

Glomus tumour of the oropharynx

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Abstract

Haemangiopericytoma and glomus tumours are infrequent neoplasms in otorhinolaryngology. A case of glomus tumour with haemangiopericytomatous features of the left amygdalar fossa is reported. Its clinical, surgical and histological features are described. This case report supports the unitary concept of smooth muscle tumours of the small vascular wall.

Key words: Oropharynx; Haemangiopericytoma; Glomus tumour

Introduction

In otorhinolaryngology, vascular tumours consisting of cells resembling the contractile cells of small blood vessel walls (haemangiopericytomas and glomus tumours) are infrequent (Walike and Bailey, 1971; Gührin, 1979). They occur most often in the nasal cavity, paranasal sinuses, nasopharynx, and occasionally in the larynx, mouth and salivary glands (Fu and Perzin, 1974; Compagno, 1978; Compagno and Hyams, 1978; Brockbank, 1979; Tajima *et al.*, 1981; Saku *et al.*, 1985; Allison *et al.*, 1989; Kapadia *et al.*, 1993; Whittam and Hellier, 1993). In the literature reviewed we found no references to these tumours in the oropharynx.

Case report

A 72-year-old woman presented with a polypoid tumour in the left amygdalar region that had been growing for seven years causing dyslalia, dyspnoea, dysphagia, and occasional bleeding on contact. On physical examination, a multilobulated tumour (5 cm maximum diameter) which was situated on the left lateral wall of the oropharynx and extended toward the midline was observed. The outer surface of the tumour was smooth with punctiform ulceration and reddish-blue colouration. The right amygdala was atrophic. Computed axial tomography (CT) showed that the tumour occupied the amygdalar fossa and extended downwards toward the piriform sinus (Figure 1). One year after total tumourectomy the patient was well and free of disease.

The surgical specimen (5 × 3.5 × 3 cm) was elastic and reddish-blue with whitish areas when seen in section. The deeper parts of the lesion were delimited by the pharyngeal aponeurosis. Histologically, the cellular proliferation was monomorphic with numerous capillary lumina and scant interstitial collagen. Large areas of the tumour had an organoid aspect and contained clear polygonal cells with round, uniform nuclei, capillaries with dilated lumina, occasional foci of hyaline struma, and clumps of polygonal cells around cavernous vascular spaces. Reticulin staining revealed a well-defined pericellular and perivascular pattern. In other areas the tumour was less differentiated and exhibited oval-shaped, poorly-defined cells arranged in compact sheets; the nuclei were oval-shaped or round and discretely pleomorphic. The vascular network in this area was prominent and consisted of elongated capillaries with a collapsed lumina. The-

mitotic index in the less-differentiated area was less than 1 mitosis per 10 high magnification fields (Figure 2). In the organoid area, the polygonal cells were intensely and extensively immunoreactive to vimentin antibodies and exhibited focal immunostaining to specific smooth muscle actin (HHF 35) and desmin antibodies. Desmin immunostaining was always less intense and extensive than actin immunostaining and was limited to the cells of the organoid areas (Figure 3). Vessel walls included in the tumour presented specific actin and vimentin immunoreactivity. The muscular layer of venous and arterial vessels was positive for desmin. In the less-differentiated area, the oval-shaped cells with poorly-defined cytoplasm expressed only vimentin immu-



FIG. 1

CT scan showing a tumoural mass located in the left wall of the oropharynx protruding towards the midline.

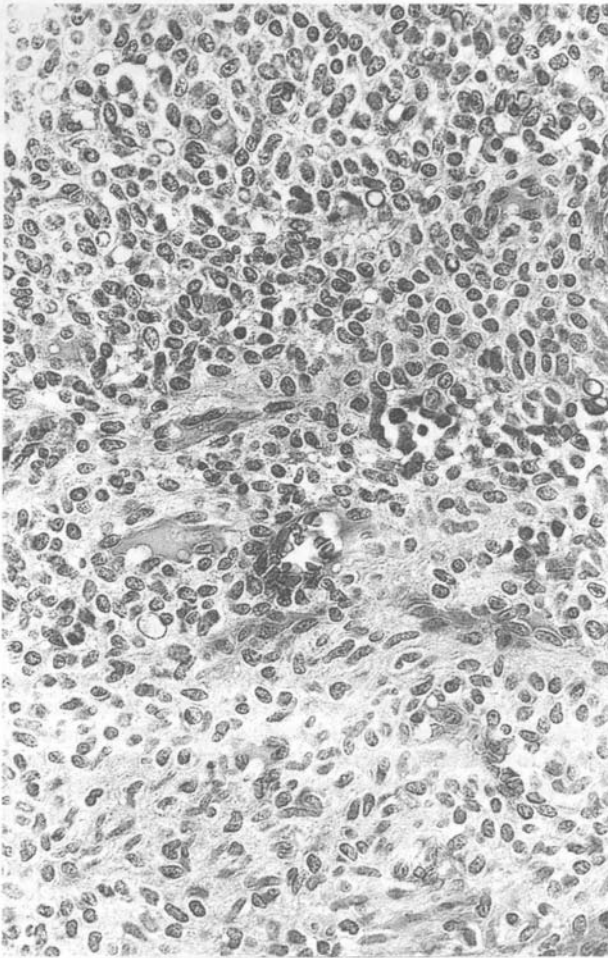


FIG. 2

Confluent area showing distinctive pattern of a glomus cell tumour (Top) and of haemangiopericytoma (Bottom). (H&E; $\times 200$).

nostaining. On electron microscopy, the polygonal cells of the organoid area had dense attachment plaques, a thick basement membrane, and clear cytoplasm containing bundles of fine filaments with dense bodies and pinocytotic vesicles.

Discussion

As both the cells of the glomus and the pericytes of normal vessels express vimentin and specific smooth muscle actin, glomus tumours and haemangiopericytomas are considered to be related. Glomus tumours may represent a well-differentiated form while haemangiopericytomas, in contrast, may be a less differentiated, potentially malignant, form (Schürch *et al.*, 1990). The glomus tumour is recognized by its clear organoid pattern and polygonal cells with ultrastructural and immunohistochemical features of the muscle cells of Sucquet-Hoyer channels; desmin expression is inconstant and limited to a small number of cells (Nuovo *et al.*, 1990), as in our case. Haemangiopericytomas are composed of densely packed fusiform cells immersed in a network of fine, elongated, branched capillaries; the more aggressive neoplasms contain foci of necrosis and more than four mitoses per 10 high power fields. Vascular contractile cell differentiation is not always evident, the most distinctive findings being the presence of delicate cytoplasmic prolongations surrounded by basement membrane, scant fine filaments, and pinocytotic vesicles. Immunohistochemical techniques are usually positive for vimentin only in the main cell population (Schürch *et al.*, 1990).

Our tumour showed areas with optical, immunohistochemical, and ultrastructural findings typical of a glomus tumour in

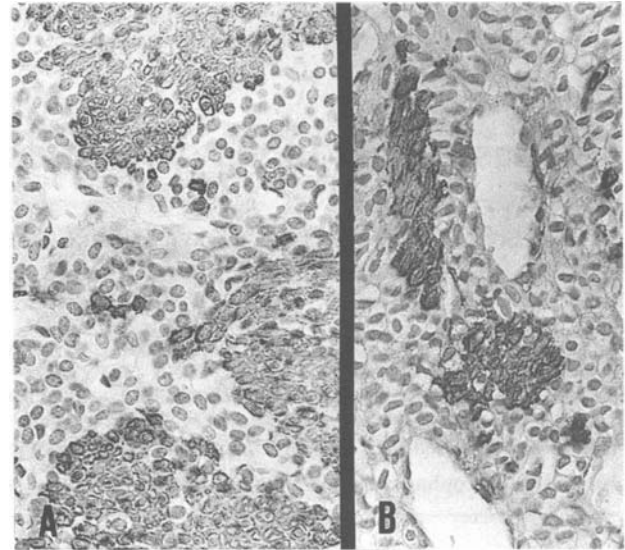


FIG. 3

Immunostaining of actin (A) and desmin (B) filaments in the polygonal cell component. (IPX; $\times 200$).

conjunction with less differentiated areas with haemangiopericytoma-like features. This dual histological pattern has been reported in glomus tumours in other sites (Nuovo *et al.*, 1990) and is the basis of the idea that smooth muscle tumours of the vascular wall have a common origin. Supporting this interpretation are reports of tumours with hybrid cells that express intermediate differentiation between vascular smooth muscle and pericytes (myopericytes) (Dictor *et al.*, 1992), and of benign forms of haemangiopericytoma (haemangiopericytoma-like) that express markers of smooth muscle differentiation (Kapadia *et al.*, 1993). These findings can be interpreted as intermediate forms on the spectrum of differentiation of these vascular muscular tumours.

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