



Case Report

Oncocytoma of parotid gland: A rare case report

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Abstract

Oncocytomas are benign salivary gland tumors composed of oncocytes, cuboidal to columnar epithelial cells with abundant eosinophilic cytoplasm secondary to the accumulation of excessive number of mitochondria. In 1894, the German pathologist Hurthle first described these granular cells in normal canine thyroid glands, while the term "Oncocyte" was coined by Hamperl in 1931. Fine Needle Aspiration Cytology (FNAC) has increasingly been used as a primary screening tool for salivary gland lesions with high levels of sensitivity and specificity. However, caution should be exercised when interpreting aspirates with predominant oncocytic population. Final diagnosis is assisted by CT and/or magnetic resonance imaging (MRI) of the neck and histopathologic examination.

Key words

Fine needle aspiration cytology, Oncocytomas, salivary gland tumors.

Introduction

Oncocytic neoplasms encompass a group of rare tumors of the parotid glands, and their incidence represents approximately 1% of parotid neoplasms [1]. Oncocytomas are benign salivary gland tumors composed of oncocytes, cuboidal to columnar epithelial cells with abundant eosinophilic cytoplasm secondary to the accumulation of excessive number of mitochondria. Majority of cases favored an older population for this rarity, most often after the

sixth decade [2]. The clinical presentation is similar to other benign salivary gland tumors, that of a slow growing, non tender firm submandibular mass. Fine needle aspiration (FNA) smears of oncocytic neoplasms reveal cohesive clusters of cells more often in papillary fragments with granular cytoplasm. Here, we have presented case of 74 years old male patient with left parotid oncocytoma.

Case report

A 70 years old male presented with a gradually increasing painless swelling in the region for the past 1 year. It had an insidious onset and was progressive in nature with no history of associated pain. The swelling did not resolve following a course of antibiotics. Physical examination revealed a 3X3.5 cm firm non-tender mass in the parotid region which was mobile and the overlying skin was unaffected. There was no lymphadenopathy noted. Computed tomography (CT) of the parotid glands, neck and thorax revealed a mass in the left parotid gland (maximum diameter 3.7 cm). The patient was referred to the Pathology Department for fine needle aspiration cytology (FNAC), which was performed using a 22-gauge needle attached to a 10 ml syringe [3, 4, 5, 6]. Blood mixed particulate material was obtained, air dried and 95% ethanol fixed smears were made [7, 8, 9] and stained with Giemsa, Haematoxylin and Eosin and Papanicolaou techniques, respectively. On cytological examination, the smears showed moderate cellularity which composed of epithelial cell clusters. The individual cells consisted of an exclusive population of oncocytic cells seen in sheets and papillary clusters along with abundant single cells. **(Photo - 1, Photo - 2, Photo - 3)** There was also presence of moderate to abundant densely stained granular cytoplasm with round nuclei and nucleoli. A cytological diagnosis of Oncocytoma of parotid gland was made.

Discussion

Oncocytes are epithelial cells having abundant, granular, eosinophilic cytoplasm, a central pyknotic nucleus. Ultrastructurally, they are crammed with numerous mitochondria of various sizes. In 1894, the German pathologist Hurthle first described these granular cells in

normal canine thyroid glands, while the term "Oncocyte" was coined by Hamperl in 1931 [10].

Photo - 1: Moderate cellularity smears of oncocytic cells. (H & E Stain, 10X)

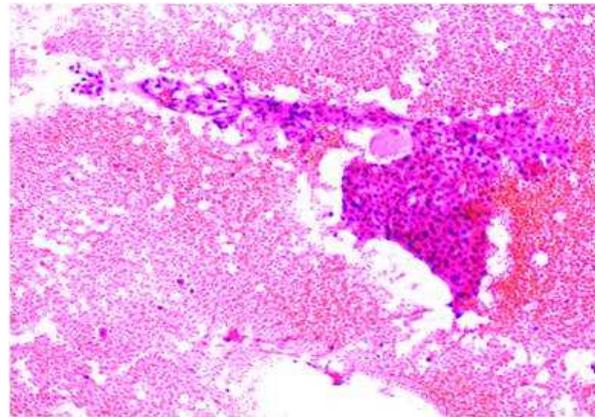


Photo - 2: Cohesive clusters of oncocytes. (H & E Stain, 40X)

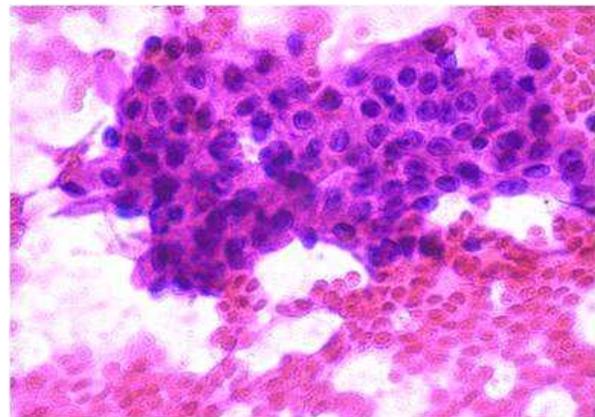
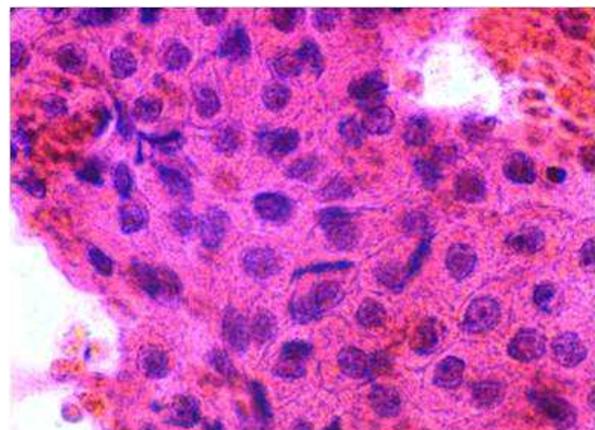


Photo - 3: Oncocytes with granular, eosinophilic cytoplasm. (H & E Stain, 60X)





Oncocytes can be seen in various tissues and a variety of conditions ranging from hyperplastic changes to malignant conditions. Various organs show presence of oncocytes 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 [10, 11].

Oncocytomas of salivary glands most commonly involve the parotid gland (82%) and the rest are located at the submandibular gland and minor salivary glands. They are typically tumors of older adults with a peak incidence at the 8th decade. In our case also the patient was having age of 74 years.

Fine needle aspiration cytology (FNAC) has increasingly been used as a primary screening tool for salivary gland lesions with high levels of sensitivity and specificity. However, as salivary glands are notorious for having overlapping morphological features, diagnosis by cytology alone often becomes difficult [10]. The situation can improve by using multiple passes from the swelling.

Oncocytes may be seen in a variety of non-neoplastic and neoplastic conditions, ranging from normal glands of elderly individuals to tumors such as papillary cystadenoma lymphomatosum (Wharthin's tumor-WT) oncocytoma and oncocytic carcinoma [12]. Cells with oncocytic features may also be seen in tumors such as pleomorphic adenoma, mucoepidermoid carcinoma and rarely acinic cell tumors, salivary duct carcinoma and the uncommon oncocytic papillary cystadenoma [12].

The main differential diagnosis of oncocytoma is WT specifically when aspiration with predominant oncocytes in WT. In oncocytoma, the epithelial cells are in sheets and papillary

clusters with an attempt at acinus formation, [13, 14] little or no lymphoid cells, single cells are seen in greater abundance. WT on the other hand shows epithelial cells mostly oncocytic, in sheets with occasional papillary fragments, single cells are scarce and variable amount of lymphoid component is present [14].

Differentiating oncocytoma from oncocytic carcinoma can be difficult on cytology as the former can appear cytologically malignant looking, while the latter can look deceptively monomorphic for which the term "oncocytic neoplasm" is preferred on cytology smears. Differentiating oncocytosis from oncocytoma on cytology is difficult, and on some occasions, even impossible [15].

The accuracy rate for the diagnosis of oncocytoma on FNAC material is high about 92%, however caution should be taken when interpreting aspirates with predominant oncocytic population. Benign and reactive oncocytes show prominent, eosinophilic nucleoli along with pleomorphism and this should not be mistaken for malignancy. Fine needle aspiration is the procedure of choice for making a diagnosis in the majority of cases. Rarity of the disease, sampling error, and lack of interpreter experience are account for majority of pitfalls. Diagnosis is assisted by CT and/or magnetic resonance imaging (MRI) of the neck, although histopathologic confirmation is necessary.

Conclusion

The diagnosis of oncocytomas can be made without any difficulties. However, a diagnostic challenge can arise when extensive oncocytic metaplasia occurs in other salivary gland tumors. Awareness of the fine microscopic details of these lesions coupled to the utilization of ancillary procedures may avoid misdiagnosis.



References

1. Stomeo F, Meloni F, Bozzo C, Fois V, Pastore A. Bilateral oncocytoma of the parotid gland. *Acta Otolaryngol*, 2006; 126: 324-326.
2. K R V Sakthikumar, Mohanty S, Dineshkumar K. Solitary Oncocytoma of the submandibular salivary gland in an adolescent female: A case report. *Indian J of Otolaryngol. Head Neck Surg*, 2007; 59: 171-173.
3. Rathod GB, Ghadiya V, Shinde P, Tandan RK. Pleomorphic sarcoma in 60 years old male – A case report. *International Journal of Current Microbiology and Applied Sciences*, 2014; 3(8): 510-517.
4. Gunvanti Rathod, Pragnesh Parmar, Sangita Rathod, Ashish Parikh. Suprascapular malignant fibrous histiocytoma – A case report. *Discovery*, 2014, 12(31): 50-53.
5. Rathod GB, Goyal R, Bhimani RK, Goswami SS. Metaplastic carcinoma of breast in 65 years old female - A case report. *Medical Science*, 2014; 10(39): 77-81.
6. Disha Singla, Gunvanti Rathod. Cytodiagnosis of renal cell carcinoma – A case report. *IAIM*, 2015; 2(2): 133-137.
7. Gunvanti Rathod, Pragnesh Parmar. Fine needle aspiration cytology of swellings of head and neck region. *Indian Journal of Medical Sciences*, 2012; 66: 49-54.
8. Gunvanti Rathod, Sangita Rathod, Pragnesh Parmar, Ashish Parikh. Diagnostic efficacy of fine needle aspiration cytology in cervical lymphadenopathy – A one year study. *International Journal of Medical and Pharmaceutical Sciences*, 2014; 4(5): 1-8.
9. Mobeen Alwani, Gunvanti B. Rathod. Diagnosis of anaplastic thyroid carcinoma on fine needle aspiration cytology - A rare case report. *IAIM*, 2015; 2(3): 183-187.
10. Prabakaran SS, Chen F, Aguirre A. Oncocytoma of the parotid gland and its mimickers; A comprehensive review. *NAJMS*, 2010; 3: 171-180.
11. Kontaxis A, Zanarotti U, Kainz J, Beham A. Diffuse hyperplastic oncocytosis of the parotid gland. *Laryngorhinootologie*, 2004; 83: 185-8.
12. Austin MB, Frierson HF jr, Feldman PS. Oncocytoid adenocarcinoma of the parotid gland: Cytologic, histologic and ultrastructural findings. *Acta Cytol*, 1987; 31: 351-356.
13. P Mukunyadzi. Review of fine needle aspiration cytology of salivary gland neoplasms, with emphasis on differential diagnosis. *Am J Clin Pathol*, 2002; 118(1): 100-115.
14. Verma K, Kapila K. Salivary gland tumors with a prominent oncocytic component. Cytological findings and differential diagnosis of oncocytomas and Wharthin's tumor on Fine needle aspirates. *Acta Cytol*, 2003; 47: 221-226.
15. Young JA, Warfield AT. The salivary glands. In: Gray W, McKee GT, editors. *Diagnostic cytopathology*. 2nd edition, London: Churchill Livingstone; 2003, p. 305-23.

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