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Synchronous primary mucosal melanoma and mucoepidermoid carcinoma of the maxillary antrum

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Abstract
We present a case of contiguous primary malignant melanoma of the nose and maxillary antrum and mucoepidermoid carcinoma of the maxillary antrum. We believe that this association has not been previously recorded; whether this represents divergent differentiation in a single tumour or 'collision' of two separate tumours is uncertain.

Case report

A 77-year-old woman presented with a 6-month history of intermittent left sided epistaxis and increasing left nasal obstruction. There was no relevant past medical or family history. On examination the left nasal cavity was filled by a lobulated polypoid red/brown tumour (Fig. 1). There was an enlarged mobile left submandibular lymph node.

Computerized tomography (CT) showed a mass in the maxillary antrum extending into the nasal cavity to abut the nasal septum. The mass consisted of two radiologically distinct components; the medial component was more radiodense than the lateral component (Fig. 2).

Incision biopsy of the nasal mass showed a malignant melanoma composed of sheets of large cells with pleomorphic hyperchromatic nuclei and abundant eosinophilic cytoplasm containing coarse and finely divided melanin pigment.

Chest X-ray, liver CT scan and bone scintigram did not reveal any distant metastases. There were no suspicious skin lesions. A left maxillectomy and left functional neck dissection was performed. Sectioning of the maxillectomy specimen revealed the contained tumour consisted of two components. Medially there was a pigmented lobulated mass prolapsing into the nasal cavity; adjoining this laterally was a lobulated cream coloured tumour.

Histology of the medial component was idential to the initial biopsy. The overlying epithelium was infiltrated by melanoma, possibly representing local origin. Laterally the melanoma abutted anaplastic carcinoma and poorly differentiated mucoepidermoid carcinoma with, in some areas, classical morphological features with mixed epidermoid and mucus secreting cell patterns (Figs. 3&4). Melanin could be demonstrated in the melanomatous areas but not in the carcinoma. Immunohistochemistry for low molecular weight cytokeratins (Cam 5.2) was positive in tumour cells only in the carcinomatous areas; staining for S100 protein was positive only in the melanomatous areas.

The functional neck dissection contained 10 lymph nodes of which only one, the enlarged submandibular node, contained

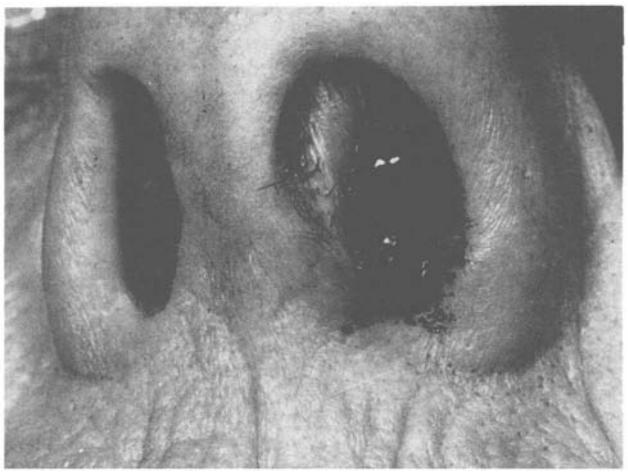

Fig. 1
Polypoid reddish/brown tumour in left nasal vestibule.

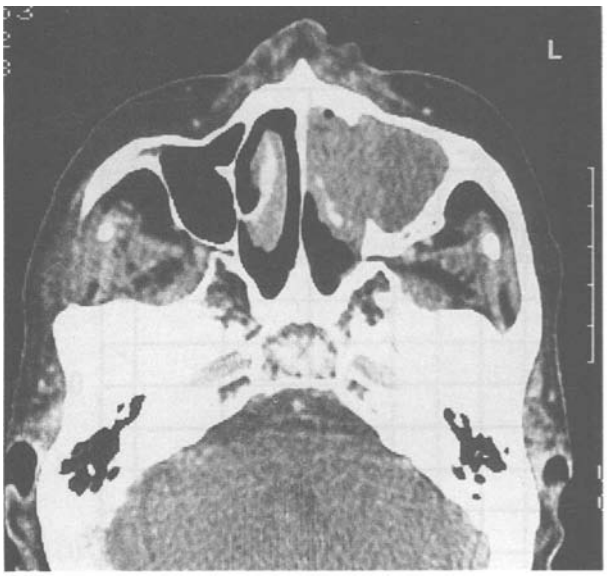

Fig. 2
Maxillary CT scan demonstrating relatively radiodense medial component of left maxillary mass and radiolucent lateral component.

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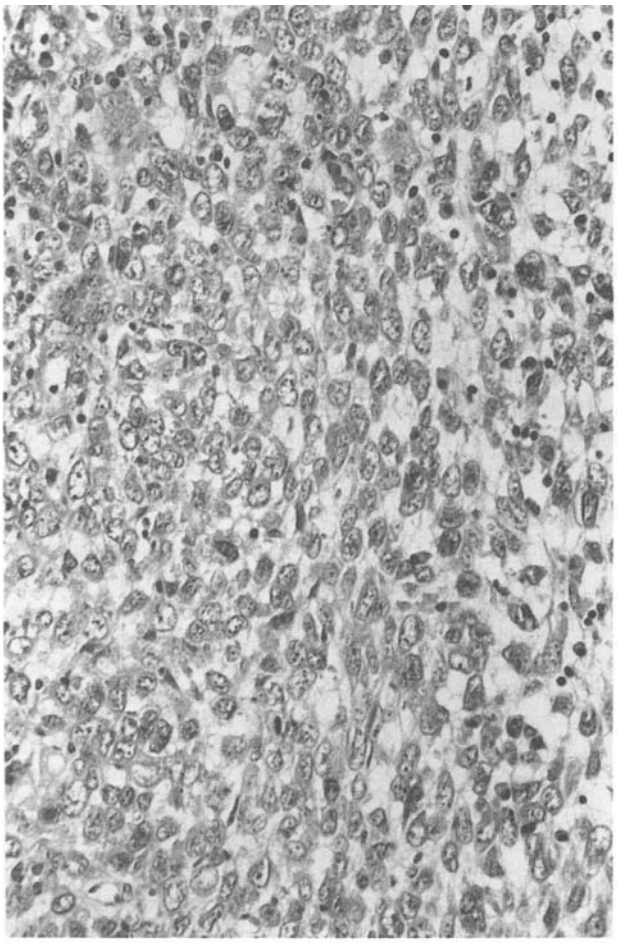

FIG. 3

Area of malignant melanoma showing spindle and epitheloid cell morphology.

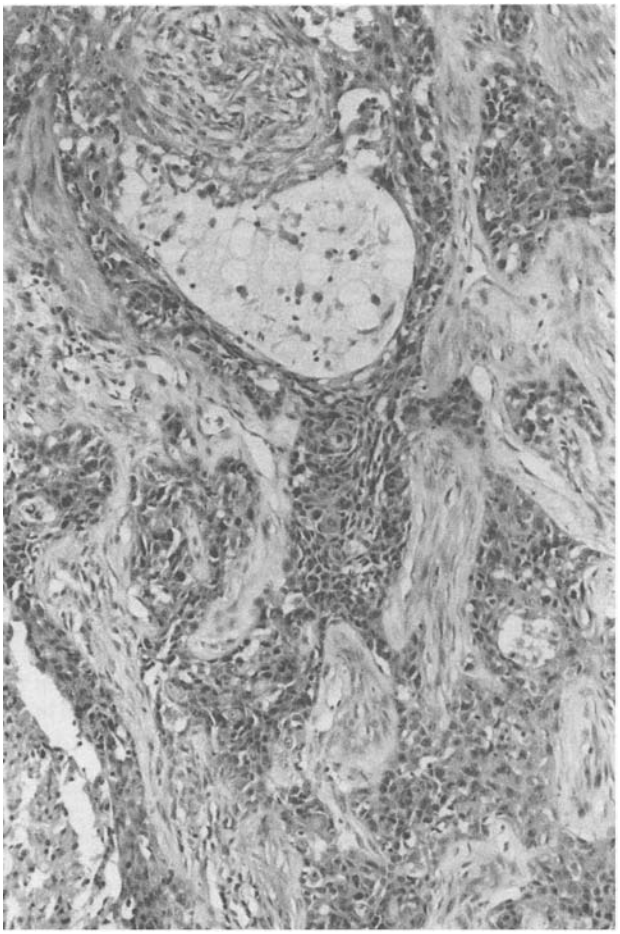

FIG. 4

Poorly differentiated mucoepidermoid carcinoma with mixed epidermoid and mucus secreting cell patterns. (×100)

metastatic tumour. This contained metastatic malignant melanoma with no extracapsular spread.

The patient made a good recovery and was alive with no sign of recurrence at 6-month follow-up.

Discussion

Mucosal malignant melanoma of the nose and paranasal sinuses and mucoepidermoid carcinoma of the maxillary antrum are both rare tumours (Lund, 1982; Blatchford *et al.*, 1986; Simpson *et al.*, 1988). Mucosal melanoma of the nose is thought to arise from nasal melanocytes (Zak and Lawson, 1974; Cove, 1979) whilst maxillary mucoepidermoid carcinoma probably arises from minor salivary glands (Simpson *et al.*, 1988). We have been unable to find any reports of similar synchronous occurrences of these tumours.

We suggest two possible hypotheses to explain the findings in this patient:

1) These are two separate primary tumours which have collided.

2) A single tumour has undergone divergent differentiation into two distinct tumour types.

Tumours demonstrating divergent differentiation towards melanoma and carcinoma are rarely reported, although the finding of S100 protein in a number of carcinomas may represent divergence (Drier *et al.*, 1987). Rosen *et al.* (1984) reported a skin tumour on the nose with features of both melanoma and carcinoma; they found immunohistochemical and ultrastructural evidence of multidirectional differentiation by demonstrating co-expression of keratin and S100 protein in some cells, and also saw tonofilaments and compound melanosomes in the same cell. Szpak *et al.* (1983) also described a pigmented squamous cell carcinoma in which the cells contained pre-melanosomes as well as tonofilaments. Malignant cells may take up melanin, e.g. in Paget's disease of the breast (Culbertson and Horn, 1956) and it has been suggested that the presnce of pre-melanosomes does not prove bidirectional differentiation (Szpak *et al.*, 1988). Charlton (1984) reported another skin lesion which showed features of basaloid carcinoma and malignant melanoma. In this case there were two separate components but some areas were biphasic with features of both tumours.

In our case we were unable to identify cells showing transitional features between melanoma and carcinoma. We therefore conclude that the most likely explanation is collision of two separate primary tumours. Because these tumours are rare individually, this raises the possibility of a common aetiological link.

Acknowledgement

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