

Letter to Editor

Amylase Crystalloids In Parotid Salivary Gland Swelling On Fine Needle Aspiration Cytology

Dear Editor,

Cysts in the upper neck region yielding fluid on aspiration are frequently given nonspecific reports on cytological examination. Noncellular structures may sometimes give a clue regarding their site of origin. We report here a case of a 60 year-old female patient with history of swelling in the left parotid region since 3 days. History of fever and pain since 1 day. No history of cough, pain during swallowing or increased salivation. She was referred for fine needle aspiration (FNA) of a nodular swelling in the left parotid region for the diagnosis. Clinical Examination revealed a lemon -sized, firm nodule measuring 3x 2cm from which 2ml of yellowish, clear fluid was aspirated using 27 gauge needle. Smears were wet-fixed for Papanicolaou's (Pap) staining and Haematoxylin and Eosin as well as air-dried for Giemsa staining. The crystals appeared orange coloured in PAP stain and pink in H & E (fig 2) . On Giemsa stain the crystals appeared deep blue (Fig 1) . The present case showed cellular smears showing rectangular shaped non-birefringent crystalloids. Also seen were benign ductal epithelial cells and squamous metaplastic cells. Background showed abundant neutrophils admixed with occasional lymphocytes. So a diagnosis of Acute on chronic Sialadenitis was made. For definitive diagnosis histopathology examination is required.

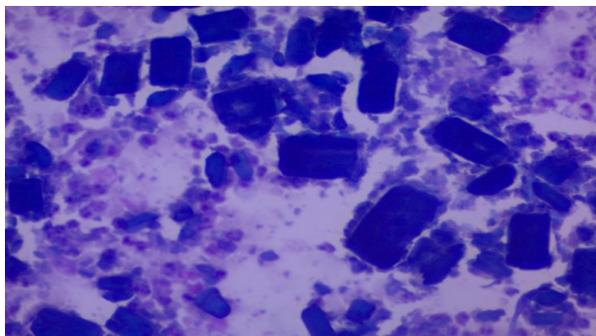


Fig 1. Showing rectangular crystals on high power (40x), Giemsa

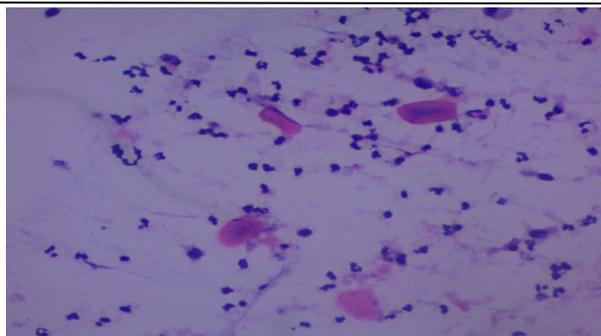


Fig 2. Pink colour rectangular crystalloids on H & E stain (40x).

There are many types of crystalline structures such as amylase, tyrosine, collagenous crystalloids, oxalate and intraluminal crystals that can be seen in Fine Needle Aspiration smears of salivary gland lesions .¹⁻⁴ It is important to differentiate the types of crystalloids from one another.⁵ By light microscopy, amylase crystalloids are geometrically shaped and Collagenous crystalloids are radially arranged needle shaped and tyrosine crystalloids are floret-shaped. ⁶ Intraluminal crystalloids are also non birefringent and geometrically shaped structures as well as amylase crystalloids. However, intraluminal crystalloids are composed of dense, amorphous, eosinophilic substance in contrast to more translucent amylase crystalloids. These crystalloids represent crystallized alpha amylase and are different from the tyrosine rich crystalloids (sun-burst or petal-like structures with blunt ends) or collagen-rich crystalloids (radially arranged fibres of collagen around a clear central area) which are reported in pleomorphic adenomas.⁷ Review of the literature showed that amylase crystalloids have been encountered in FNA smears of salivary glands with sialadenitis and sialolithiasis. Amylase crystalloids should not be accepted as a noncellular marker for specific salivary gland pathology because there are reports that these crystalloids have been seen in various salivary gland lesions and are described as amylase crystalloids in Warthin's tumor and oncocytic papillary cystadenoma.⁸ Few studies

stated that amylase crystalloids can be also seen in lymphoepithelial cysts . Since amylase crystalloids have not been reported in any malignant tumor of the salivary gland until now, the occurrence of amylase crystalloids in FNA smears of the salivary gland favors a benign lesion. However we should pay attention to other cytomorphological features as a principle of cytopathology.

Key words: Parotid , Amylase Crystalloids, Sialadenitis

References

1. Faquin WC, Powers CN: Inflammatory patterns and lymphoma. In Rosenthal DL : Salivary Gland Cytopathology: Essentials in Cytopathology, Vol. 5, New York, Springer, 2008: 57-80
2. Tabbara SO, Sidawy MK, Ali SZ : Fine Needle Aspiration Cytology: Foundations in Diagnostic Pathology. Philadelphia, Churchill Livingstone-Elsevier, 2007:1-36
3. Lopez-Rios F, Diaz-Bustamante T, Serrano-Egea A, Jimenez J, Agustin P: Amylase crystalloids in salivary gland lesions: report of a case with a review of the literature. Diagn Cytopathol 2001; 25:59-62
4. Gerhard R, Vargas PA, da Cruz Perez DE, Fregnani ER: Fine needle aspiration biopsy of parotid cystic lesion with crystalloid formation. Diagn Cytopathol 2005; 32:378-379
5. Cleveland DB, Cosgrove MM, Martin SE: Tyrosine-rich crystalloids in a fine needle aspirate of a polymorphous low grade adenocarcinoma of a minor salivary gland. A case report. Acta Cytol 1994; 38:247-251
6. Bellizzi AM, Mills SE: Collagenous crystalloids in myoepithelial carcinoma: report of a case and review of the literature. Am J Clin Pathol 2008; 130:355-362
7. Johnson FB, Oertel YC, Ammann K. Sialadenitis with crystalloid formation: A report of six cases diagnosed by fine needle aspiration. Diagn Cytopathol 1995;12:76-80.
8. Nasuti JF, Gupta PK, Fleisher SR, LiVolsi VA: Nontyrosine crystalloids in salivary gland lesions: report of seven cases with fine-needle aspiration cytology and follow-up surgical pathology. Diagn Cytopathol 2000; 22:167-171

Dr.Preeti Utal¹, Dr Shilpa MD²*, Dr Geetha S³

1. Post Graduate , Department of Pathology
2. Assistant Professor, Department of Pathology
3. Assistant Professor, Department of Pathology, Sri Devaraj Urs Medical college, SDUAHER, Kolar, Karnataka

*Corresponding Author

E-mail : mdshilpa@gmail.com