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Oncocytic adenoma of the nasal cavity. A case report

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Summary. The authors present a case of benign oncocytoma (oxyphil cell adenoma) of the nasal cavity in a young woman. This is the fifth case reported in that region. Immunohistochemical stains revealed positivity only for cytokeratin.

Key words: Oncocytoma-Oxyphil cell adenoma-Nasal cavity

Introduction

Oncocytomas (oxyphil cell adenomas) are extremely rare neoplasms, usually arising in the major salivary glands. Some cases have also been described in the kidneys, minor salivary glands, thyroid, hypophysis, ovary and bronchi.

The localization of oncocytomas in the nasal cavity is exceptional. To the best of our knowledge only four cases have been reported (Hamperl, 1962; Cohen and Batsakis, 1968; Spiro et al., 1973). Three of these previously reported oncocytomas of the nasal cavity showed malignant features.

We present a case of nasal vestibule oncocytoma in a young woman. The histological aspect and the clinical behaviour of the tumour were absolutely benign.

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Materials and rnethods

Case history

A 23 year-old woman was referred to the Department of Otolaryngology of the University of Siena. She had noticed the presence of a small painless tumour in her nose for a year. During the last ten days small bleedings followed minor injuries, such as during nose blowing. A firm bluish red lentil-sized tumour was seen in the lower third of the medial wall of the right nasal cavity, at the level of the dermo-mucous junction. A tumour resection was easily performed. No signs of invasion of the cartilaginous nasal wall were present. There was no relapse in the following year.

Technical procedures

The tumour was fixed in 10% neutral-buffered formalin and embedded in paraffin. Sections were stained with hematoxylin-eosin, mucicarmine, PAS, and Masson-Fontana trichrome. Ultrathin sections from paraffin-retrieved and osmicated tissue were also used for electron microscopy, as light microscopy led us to suspect oncocytoma. Immunoperoxidase stains for keratin, desmin, vimentin and rnyoglobin were also performed using Sternberger's (1979) peroxidase-antiperoxidase method.

Results

The microscopic picture of the tumour was very characteristic (Fig. 1). It consisted of lobes and lobules incompletely separated by fibrovascular connective tissue. Within the lobules the cells were arranged in solid sheets or chords sometimes forming tubular or acinar structures.

The large and uniform cells had an abundant, strongly acidophilic cytoplasm with a well-maked polyhedral or rounded contour. The cytoplasms were generally studded with eosinophilic granules. In some cells cytoplasmic granules were PAS positive. Nuclei were rounded, vesicular and often peripherally located. Nuclear irregularity, pleiomorphism and rnitoses were not present. Small, probably degenerative cysts were also present. Stromal component was minimal and composed of thin fibrous septa and numerous enlarged blood vessels. Small groups of lymphocytes occurred throughout the turnour.

In spite of the poor preservation of the cells, a conspicuous hyperplasia of the mitochondria was visible, with electron microscopy, but no further speculation was possible.

Immunohistochemical stains showed strong positivity for keratin (Fig. 2); other reactions were non-informative:

Discussion

This brief article reports an oncocyti'c tumour arising in the nasal cavity and therefore in the seromucous glands.

It has been already demonstrated that oncocytomas may originate frorn seromucous glands (Cohen and Batsakis, **1968).**

On the other hand, oncocytes have been noted not only in major and minor salivary glands, but also in the mucous glands of the esophagus, pharynx, trachea, bronchi, nasal mucosa and in endocrine glands including the thyroid and parathyroid glands (Cohen and Batsakis, **1968).**

Our patient was a very young woman while the four previously reported nasal oncocytornas were in middle-aged or elderly patients.

The histological features and the clinical behaviour of the neoplasm were absolutely benign.

Although originally considered a benign tumour, some examples of malignant oncocytomas, capable of giving rise to local invasion or to remote spread have been reported. In particular three of the four previously reported oncocytomas in the nasal region showed malignant features. Cytologic anaplasia, frequent mitoses, stromal,

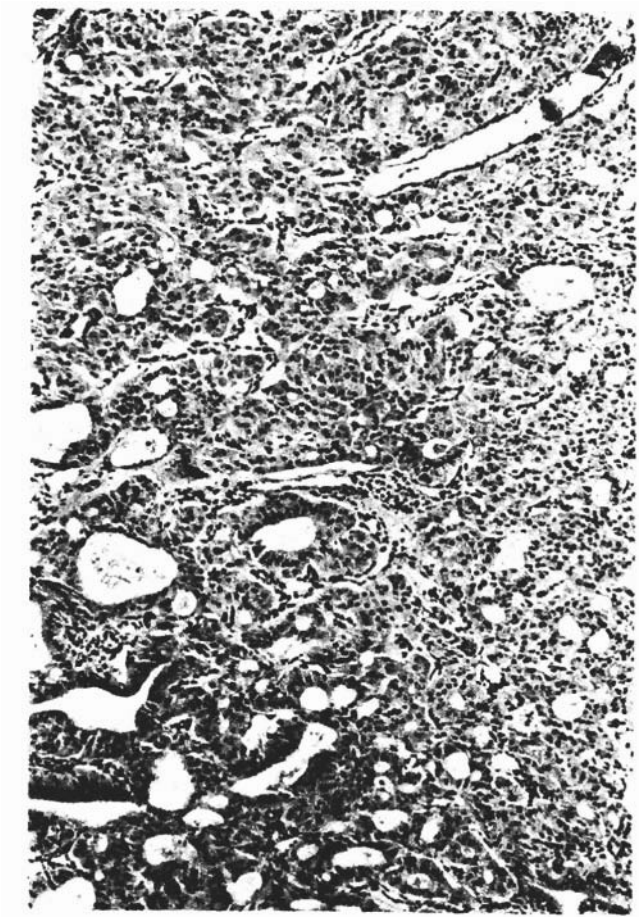

Fig. 1. The neoplastic cells are arranged in solid sheets, cords, tubular and acinar structures. H.E. x *85*

Fig. 2. Irnrnunohistochernical stain. Strong positivity for cytokeratin. x 85

vascular, and capsular invasion, which are considered unequivocal histological evidence of malignancy (Caplan et al., 1984), were not present in this case.

The identification of oncocytomas is often difficult. Acidophilia is not always uniformly and consistently present and is probably related to the number of mitochondria present in the cytoplasm (Ghandur-Mnaymneh, 1984).

When the cells are pale, dark or colloid, as described by Hamperl (1931) it may be difficult to identify them as oncocytes. Special stains are not particularly helpful. Masson trichrome stain is inconsistent and non-diagnostic. Mucicarmine stain is consistently reported to be negative as in our case (Ackerman, 1943; Meza-Chavez, 1949; Stump, 1949; Schafer et al., 1956; Ghandur-Mnaymneh, 1984).

The most reliable method for the identification of the lesion is the ultrastructural demonstration of abundant mitochondria in the cytoplasm (Tandler et al., 1970; Fechner and Bentinck, 1973; Kay and Still, 1973). This is also possible from previously paraffin-ernbedded tissue, as in our case, although finer details are lost.

Oncocytomas represent the neoplastic deviation of the oncocytes. Today, oncocytes are considered to be a special type of epithelial cell with a functional rnitochondrial defect in the form of loose coupling of oxidative phosphorylation, which give origin to the mitochondrial hyperplasia (Hubner et al., 1967; Hubner and Schiefer, 1968; Schiefer et al., 1968).

Since transitional cells between myoepithelial cell elements and oncocytes have been dernonstrated (Hubner et al., 1971), we perforrned irnmunohistochernical reactions in order to investigate the intermediate filaments of the oncocytes. In our turnour only the epithelial rnarker was positive.

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