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BRIEF REPORT

A rare cutaneous presentation of metastatic parotid adenocarcinoma

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ABSTRACT

Primary adenocarcinomas of the parotid gland are rare, accounting for < 5% of all head and neck malignant neoplasms. The biological behaviour of these tumours varies considerably. Low-grade tumours are minimally invasive, whereas high-grade tumours show a high incidence of local recurrence and distant metastases. We report a case of metastatic parotid adenocarcinoma which presented with cutaneous features. This case illustrates that such salivary gland malignancies can very rarely present to the dermatologist. These potentially aggressive tumours require prompt diagnosis and management with multidisciplinary team input to ensure that the appropriate treatment is instigated.

Key words: cutaneous metastases, parotid adenocarcinoma, salivary gland tumours.

INTRODUCTION

Malignant salivary gland tumours are rare, with a reported incidence of 1.2/100 000 population, and account for only 0.3% of all malignancies.[1] Primary adenocarcinomas of the parotid gland are rare, accounting for < 5% of all head and neck malignant neoplasms.[2] Within this diverse group, biological behaviour varies considerably. Low-grade tumours have an excellent prognosis; however, high grade tumours show aggressive behaviour leading to a worse prognosis. To our knowledge, there are only two previously reported cases in the English literature of primary parotid adenocarcinoma presenting with cutaneous features.[3,4] This case raises the awareness that malignant parotid gland tumours can very rarely present with cutaneous features to the dermatologist.

CASE REPORT

A 83-year-old woman presented with a 3-month-history of an itching, burning 'rash' on her upper chest, which she attributed to the use of a new deodorant spray. The patient ceased contact with any potential allergens and tried a number of treatments, including 1% hydrocortisone, oral chlorphenamine, Hibiscrub (Regent Medical, Dunstable, UK) antiseptic lotion, and oral flucloxacillin 500 mg four times a day for 1 week without demonstrable benefit. She sought medical attention as the rash became painful and weepy. Other than malaise, she denied any other constitutional symptoms, in particular, she reported no anorexia, night sweats or weight loss. Her past medical history revealed a 50-year-history of an asymptomatic right-sided facial swelling which, she was told at the age of 30 years was a benign parotid swelling. At that time, the tumour was asymptomatic and she therefore declined surgical intervention because of the potential risk of facial nerve injury. However, over the last 4 months, the right-sided facial swelling increased in size.

An examination revealed a striking violaceous, indurated eruption with infiltrating nodules and ulceration on her chest, extending to the right neck, cheek and post-auricular region. The longstanding right-sided facial swelling was also noted with an associated recent onset lower motor neurone right-sided 7th facial nerve palsy (Figs 1,2). There was palpable cervical and axillary lymphadenopathy.

Laboratory investigations showed a normal white blood cell count with lymphopaenia 0.5×10^9/L (5.5–8.5 $\times 10^9$/L), a mildly elevated erythrocyte sedimentation rate 19 mm/h (5–15 mm/h) and normal renal and liver function. A chest X-ray revealed a 13-mm coin-shaped lesion in the right upper lobe of the lung. A subsequent computed tomography scan revealed a 57-mm mass arising from the right parotid gland that extended to the posterior neck muscles (Fig. 3).

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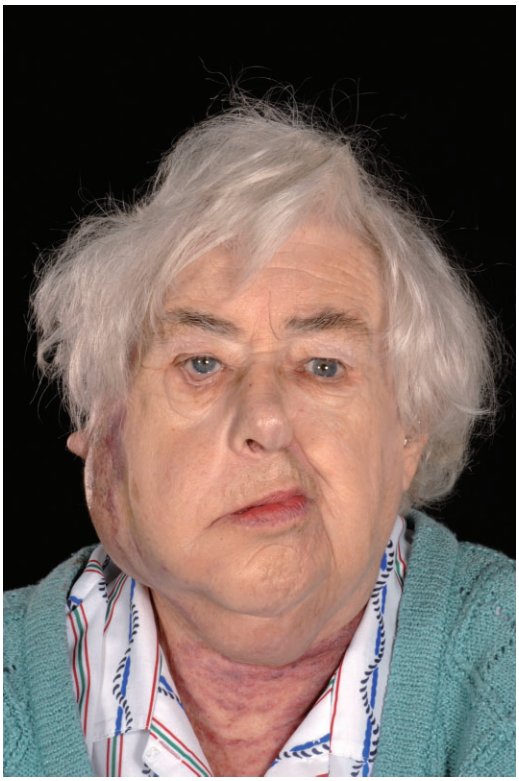

Figure 1 Longstanding, large, firm, right-sided facial swelling with recent onset ipsilateral facial nerve palsy.

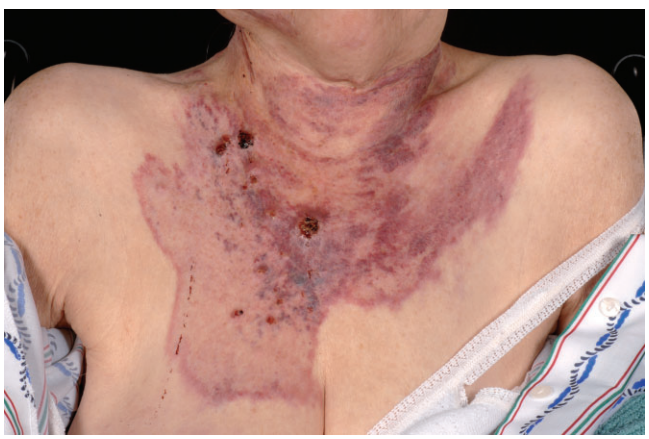

Figure 2 Striking violaceous, indurated eruption with infiltrating nodules and ulceration on the chest, with islands of normal skin in between the plaques.

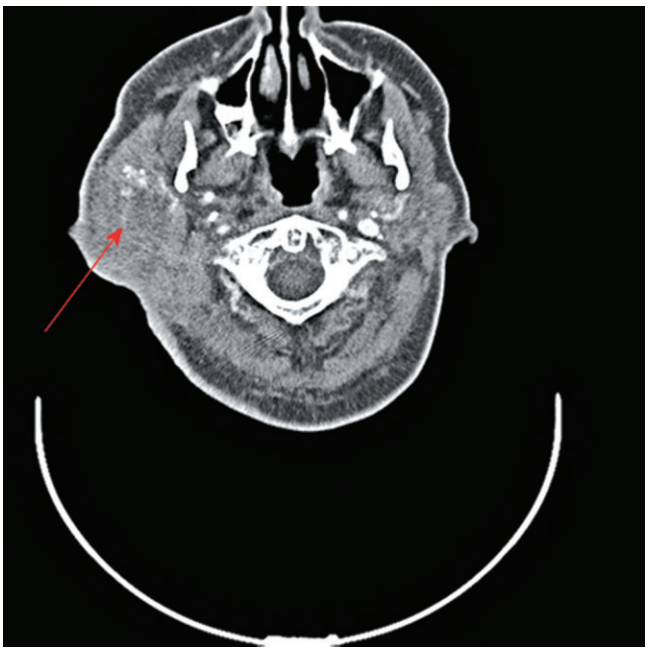

Figure 3 Contrast-enhanced computed tomography scan of head and neck showing enlargement of both superficial and deep lobes of the parotid gland (marked arrow). Margins poorly defined, suggesting local infiltration. High attenuation areas in the parotid gland reflect increased vascularity.

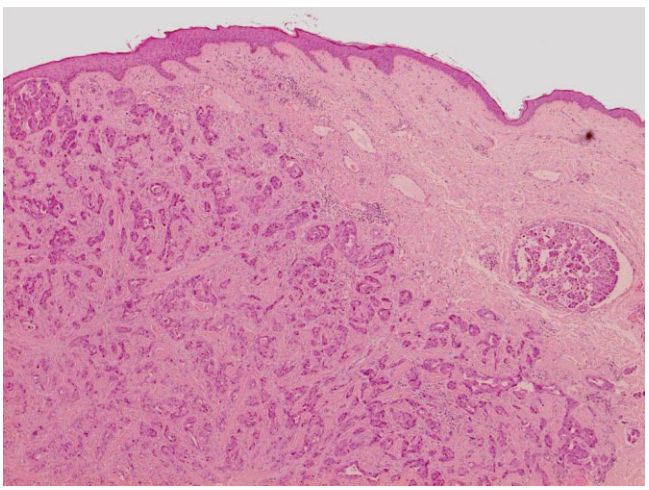

Figure 4 Diagnostic skin biopsy of the anterior chest wall showing adenocarcinoma in lymphovascular channels with dermal infiltration forming a nodule. Vascular invasion is visible (marked arrow). (H&E; magnification × 4).

Pulmonary, skin and thyroid nodules were noted, together with widespread axillary and groin lymphadenopathy.

A skin biopsy of the chest wall revealed an adenocarcinoma in the lymphovascular channels with dermal infiltration (Fig. 4). The cells were immunoreactive for cytokeratins 5, 6 and 7, anti-cytokeratin 5.2, – cancer antigen 125 with some positivity for Wilms tumour 1 and calretinin. The tumour was negative for cytokeratin 20, thyroid transcription factor 1 TTF1, thyroglobulin, renal cell carcinoma, CD34, CD31, S100, human melanoma black-45 and oestrogen receptor. In view of the extensive disease and poor prognosis, she was treated symptomatically with opioid analgesia and palliative radiotherapy to the fungating areas on the chest wall and right cheek. Unfortunately, she died 1 month after her initial presentation.

DISCUSSION

Parotid gland carcinoma is rare, with highly variable clinical features. Although most patients present with a facial mass, tenderness, trismus, facial paralysis, cranial nerve palsy, dysphagia, odynophagia, headache and skin ulceration may all occur. A recent clinicopathological study showed that the mean age at diagnosis was 59.4 years, with 52% of patients being male.[5] The most frequent histological types are adenocarcinoma (22%) and mucoepidermoid carcinoma (22%) followed by squamous cell carcinoma (16%) and adenoid cystic carcinoma (15%).[5] Another recent population-based study showed that tumour histology predicted survival, with acinar cell carcinomas exhibiting the best survival, whereas adenocarcinoma exhibited worse survival rates with only 50% surviving at 10 years.[6] Other poor prognostic factors include increasing age (especially over 55 years), tumour size, extra glandular extension and nodal positivity.[6]

Cutaneous metastases develop in 0.7–9.0% of all patients with cancer.[7] The most frequent primary tumours to metastasise to the skin in women are from the breast, the large intestine and the ovary.[8] Cutaneous metastases from salivary gland tumours are relatively rare and are estimated to represent 2% of all metastases to the skin in men and 1% in women.[9] The cutaneous features are diverse, typically presenting with sudden onset of multiple asymptomatic, movable or fixed, dermal or subcutaneous nodules.[9] Although metastatic adenocarcinoma to the skin and parotid gland from an unknown primary remained a possibility, this was deemed unlikely in view of our patients' clinical presentation and the immunohistochemical profile of the tumour. In particular, CK20 positivity alone indicates the metastatic spread of adenocarcinoma in several organs,[10] which was negative in our case.

Despite advances in wide surgical excision, radiotherapy and chemotherapy regimens, the overall survival for advanced high-grade parotid cancers remains poor at around 35%.[4] Recent clinicopathological studies have demonstrated the overexpression of molecular markers such as epidermal growth factor receptor, erythroblastic leukemia viral oncogene homologue 2 and the human epidermal growth factor receptor-2 oncoprotein,[11] suggesting that biologics such as cetuximab may have a therapeutic role.

We postulate that our patient had a longstanding benign pleomorphic adenoma of the parotid gland, an intrinsically indolent entity that transformed into an adenocarcinoma, with subsequent widespread metastases. This case highlights the rare occurrence of malignant parotid tumours presenting with metastatic disease to the dermatologist. Such potentially aggressive tumours require prompt diagnosis and management with multidisciplinary team input.

REFERENCES

1. National Cancer Institute. Cancer incidence – surveillance, epidemiology, and end results (SEER) registries research data. Available from URL http://seer.cancer.gov/statistics/types/incidence.html Updated 15 April 2011; cited 22 December 2011.
2. Jeannon JP, Calman F, Gleeson M *et al*. Management of advanced parotid cancer. A systematic review. *Eur. J. Surg. Oncol.* 2009; **35**: 908–15.
3. Tok J, Grace F, Berbarian B *et al*. Cutaneous metastasis from a parotid adenocarcinoma. *Am. J. Dermatopathol.* 1995; **17**: 303–6.
4. Schwartz RA, Rubenstein DJ, Raventos A *et al*. Inflammatory metastatic carcinoma of the parotid. *Arch. Dermatol.* 1984; **120**: 286–91.
5. Pohar S, Gay H, Rosenbaum P *et al*. Malignant parotid tumours: presentation, clinical/pathologic prognostic factors, and treatment outcomes. *Int. J. Radiat. Oncol. Biol. Phys.* 2005; **61**: 112–18.
6. Bhattacharyya N, Fried MP. Determinants in survival in parotid gland carcinoma: a population-based study. *Am. J. Otolaryngol.* 2005; **26**: 39–44.
7. Chang CH, Liao YL, Hong HS. Cutaneous metastasis from adenoid cystic carcinoma of the parotid gland. *Dermatol Surg.* 2003; **29**: 775–9.
8. Brownstein MH, Helwig EB. Patterns of cutaneous metastasis. *Arch. Dermatol.* 1972; **105**: 862–88.
9. Schwartz RA. Cutaneous metastatic disease. *J. Am. Acad. Dermatol.* 1995; **33**: 161–82.
10. Tott T. Cytokeratins 20 and 7 as biomarkers: usefulness in distinguishing primary from metastatic adenocarcinoma. *Eur. J. Cancer* 2002; **38**: 758–63.
11. Sorenson KB, Godballe C, de Stricker K *et al*. Parotid carcinoma: expression of kit protein and epidermal growth factor receptor. *J. Oral Pathol. Med.* 2006; **35**: 286–91.