

# Cutaneous Metastases from Head and Neck Squamous Cell Carcinoma

Sangeetha Poovaneswaran, FRCR (UK), Vinidh Paleri, FRCS (ORL-HNS), Fraser Charlton, FRCPath (UK), Werner Dobrowsky, FRCR, Charles Kelly, FRCR (UK)

International Medical University, Medicine, Jalan Rasah, Seremban, Seremban, Negeri Sembilan 70300, Malaysia

### SUMMARY

The presence of cutaneous metastases in squamous cell carcinomas of the head and neck (SCCHN) is rare and associated with a dismal prognosis. It is vital to distinguish these lesions from direct invasion of the skin by SCCHN or primary cutaneous malignancies as the prognosis is vastly different and so is the management. In this case report, we present four cases of cutaneous metastases and also briefly review the literature pertaining to this phenomenon.

### KEY WORDS:

*Cutaneous Metastases, Squamous Cell Carcinoma of Head and Neck*

### INTRODUCTION

The incidence of head and neck squamous cell carcinomas (SCCHN) is on the rise with annual new cases of more than 400,000 globally<sup>1</sup>. The most common mode of spread of SCCHN is via regional lymph nodes to the cervical drainage areas<sup>2</sup>. Other lymph node groups are rarely involved. Distant metastases to lung, liver and bone are via haematogeneous spread. Cutaneous metastases from SCCHN are rare<sup>2</sup>. They are associated with poor prognosis and advanced disease<sup>2</sup>.

In this case series we describe the presentation and subsequent management of four patients with SCCHN with cutaneous metastases. A review of the literature relating to this phenomenon is also performed.

### CASE REPORT

#### Case 1

A 51 year old lady presented with an ulcerated lesion in the pyriform fossa which was subsequently staged as a T2N2cM0 (TNM-AJCC 2002; stage IV) squamous cell carcinoma of the pyriform fossa.

She achieved a complete response with concurrent chemoradiation confirmed on computerized tomography (CT) imaging and endoscopic examination.

However, four months post treatment she presented with two painful, papular lesions on her scalp and nose which were initially misdiagnosed as an infective process. However, biopsies of these lesions confirmed cutaneous metastases from her previous SCCHN (fig. 1). CT scan confirmed lung

metastases as well. She started palliative radiotherapy however died within two months of diagnosis.

#### Case 2

A 59 year old man presented with a 6 week history of a left neck mass and further investigation confirmed a stage T2N3M0 (TNM-AJCC 2002; stage IV) tonsillar tumour of squamous cell origin. He underwent a wide local excision of the tonsil and left radical neck dissection followed by post-operative radiotherapy.

He had two local recurrences in the supra-clavicular region which were treated with radiotherapy and salvage surgery.

However, 14 months from initial diagnosis he presented with histologically confirmed cutaneous metastases over the right clavicle and left infra-clavicular chest wall. These were managed with surgical excision and later with palliative radiotherapy. He passed away eight months from diagnosis of cutaneous metastases.

#### Case 3

A 54 year old lady presented with an ulcerated lesion in the left retro molar region and multiple ipsilateral cervical lymph nodes staged T3N2b (TNM AJCC 2002; stage IV). She had primary resection of the tumour, left tonsillectomy, mandible rim resection and modified radical neck dissection. This was followed up with post-operative chemoradiotherapy.

She presented eight months later with axillary nodal recurrence and small volume lung disease. The lymphadenopathy was treated with palliative radiotherapy. Her lung metastases were monitored.

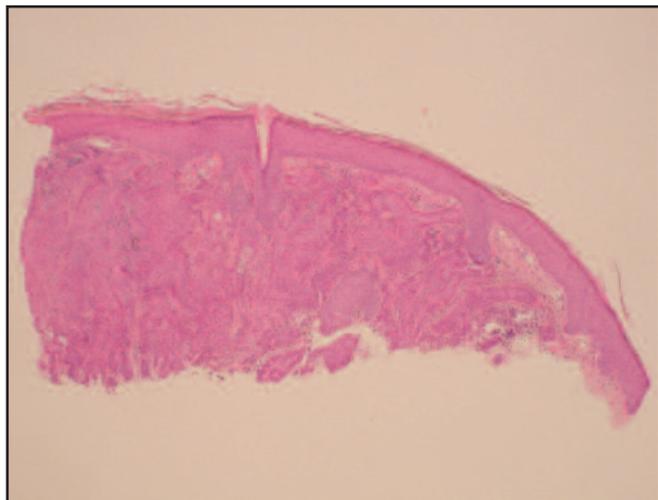
Two months later, she developed painful nodular cutaneous metastases in her left upper arm, left lower arm and left lateral breast which was treated with single 10Gy electron radiotherapy. She passed away six months from diagnosis of cutaneous metastases.

#### Case 4

A 68 yr old man presented with a T3N0M0 supraglottic squamous cell carcinoma (TNM AJCC 2002; stage III) which was treated with chemoradiotherapy. Fourteen months after completion of treatment he developed a recurrence in the primary site which was managed with total laryngectomy and selective left neck dissection. He developed biopsy proven

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Corresponding Author: Sangeetha Poovaneswaran, International Medical University, Medicine, Jalan Rasah, Seremban, Seremban, Negeri Sembilan 70300, Malaysia Email: spoovan@hotmail.com



**Fig. 1:** Histology at x40 magnification showing massive infiltration of the dermis by tumour with lack of attachment to overlying epidermis consistent with a metastasis.



**Fig. 2:** Cutaneous metastases.

cutaneous metastases two months following his surgery. (Fig.2). Staging CT scan revealed distant metastases. He was asymptomatic from his cutaneous metastases and his Karnofsky performance status was too poor for systemic chemotherapy. He passed away within two months of diagnosis of cutaneous metastases.

**DISCUSSION**

Cutaneous metastases from internal malignancies have an incidence ranging from 0.7% to 10% and they are commonly associated with breast or lung primaries<sup>3</sup>. Cutaneous metastases from SCCHN in contrast to other internal malignancies are rare and literature review indicates a much lower incidence of between 0.8-1.3percent<sup>4</sup>.

Cutaneous metastases from SCCHN commonly present as nodules and erythematous macular lesions as such they can easily be confused as an infective process or primary cutaneous squamous cell carcinomas<sup>4</sup>. They are usually painless and can be solitary or multiple<sup>2</sup>. The majority occur above the diaphragm<sup>4</sup>.

Cutaneous metastases are thought to develop from haematogenous spread if they appear distally and via dermal lymphatic spread if they occur in close proximity to the primary tumour<sup>5</sup>. Cologlu et al reported that the pulmonary circulation can possibly be bypassed via the azygous and vertebral venous systems and Batson’s plexus therefore allowing for skin implantations<sup>5</sup>. They have also reported that tumour cells may survive the filtration process of the pulmonary circulation and thus metastasize to distant skin sites<sup>5</sup>.

Histologically, cutaneous metastases are distinguished from primary cutaneous squamous cell carcinomas by the presence of a heavy dermal component that has no connection with the epidermis<sup>4</sup>. There may be associated necrosis, inflammation and lymph vascular invasion<sup>4</sup>. Also,

the degree of differentiation is usually the same as in the primary tumour<sup>4</sup>.

These lesions must be distinguished from direct invasion of the skin by SCCHN or tumour implantation into the incision at time of surgery, which does not represent true metastatic spread and affects prognosis differently<sup>2</sup>.

The average time of onset following diagnosis of SCCHN range from 1 to 39 months with three quarter of cutaneous metastases appearing by 18 months<sup>4</sup>. Disease stage does not appear to predict for occurrence of cutaneous metastases<sup>4</sup>. Pitman *et al* reported that the development of cutaneous metastases are more common if two or more cervical lymph nodes metastases are present or there is extracapsular spread of tumour in the cervical nodes<sup>2</sup>.

The occurrence of cutaneous metastases is associated with a very poor prognosis. Median survival from onset of cutaneous metastases ranges from three to seven months, with zero percent one year survival rate<sup>2</sup>, as illustrated in the cases described.

Cutaneous metastases from SCCHN are uncommon, and there is no agreed consensus on their management and treatment. Review of literature suggests that treatment is palliative and surgical excision, radiotherapy and chemotherapy have all been used depending on the clinical circumstances. The above four cases illustrate different management techniques of skin metastases which are guided by the overall clinical condition of the patient.

**Consent**

Written informed consent was obtained from the patient for publication of this case report and any accompanying images.

**Competing interests**

The authors declare that they have no competing interests.

**Authors' contributions**

SP reviewed the literature and wrote the manuscript. VP carried out the operation on the patient and was the primary editor of the manuscript. CK and WD were involved in the care of the patient and edited the manuscript. FC provided the pathology images and interpretation. All authors read and approved the final manuscript.

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