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Oncocytoma of the nasopharynx

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SUMMARY *The case of a patient with a nasopharyngeal oncocytoma is described. The diagnostic and therapeutic aspects of oncocytoma are reviewed in light of the present literature.*

INTRODUCTION

Since the original description of the oncocyte by Hamperl in 1931, these (myo-)epithelial cells have been reported in the major and minor salivary glands, the epithelium of the respiratory system as well as the thyroid and parathyroid glands, pituitary gland, kidney, adrenal glands and pancreas (Ellis and Gnepp, 1988).

The oncocyte is characterized by a large cell body with a small dense nucleus and a granular, eosinophilic cytoplasm due to mitochondrial hyperplasia. The following submicroscopical criteria have been proposed as diagnostic features of the oncocyte: (1) high level of oxidative enzyme activity; (2) increased number of mitochondria; (3) absence of granules in the mitochondrial matrix; (4) loss of infoldings along basal membranes and the brush border (Tandler et al., 1970; Hastrup et al., 1982; Ellis and Gnepp, 1988; Palmer et al., 1990).

Oncocytes are seldom seen in patients younger than 50 years of age. They increase in frequency between the age of 50 and 70 years, and are almost always present in patients older than 70 years of age (Ellis and Gnepp, 1988).

Oncocytoma is a relatively rare tumour, accounting for less than 1% of all salivary gland neoplasms (Blanck et al., 1970; Palmer et al., 1990). The great majority occurs in the parotid gland, but oncocytomas are also reported in the other major and minor salivary glands, and in the seromucous glands of the respiratory tract (Hamperl, 1962; Schwartz and Feldman, 1969; Dhawan et al., 1970; Blanck et al., 1970; Tandler et al., 1970; Askew et al., 1971; Eneroth, 1971; Mair and Johannessen, 1972; Johns et al., 1973; Gray et al., 1976; Larson and Fechner, 1976; Erlandson and Tandler, 1977; Seifert et al., 1980; Hastrup et al., 1982; Lucas, 1984; Seifert et al., 1986; Ellis and Gnepp, 1988; Palmer et al., 1990; Brandwein and Huvos, 1991; Morin et al., 1991).

In this case report a patient with a nasopharyngeal oncocytoma is described and the diagnostic and therapeutic aspects of the tumour are discussed.

CASE REPORT

A 70-year-old, healthy man visited the Department of Otorhinolaryngology of the University Hospital Ghent, complaining of a nose bleeding from the right nostril. He had no previous history of epistaxis and his general condition was excellent. Routine anterior and posterior rhinoscopy did not reveal the source of the bleeding. Further ENT- and neurological examinations did not show any abnormalities. Nasopharyngoscopy with the flexible endoscope demonstrated a small mucosal lesion in the right part of the nasopharynx. Routine laboratory investigations did not show any abnormalities. Serology for Epstein-Barr virus proved negative. Pure-tone audiometry and tympanometry were within normal limits.

Subsequently, a rigid nasopharyngeal endoscopy was performed under local anaesthesia. A small polypoid tumour with intact mucosal appearance was observed on the right side of the nasopharyngeal posterior wall adjacent to the pharyngeal orifice of the Eustachian tube. The tumour was excised, and upon histological examination the specimen showed cuboidal or cylindrical cells with a granular, eosinophilic cytoplasm, which is characteristic for oncocytes (Figure 1).

Computed tomography of the nasopharynx did not show any signs of invasive growth of the tumour. Magnetic resonance imaging of the same area showed no infiltration into the surrounding tissues and no signs of cervical lymphadenopathy.

Transmission electron microscopy following a second biopsy demonstrated normal respiratory mucosa of the nasopharyngeal tract, indicating complete removal of the tumour. Frequent local and regional controls during the follow-up period of one year did not reveal recurrence of the tumour.

DISCUSSION

Oncocytic lesions of the nasopharynx have been rarely described in literature (Larson and Fechner, 1976; Erlandson and Tandler, 1977; Morin et al., 1991). Two cases of

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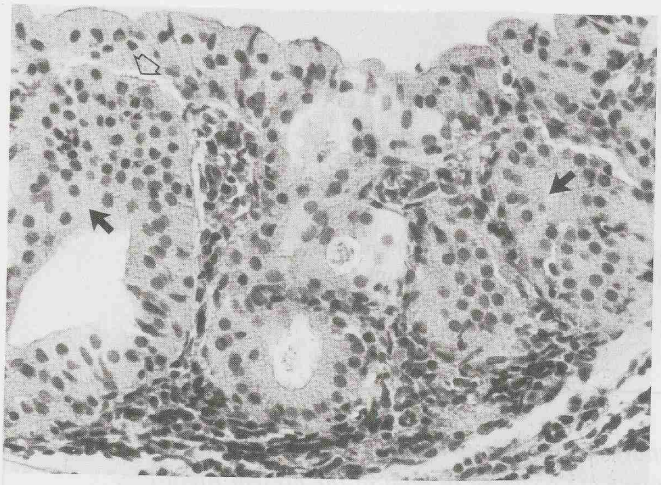

Figure 1. Oncocytoma: The tumour consists of tubular arranged oncocytes with abundant, fine granular cytoplasm (closed arrow) and regular nuclei. At the upper part microcyst formation (open arrow) is observed (× 400).

oncocytic hyperplasia have been reported after a random biopsy of the nasopharynx (Larson and Fechner, 1976; Erlandson and Tandler, 1977). Morin et al. (1991) have reviewed thirty-three cases of oncocytic lesions in the pharynx and found a morphological spectrum of oncocytic changes including three cases of nasopharyngeal oncocytoma. Recently, a further classification of oncocytic changes in tissues has been proposed using histological diagnostic criteria (Palmer et al., 1990). The principal oncocytic lesions are classified as follows: (1) multifocal nodular oncocytic hyperplasia (MNOH); (2) diffuse oncocytosis; (3) oncocytoma in combination with MNOH; (4) oncocytoma; (5) pleomorphic adenoma with oncocytic change; and (6) monomorphic adenoma with oncocytic change.

Oncocytoma is most frequently found in the older age group, ranging from 60–77 years (Hamperl, 1962; Eneroth, 1971; Hastrup et al., 1982; Palmer et al., 1990). Palmer et al. (1990) have described a progressive gradation of the mean ages of MNOH, oncocytoma with MNOH, and solitary oncocytoma. This observation suggests that some cases of oncocytoma may arise from one of the nodules of oncocytic cells in MNOH. The incidence in females is slightly higher, but does not appear to be significant (Hamperl, 1962; Eneroth, 1971; Ellis and Gnepp, 1988; Hastrup et al., 1982). In general, the tumour has a unilateral localization, although bilateral growth has been reported (Blanck et al., 1970; Brandwein and Huvos, 1991).

Oncocytomas of the major salivary glands have a nodular and well-encapsulated appearance while tumours arising from the minor salivary glands are less demarcated; oncocytomas from the minor salivary glands in the nose and paranasal sinus have a tendency to destructively invade the surrounding tissues (Ellis and Gnepp, 1988). Oncocytomas are considered benign neoplasms, although a few cases of malignant oncocytoma have been reported earlier, based on the presence of atypical cytological features, capsular infiltration and local infiltrative growth (Mair and Johannessen, 1972; Gray et al., 1976). As mentioned earlier, the histological diagnosis is based on the demonstration of granular, eosinophilic cytoplasm due to an increased number of mitochondria. Histochemistry or electron microscopy are mandatory to demonstrate the mitochondrial hyperplasia, which is specific for the diagnosis of oncocytoma.

The only adequate treatment of oncocytoma is surgical excision, because the tumour is radio-resistent. A superficial parotidectomy with preservation of the facial nerve is indicated in the majority of cases located in the superficial lobe of the parotid gland. Oncocytomas of the minor salivary glands are treated by local excision of the tumour. Brandwein and Huvos (1991) reported in a long-term, follow-up study of 44 patients with oncocytic tumours of the major salivary glands a local-recurrence rate of 10%. Either oncocytosis of the remaining salivary gland or tumour left behind during surgery were regarded to be responsible for the recurrence. In another study of 26 cases local recurrence of oncocytoma is only reported after incomplete excision of the primary tumour (Palmer et al., 1990).

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