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Case Report

Oncocytoma of the Parotid Gland: Cytohistopathological Diagnosis with Brief Review of the Literature

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ABSTRACT

Oncocytic neoplasms comprise a group of rare tumors of the parotid glands, constitutes 0.4% to 1% of all salivary tumors. Histologically they are classified according to the new World Health Organization (WHO) classification in three distinct names, namely Oncocytosis, Oncocytoma and Oncocytic carcinoma. We herein describe the case of a 45 year old male patient of Right Parotid Oncocytoma, clinically suspected as Pleomorphic Adenoma.
Key Words: Oncocytoma, Parotid gland, Salivary tumors.

INTRODUCTION

Salivary gland tumors constitute a heterogeneous group of lesions of a great morphological variation. The most common location of the salivary gland tumors is the parotid gland, occurring in 64% to 80% of the cases. [1] Oncocytoma is an extremely rare, benign parotid gland tumor, accounts for about 0.4% to 1% of all salivary gland neoplasms. [2] Oncocytoma occurs most commonly in the 6-8th decade with a mean age of 58 years. There is no sex predilection. [3] Regarding etiology of the tumor concerns, approximately 20% of all the patients will have a history of radiation therapy to the face or upper torso [3] or history of chronic HBV infection. [4]

We herein describe the case as a 45 year old male patient of Right Parotid Oncocytoma, without any history of HBV infection/radiation therapy. The lesion was clinically diagnosed as Pleomorphic Adenoma of Right Parotid gland.

CASE REPORT

A 45 year old male came to the surgical OPD of our hospital with chief complaints of Right Parotid Swelling since 3 months. The swelling was gradual increase in size and not associated with fever or chills. There was no facial asymmetry,

parasthesia, regional lymphadenopathy or pain. There was no past history of radiation therapy or any viral infection. Local examination revealed well circumscribed, rounded, firm mass measuring 6x5x3cm in Right Parotid region. There was no redness/tenderness of overlying skin. Fine needle aspiration cytology (FNAC) of the mass was carried out revealed clusters of polygonal cells having central regular nuclei with abundant pale granular eosinophilic cytoplasm. There was absent of lymphocytes and cellular debris in the background (Figure 1). Cytological diagnosis of oncocytoma was offered. All the hematological, biochemical and serological investigations were within normal limit. Patient underwent right sided total parotidectomy. Post operative period was uneventful.

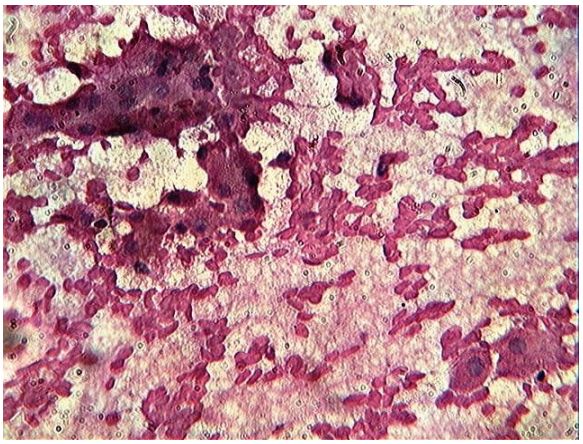

Figure 1: Cytological features of oncocytoma showing clusters of polygonal cells having central regular nuclei with abundant pale granular eosinophilic cytoplasm. (H&E, x400)

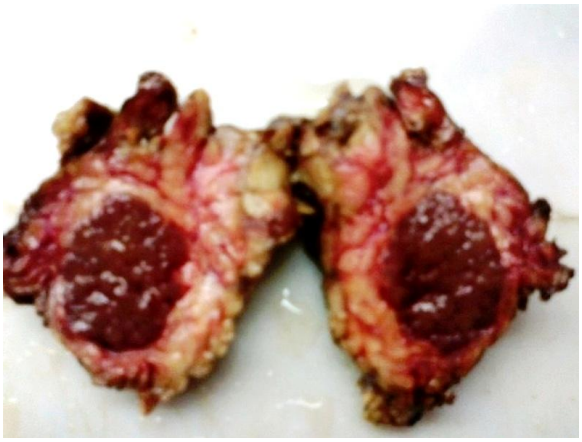

Figure 2: Cut section of parotidectomy showing characteristic circumscribed nodular mahogany brown mass (oncocytoma).

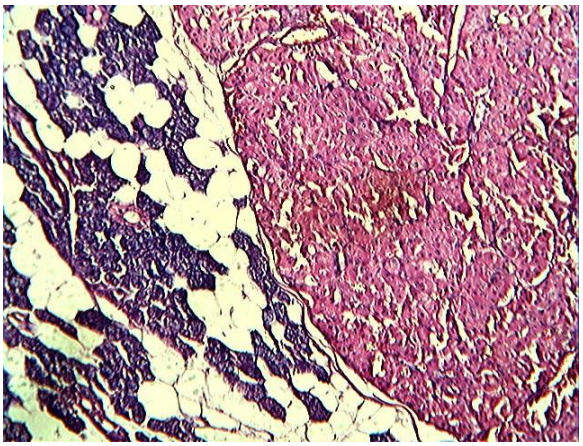

Figure 3: Photomicrograph showed parotid gland with well circumscribed tumor. (H&E, x100).

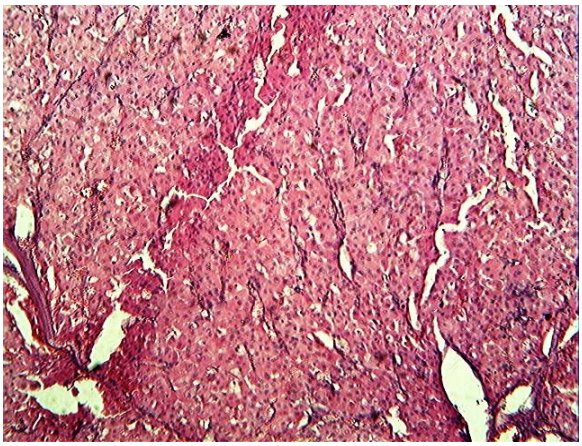

Figure 4: Photomicrograph showed neoplastic cells arranged in solid sheets, nests, columns/cords and separated by fibrovascular network. (H&E, x100).

Grossly, we received parotidectomy specimen measures 6x4x2cms. External surface was well circumscribed and showed congested blood vessels. On cutting open showed a circumscribed, lobular mahogany brown mass measuring 2.8x2cms (Figure 2). Rest of the parotid gland was unremarkable.

Light microscopic examination showed parotid gland along with a well circumscribed tumor (Figure 3). Tumor composed of neoplastic cells cell arranged in solid sheets, nests, alveoli, columns or cords and separated by delicate fibrovascular network (Figure 4). Individual tumor cells were large, polygonal having round vesicular central nuclei with prominent nucleoli and abundant dense, granular eosinophilic cytoplasm (Figure 5). Focal pleomorphism was seen, but mitotic activity, tumor necrosis and invasive growth were not evident. According to these findings the final diagnosis was given as Oncocytoma of the parotid gland.

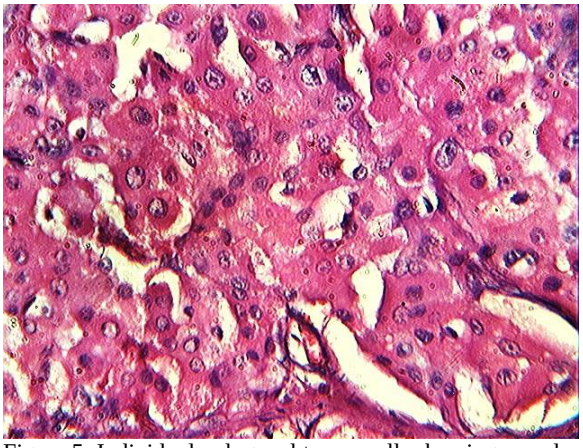

Figure 5: Individual polygonal tumor cells showing round central vesicular nuclei with prominent nucleoli and abundant dense granular eosinophilic cytoplasm. (H&E, x400).

DISCUSSION

Oncocytomas are uncommon tumors of the salivary gland. They are defined as benign tumor of salivary gland origin composed exclusively of large epithelial cells with characteristic bright eosinophilic granular cytoplasm (oncocytic cell). [3] Among oncocytic major salivary gland tumors, 84% occur in the parotid (male to female ratio 1:1) and the remainder arises in the submandibular gland. Minor salivary gland sites include the lower lip, palate, pharynx and buccal mucosa. [3]

Hamperl is considered to be the "Father of Oncocytes". He designated "Oncocyte" (from Greek onkosthai - swollen and cytos - cell) as a special type of epithelial cell characterized by a larger than the original cell, with a mitochondria rich dense cytoplasm containing acidophilic granules. [5] The diagnosis can be confirmed by both light and electron microscopic identification of mitochondrial differentiation. [6, 7]

Oncocytoma has a peak incidence in the 7^{th} – 9^{th} decades of life and are rare in patients younger than 50 years. [7] There is no sex predilection. [3, 4] In this presented case, the patient was 45 year old male.

On gross examination, oncocytoma are usually 3-4cm in size, possess a well-defined capsule and have characteristic light brown mahogany color. [4] These findings were seen in our case.

Oncocytic Metaplasia in the parotid gland is an aging-related process. The percentage of the population with focal oncocytosis increases with age until nearly universal in the population over the age of 70 years. [8] Oncocytic cells in salivary glands can be categorized as oncocytic metaplasia (oncocytosis), nodular oncocytic hyperplasia and oncocytoma. [7] Brandwein and Huvos [9] defined oncocytoma as a single nodular mass with monotonous appearance, and nodular oncocytic hyperplasia as two or more distinct tumor nodules. They are less organized and circumscribed than oncocytoma as per Hartwick and Batsakis. [10]

Regarding differential diagnosis of oncocytoma, acinic cell carcinoma, clear cell carcinoma, Warthin's tumor, mucoepidermoid carcinoma with prominent clear cell and pleomorphic adenoma will be considered. Acinic cell carcinoma however is the main differential diagnosis. [11] Mainly various patterns of arrangement of tumor cells with eccentrically located nuclei

and abundant pale basophilic cytoplasm of neoplastic acinar cells differentiate it from oncocytoma. Oncocytoma has centrally located nuclei with granular eosinophilic cytoplasm with monomorphic polygonal cells. [3, 4]

Rarely, oncocytoma have clear cells in addition to eosinophilic cells, poses differentials. [4] They can be distinguished on light microscopy. Mixed tumour as pleomorphic adenoma can easily be differentiated on FNAC/biopsy; as in our case. Oncocytomas clinical behavior is generally benign. Complete surgical excision is the treatment of choice. [3] Radiotherapy is not indicated as oncocytes are radioresistant. [3] Local recurrence of an oncocytoma is extremely rare, but when it occurs, it may be due to incomplete excision, multifocality and bilateral nature. [3] There have been rare examples of malignant oncocytic tumors and the criteria for malignancy includes capsular invasion, destructive growth, necrosis, increased pleomorphism, lymphatic or distant metastasis, vascular/neural invasion and mitotic figures etc. [3, 11] All the features were absent in our case.

In the present case, the 45 year old male patient came with the clinical diagnosis of pleomorphic adenoma of the salivary gland. FNAC and excisional biopsy confirmed as oncocytoma with characteristic mahogany brown nodule on gross specimen. Total parotidectomy was performed and the patient is doing well without recurrence at regular follow up.

CONCLUSION

Oncocytic neoplasms should be considered as a possible diagnosis in patients with parotid enlargement. Due to lack of large case series, a single case reported in the literature may lead to better understanding of this rare disease and differentiate it from other conditions for proper management of the patient.

REFERENCES

1. Camara AC,Kelner N, Kauffman CMF,Lima KP,Henriques ACG, Lisboa de Castro JF. Oncocyoma of an Intramural minor salivary gland: Case report and review of literature. Applied cancer research. 2005; 25(2) : 90-92.
2. Carlsoo B, Dorveiji S, Helander HF. A quantitative ultrastructural study of a parotid oncocytoma. Arch Pathol Lab Med. 1979; 103: 471.
3. Huvos AG. Oncytoma .In : Barnes L, Eveson JW, Reichart P, Sidransky (edi). World health organization classification of tumours. Head and neck tumours. IARC press, Lyon (France). 2005 : 266
4. Vlachaki E, Tsapas A, Dimitrakopoulos K , Kontzoglou G and Klonizakis I. Parotid gland oncocytoma : A case report. Cases Journal . 2009 ; 2 ; 6423
5. Hamperl H . Benign and malignant oncocytoma . Cancer.1962 ; 15 : 19-27
6. Vilmaz N, Gonulol E , Bereket MC, Karukas C and Temiz P. An unknown benign tumour of oral minor salivary gland : A case of oncocytoma . J Dent Fac Ataturk Uni. 2011 ; suppl 4; 77-79.
7. Auclair PL, Ellis GL, Stanley MW. Major and minor salivary glands . In : Silverberg SG , Delellis RA,Fruble WS, Livolsi VA, Wick MR (edi).Silverberg's principles and practice of surgical pathology and cytopathology . Vol 1, 4th ed. Churchill Livingstone pub. 2006.1223 -25.

8. Change A,Haruwi SJ. Oncocytes, oncocytosis and oncocytic tumours . Pathol Annu . 1992 ;27(1) : 263-304
9. Bradwein MS, Huvos AG. Oncocytic tumors of major salivary gland. A study of 68 cases with follow up of 44 patients. Am J Surg Pathol . 1991;15 : 514-528.
10. Hartwick RW , Batsakis JG. Non-Warthin's tumour oncocytic lesions. Ann Otol Rhinol Larygol. 1990 ; 99 : 674-677.
11. Thompson LD, Wenig BM, Ellis GL . Oncocytomas of the submandibular gland . A series of 22 cases and a review of the literature. Cancer. 1996 ;78(11):2281-87.

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