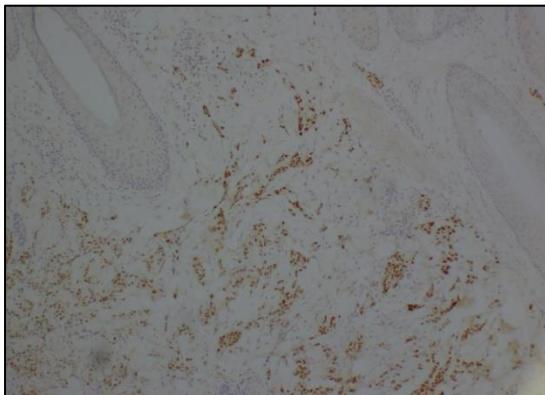


Figure 3: CDX2 (a homeobox gene that encodes an intestine-specific transcription factor, expressed in the nuclei of epithelial cells throughout the intestine and is a highly sensitive and specific marker of adenocarcinomas of intestine origin) immunohistochemistry of metastatic deposit to skin consistent with enteric differentiation.

DISCUSSION

Oesophageal carcinoma is the seventh most common cancer worldwide.² Adenocarcinoma is the most prevalent histologic type of oesophageal carcinoma in the western world whilst squamous cell carcinoma remains more common in developing nations.^{2,3} Cutaneous metastasis of both histological types is uncommon and metastasis to the scalp is extremely rare.^{3,4} Most reported cases of cutaneous metastases came from oesophageal squamous cell carcinoma.⁵

There are emerging reports describing cutaneous (lip, cheek, digit) metastases from oesophageal

adenocarcinomas; with only two reported cases in the literature of scalp metastases.^{1,6,8}

The clinical appearance of cutaneous scalp metastases has been described as inflammatory papules, indurated plaques or nodules which is consistent with our case though the spectrum of presentation is broad.⁷ Histopathology of lesions characteristically shows prominent intraluminal necrotic cellular debris, which is common for adenocarcinomas of gastrointestinal tract.¹ Utilising immunohistochemical stains to detect specific antigens within tumour cells allows for improved specificity of tumour origin.⁹

Two specific anatomical features of the oesophagus predispose it to unusual metastatic patterns compared to other gastrointestinal malignancies. Firstly, the anastomosis between the portal and systemic venous systems makes systemic spread of metastatic disease more plausible. Secondly, the absence of serosal coating and the presence of perioesophageal adventitia that connects it with the mediastinum structures including the aorto-oesophageal ligament is believed to have an important impact on the lymph node metastasis for local tumour ingrowth and distant metastasis.^{4,9} Based on the haematological and lymphatic anatomy, oesophageal cancer distant metastases can occur in one of three possible routes: arterial, venous or lymphatic. Venous spread is via the vena cava into the pulmonary and portal systems with the common sites of pulmonary and hepatic disease.¹⁰ Spread to isolated distal metastases in terminal organs or anatomical structures such as the skin, penis, lips or ears cannot be explained by lymphatic or venous spread.⁴

In our patient, the oesophageal carcinoma was distal. One would potentially expect venous spread from a proximal oesophageal cancer to travel via inferior thyroid vein and metastasize to a site in the head or neck. But a distal oesophageal cancer would drain into portosystemic veins and more commonly metastasize to the liver. Thus, for a distal oesophageal cancer to metastasize to scalp is highly unusual and is confirmed by the lack of case reports of this site of metastases.

CONCLUSION

Prompt diagnosis of metastatic disease is pertinent because its presence indicates recurrence or treatment failure of the primary cancer. This case illustrates that scalp lesions should be treated with highest level of suspicion in patients with previous history of cancer. Given the lesion was not identified on routine surveillance imaging (PET CT), it is important for clinicians to be aware of potential cutaneous metastases so they can identify them early in clinical examination. Furthermore, primary care physicians should be suspicious of a skin lesion on someone who has had an incomplete response to curative radiation therapy for a

visceral malignancy. Referrals for this patient group should be made early.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Lata TJ, Gahankari D, Arnold C. Scalp metastasis of oesophageal adenocarcinoma: a rare case. *Int Surg J* 2021;8:3699-701.