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Case Report

Oncocytoma: a mystifying parotid mass

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ABSTRACT

Parotid oncocytoma presents in less than 1% of salivary gland tumors. Therefore, there are only very few reported cases in literature. This tumor is often diagnosed in elderly age group. It is often misdiagnosed clinically as pleomorphic adenoma, hemangioma or Warthin's tumor. CT imaging usually shows an enhancing lobulated mass; however, it cannot exactly diagnose oncocytoma. It can be confirmed only by histopathological examination. This case report is of an Indian female of 66 years with parotid swelling who underwent total conservative parotidectomy. Post operatively, patient has no residual disease and complications.

Keywords: Parotid, Oncocytoma, Rare salivary gland tumor

INTRODUCTION

Oncocytoma are benign epithelial tumors which are more common in women and occur commonly during 6th to 8th decade of life. The most common clinical presentation would be that of a slow growing painless solitary mass which is mobile, firm and multilobulated.[1] These tumors are usually unilateral, but bilateral incidence of around 7% was also reported.[2] It is difficult to diagnose oncocytoma clinically because of the absence of characteristic imaging and clinical findings. Imaging modalities like CT and MRI may show well enhancing mass, but a diagnosis of oncocytoma is rare as there are no specific and peculiar imaging features. Histopathological examination is the best way to diagnose oncocytoma. As per the new World Health Organisation (WHO) classification, it is classified into three types, namely oncocytosis, oncocytoma and oncocytic carcinoma.[3] Treatment of oncocytoma of parotid gland is surgical, based on the location and extend of the tumor, it is either superficial or total parotidectomy.[4]

CASE REPORT

A 66 year old Indian female patient presented to Head & Neck Surgery and Plastic Surgery outpatient department with a swelling in the right parotid region for 3 months. It was a painless swelling increasing in size since last 3 months. Patient had no other significant history. On examination, a solitary 4×3 cm sized mass in the right parotid region posterior to angle of mandible. It was non tender, non-fluctuant, non-pulsatile soft swelling, not adherent to overlying skin and underlying structures, margins were regular. No signs of facial palsy were seen. On CECT (Contrast enhanced computed tomography) (Figure 1), a well-defined enhancing lobulated mass lesion in the superficial and deep lobe of right parotid was seen which according to radiologist could be benign parotid neoplasm either a pleomorphic adenoma or Warthin's tumor. Based on the above findings, a provisional diagnosis of pleomorphic adenoma with differential diagnosis of Warthin's tumor was made and patient worked up for total conservative parotidectomy. Intra operatively the tumor looked reddish brown in colour (Figure 2), soft in consistency and multilobulated.

The colour and texture was similar to hemangioma. Total parotidectomy was done with preservation of facial nerve. Excised mass was sent for histopathological examination which confirmed it as oncocytoma. Post-operative period was uneventful.

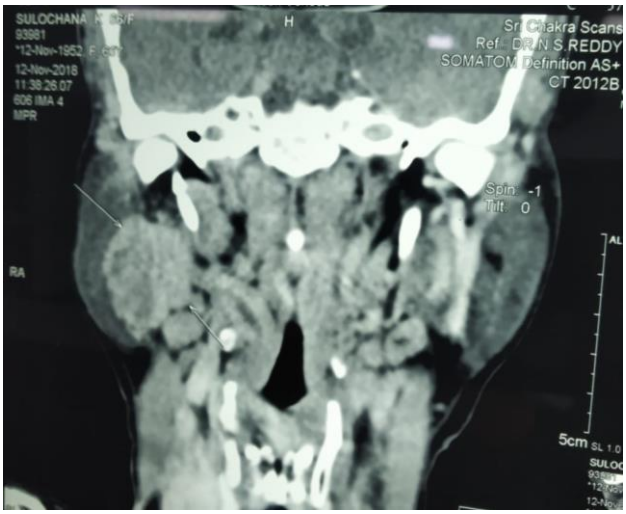

Figure 1: CECT (arrow showing a well defined enhancing lobulated mass).

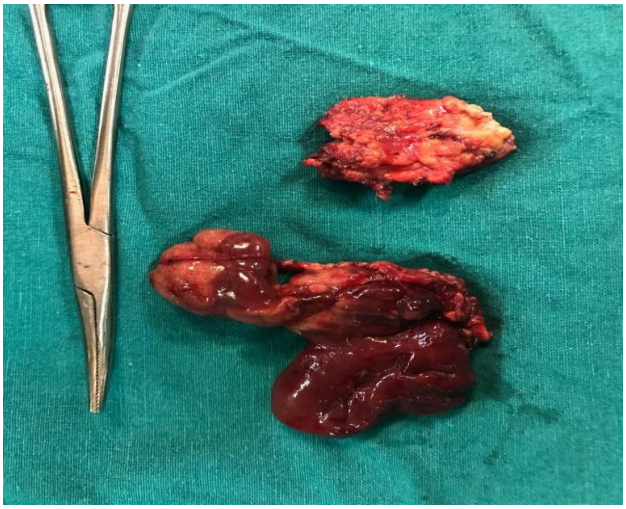

Figure 2: Specimen image.

Pathological findings

Grossly the parotidectomy specimen measuring 6×4.5×2.5 cms. Cut section shows a partly circumscribed brownish tumor measuring 3×2.5×2.5 cms. Microscopically, (Figure 3) section studied show neoplasm composed of uniform polygonal cells with central vesicular nuclei having abundant granular eosinophilic cytoplasm. The cells are arranged in sheets and broad trabeculae separated by thin fibro vascular stroma. There are occasional foci showing clear cells in acinar pattern. No mitotic figure noted. No evidence of malignancy seen.

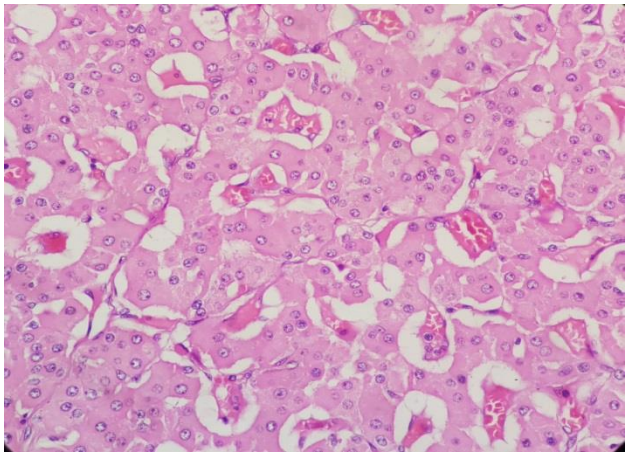

Figure 3: Histopathology (uniform polygonal cells with central vesicular nuclei having abundant granular eosinophilic cytoplasm arranged in sheets and broad trabeculae separated by thin fibro vascular stroma with no mitotic figure).

DISCUSSION

Oncocytes are epithelial cells. These appear as cells which have abundant granular, eosinophilic cytoplasm and a centrally pyknotic nucleus. These are ultra-structurally packed with numerous mitochondria of various sizes. Oncocytes are seen in various organs like salivary glands, thyroid, parathyroid, pituitary, nasal cavities, sinuses, ocular caruncle, lacrimal glands, buccal mucosa, Eustachian tube, larynx, esophagus and organs like liver, pancreas and kidney.[5,6] World Health Organization (WHO) classification of salivary gland neoplasms consists of oncocytosis, oncocytoma and oncocytic carcinoma. Oncocytic carcinomas are rarer than oncocytomas.[6] Capone et al in their review of 21 oncocytic neoplasm, Oncocytoma as the most frequent morphology (62%), followed by oncocytosis (28.5%) and oncocytic carcinoma (9.5%).[7]

The tumors which are histologically composed of monotonous sheets of oncocytes were first termed "Oncocytoma" by Jaffe in 1932.[7] Oncocytomas are also called as oncocytic adenoma or oxyphilic adenoma.[4] They are rare tumors comprise of less than 1% of all salivary gland neoplasms.[5]

Oncocytomas usually occur in the elderly and 80% of time, it affects the parotid gland. Pathologically, oncocytoma is described as a well circumscribed mass, composed of layer of oncocytes (small round nucleus, microgranular, eosinophilic cytoplasm). Pathogenesis is quite obscure, although mitochondrial functional defects are believed to mediate the progressive degeneration of the salivary epithelial cells.[7] Only one mitochondrial DNA rearrangement has been linked to parotid tumorogenesis.[8] Tandler et al revealed by electron microscopy that the oncocytes contained unusually large number of mitochondria.[9] Oncocytic cells are considered

as metaplastic cells formed in response to adverse changes, with the normal cells losing their original specialization.[6] Ageing causes a physiological depletion of mitochondrial enzymes, and a recompense hyperplasia of mitochondria which may be responsible for the oncocytic change. Solitary oncocytes appear as incidental findings in aging salivary tissue, with studies showing up to 80% in patients older than 70 years of age.[5] In our case, the age of patient was 66 years which point towards the progressive degeneration of salivary epithelium and could have led to oncocytic changes.

The sensitivity of FNAC is reported to be around 29%.[7] So in our hospital, we do imaging by CT (computerised tomography) scan followed by superficial parotidectomy instead of FNAC for a better tissue diagnosis. Due to focal sampling of the lesion, it may be very difficult to diagnose, as oncocytic changes can occur in a range of conditions either neoplastic or non-neoplastic.

Oncocytomas do not have reliable distinguishing features on a CT scan or an Ultra sonogram of the parotid. In our case, CECT showed well defined enhancing lobulated mass with which we considered a differential diagnosis of pleomorphic adenoma or a Warthin's tumor. Oncocytomas have very similar imaging features as that of Warthin's tumor and hence not able to differentiate each other by CT scan.[10]

Intra operatively, the tumor was multilobulated, brownish red in colour and was soft which had a similarity to that of hemangioma in the gross appearance.

Surgical management with either a radical or superficial parotidectomy depending on the location of the tumor is the key treatment strategy.[7] In our case, we removed the tumor by total parotidectomy and preserving the facial nerve. Patient recovered well in the post-operative period with no facial nerve palsy.

CONCLUSION

Oncocytoma of parotid gland being a rare tumor and the absence of characteristic imaging and clinical features makes the diagnosis difficult. Histopathological examination is warranted to confirm the diagnosis. Intraoperatively, the tumor may mislead surgeon as a hemangioma. Treatment of choice for such tumors is either a superficial or total parotidectomy based on the location and extend of tumor. Since it is a less aggressive neoplasm, there is no need for adjuvant therapy.

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