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Melanoma in the masseter muscle

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Abstract
This case report presents two very unusual cases of melanomas arising within the masseter muscle. Both were metastases of unknown origin arising in young, healthy patients and presenting as asymptomatic lesions. No primary lesions were found in either case. A comprehensive search of the world literature revealed no previous similar cases.

Key words: Melanoma; Masseter Muscle; Neoplasm, Metastasis

Introduction

This paper is a case report of two metastatic melanomas arising within the masseter muscle in two separate patients.

A melanoma may occur as a primary lesion on the skin, oral mucous membranes, eye, vaginal mucosa or upper respiratory tract. It has also been reported as a primary lesion in the parotid duct and as a metastatic lesion to the facial nerve.[1] However, a comprehensive literature search did not find any melanomas related to the masseter muscle.

Metastatic melanomas can involve any organ in the body, including the placenta and foetus. Melanoma constitutes two to five per cent of all cases of metastases of unknown origin (MUO). MUO are metastatic solid tumours from which the site of origin is not suggested by thorough history, physical examination, chest radiograph, routine blood and urine studies, or histological evaluation. Approximately four per cent of malignant melanoma cases present as MUOs.[2]

Widespread metastasis of a melanoma is unfortunately common, first to regional lymph nodes then to distant sites such as the liver and lungs. Malignant melanomas must be completely excised as early as possible, including a margin of 'normal' skin around the edges. Prognostic factors include depth of invasion, presence of positive lymph nodes and distant metastases. The prognosis in patients with MUO is unaffected by whether the primary lesion is ever found.[2]

A typical melanoma will present as an enlarging pigmented area, ranging in colour from light brown to deep blue or black. This may be surrounded by a zone of erythema and frequently shows crusting, bleeding or ulceration of the surface.[3]

Case report

Case 1

A 23-year-old male presented with a six-year history of a slow growing, asymptomatic swelling in his left cheek. The lesion presented as a soft, fluctuant and mobile swelling of about 6 cm in diameter and was noted to be more prominent when he clenched his jaw. It was noted to be deep in soft tissue and most noticeable at the angle of the mandible. No lymph nodes were palpable.

He underwent magnetic resonance imaging (MRI) scans, which suggested the lesion to be a rhabdomyosarcoma (Figures 1 and 2). This was thought to be unlikely in view of the long history and clinical presentation. An excisional biopsy was performed by an intra-oral approach. The lesion had no extension onto the mucosal surface of the mouth, and was dissected out of the masseter muscle.

Histology revealed sections of striated muscle containing a tumour composed of sheets of spindled and epithelioid cells with moderately sized irregular nuclei, focally with prominent nucleoli. Some of the cells contained finely divided granules of pigment and numerous macrophages containing phagocytosed pigment. The diagnosis was made of a secondary malignant melanoma. There was no evidence of a pre-existing primary lesion at this site and no primary melanoma was ever found.

Lesional cells extended to the margins of excision, so further surgery was undertaken to 'core out' the original surgical site. No residual melanoma was seen. The patient also underwent a thorough examination with dermatology and ophthalmology to exclude any cutaneous or ocular lesions.

The patient made a full recovery, after initially experiencing severe oral trismus. He remains well after one year, with no symptoms or signs of recurrent disease. He continues to be reviewed every six months.

Case 2

A 38-year-old male presented with a swelling in his left cheek, which he had first noticed six weeks previously, with no change in size. He was otherwise fit and well.

On examination he had a smooth mobile mass, 2 cm in diameter and palpable extra-orally and intra-orally in

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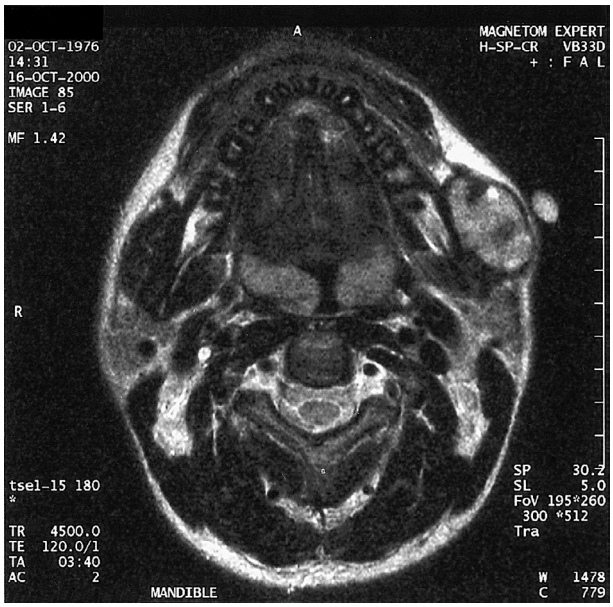

FIG. 1
MRI scan in horizontal cross-section.

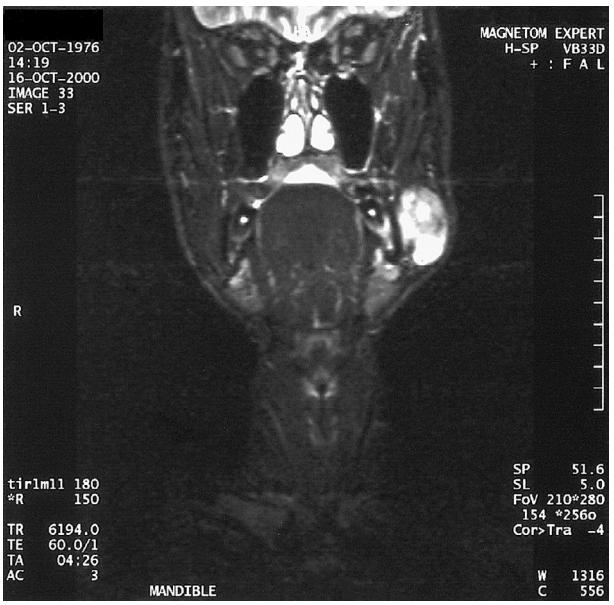

FIG. 2
MRI scan in coronal cross-section.

the left cheek. There were no other significant findings on examination.

A fine-needle aspirate showed high cellularity with sheets of poorly cohesive polygonal cells, large round nuclei and prominent nucleoli. Many cells contained granular pigment. The appearance was indicative of a neoplasm, with melanoma favoured, in view of the nuclear features and pigment. Lymphoma and carcinoma were also considered in the differential diagnosis.

An MRI scan was carried out and this confirmed the isolated lesion to be within the body of the left masseter. No sign of any primary lesion was found. Mild cervical lymphadenopathy was noted bilaterally, the largest measuring approximately 1 cm in long axis. He underwent excision of the presenting lesion via an external approach. The middle branches of the facial nerve were identified and preserved. The histology confirmed the diagnosis as metastatic melanoma. Immunocytochemistry showed positivity for both S100 and HMB 45, both melanocytic markers. Lymphoid (CD45) and epithelial (mixed cytokeratin) markers were negative. Figures 3 and 4 show the striking melanin pigmentation.

He remains well and has been under review for 15 months with no evidence of local recurrence or primary lesion.

Discussion

Melanocytes arise embryologically from the neural crest ectoderm and enter the dermal–epidermal junction at about 11 weeks of gestation. They divide and maintain themselves as a self-reproducing population. It is now believed that these melanocytes spread into all areas of the body. Melanocytes are involved in the development of pigmented lesions in the oral mucosa including pigmented tumours and melanoma.

In both of these cases the lesion presented as an asymptomatic mass, which is likely to have been present for many years. No aetiological factors and no primary lesion could be identified in either case. By definition these lesions were distant metastases (M1) and therefore Stage IV grouping, giving a 10 per cent five-year survival rate.[4,5]

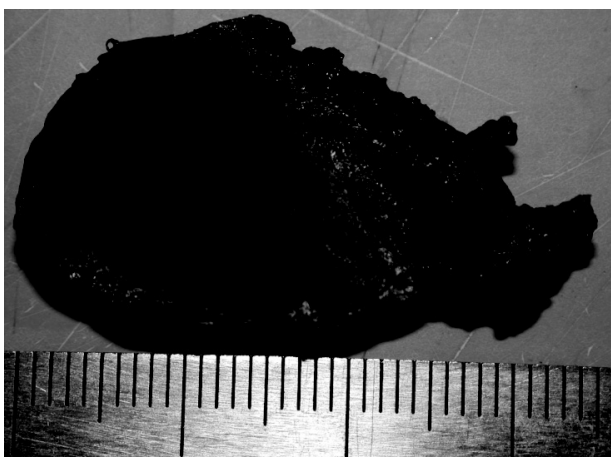

FIG. 3
Specimen showing striking macroscopic pigmentation (specimen 35 mm in length, ruler visible).

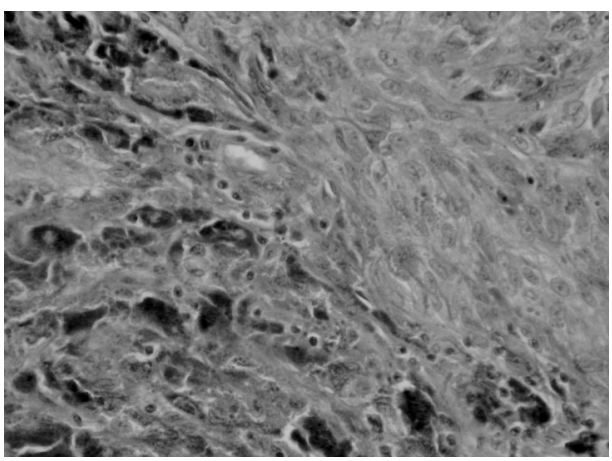

FIG. 4
Tumour showing heavy melanin pigmentation within tumour cells (H & E; ×400).

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Melanoma is the most common cancer in young adults of 25–29 years of age.[6] It is important to recognize this tumour at an early stage so prompt treatment can be administered.[3]

- **This is a case report of two unusual melanomas arising within the mass of the muscle**
- **Both were metastasis from lesions of unknown origin in young healthy patients**
- **No previous similar reported cases are present within the world literature**

The cases illustrated are malignant MUOs. It is reported that five per cent of patients with melanoma present with symptoms of distant metastases without an apparent primary site. Explanations of how melanoma can present as MUO are as follows:
(1) the primary lesion may have been destroyed;
(2) the primary lesion may have regressed spontaneously;
(3) the tumour may have arisen de novo within a lymph node.[2]

Lesions showing hyperpigmentation and local enlargement clinically should be treated as suspicious, and a diagnosis of a metastatic melanoma should be considered. It must be appreciated that melanomas are showing an increasing incidence rate, especially in young people and earlier treatment usually means a better prognosis for the patient. It is therefore prudent to be aware of such unusual presentations of this malignant disease.

References

1 Conley J, Juarbe C, Patow CA, Angel MF. Metastatic melanoma to the facial nerve. *Plast Reconstr Surg* 1991; **87**:341–5
2 Casciato DA, Lowitz BB, eds. *Manual of Clinical Oncology*. 4th edn. Philadelphia, PA: Lippincott Williams and Wilkins, 2004
3 de Braud F, Khayat D, Kroon BB, Valdagni R, Bruzzi P, Cascinelli N. Malignant melanoma. *Crit Rev Oncol Hematol*. 2003;**47**:35–63
4 Greene FL, Page DL, Fleming ID, Fritz A, Balch CM, Haller DG, *et al*., eds. *American Joint Committee on Cancer Staging Manual*. 6th edn. New York, NY: Springer-Verlag, 2002
5 Sobin LH, Wittekind C, eds. *TNM Classification of Malignant Tumours*. 6th edn. New York, NY: John Wiley and Sons, 2002
6 Desmond RA, Soong SJ. Epidemiology of malignant melanoma. *Surg Clin North Am* 2003;**83**:1–29

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