

AMYLASE CRYSTALLOIDS: A DIAGNOSTIC CLUE IN SALIVARY GLAND LESIONS

Sailuja Maharjan¹, Bandana Satyal¹, Reena Baidya¹

¹ Department of Pathology, B. & B. Hospital, Gwarko, Lalitpur, Nepal

INTRODUCTION

Amylase crystalloids are non-birefringent geometric shaped structures that are seen in inflammatory conditions of salivary glands.(1)(2)(3)

CASE REPORT

A 67 year old male presented with swelling over left preauricular region measuring 1 x 1 cm for 2 weeks. Ultrasound examination revealed a cystic lesion in parotid gland and the fluid was aspirated following which the swelling subsided. Cytological evaluation of the smears showed dense aggregates of geometrical crystalloid structures of rectangular and rhomboid shape with parallel sides. Admixed were some neutrophils. Occasional acinar structures were observed. It was reported as cystic sialadenitis with amylase crystalloids.

DISCUSSION

Crystalloids in salivary gland lesions are rare occurrence but are found in different salivary gland pathologies like sialadenitis, sialolithiasis, cystic and neoplastic condition.(4) The types of salivary gland crystalloids are amylase, tyrosinase, collagenous, oxalate and

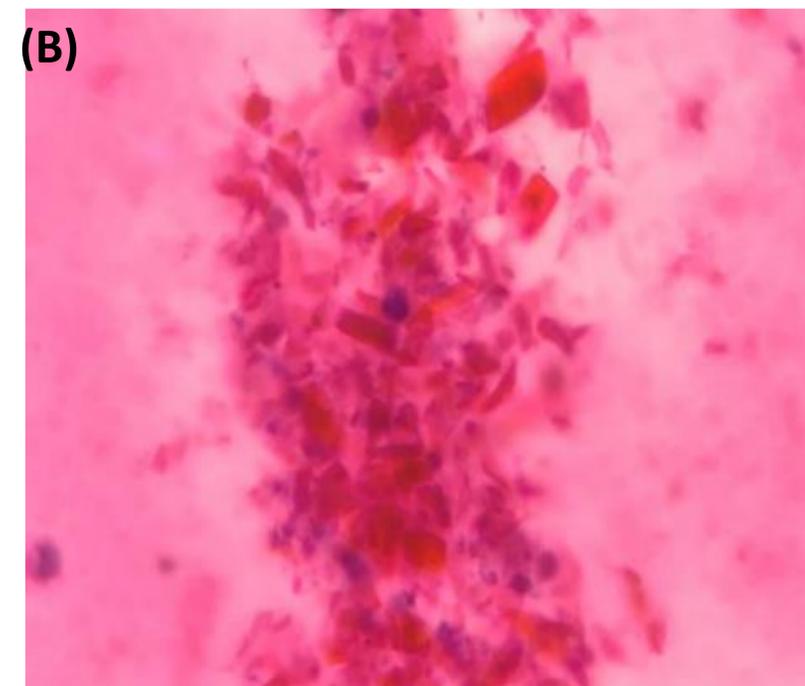
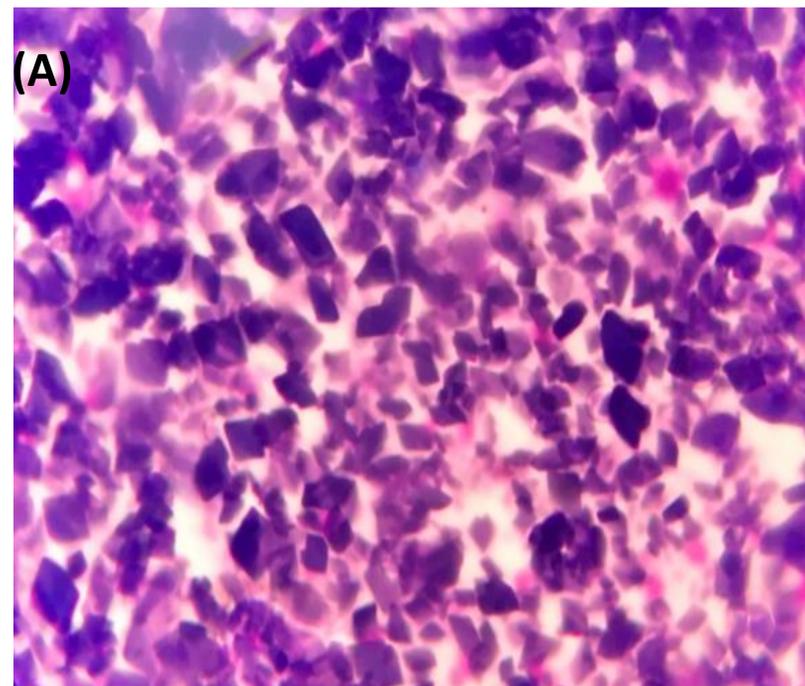


Figure 1. Smears showing numerous amylase crystalloids A) Giemsa stain; B) Pap stain

intraluminal. It is essential to differentiate the type of crystal as it helps in differentiating neoplastic and non-neoplastic conditions.(1) Amylase crystalloids are seen in benign lesions only such as inflammatory, cystic lesions, Warthin tumor and oncocytic cystadenoma.(5) They are formed due to supersaturation of saliva and appear deeply basophilic on giemsa stain and orangeophilic on pap stain.(Figure 1.) Tyrosine crystalloids (petal shaped with blunt ends) and collagenous crystalloids (radially arranged collagen fibers around central area) are seen in pleomorphic adenomas.(4) On the contrary, intraluminal crystalloids are seen in malignant condition and are identified by the presence of geometrical structures embedded in amorphous eosinophilic material.

CONCLUSION

An awareness of amylase crystalloid is important for cytopathologists as it provides a diagnostic clue towards the benign nature of lesion since it has not been seen in malignant condition till date.

REFERENCES

1. Paker I, Anlar M, Genel N, Alper M. Amylase crystalloids on fine-needle aspiration of the salivary gland. *Turk Patoloji Dergisi/Turkish J Pathol.* 2010;26(2):153–5.
2. Nandeesh BN, Crasta JA. Crystalloids in Submandibular Sialadenitis. *Indian J Otolaryngol Head Neck Surg.* 2014;66(SUPPL.1):348–51.
3. Kishore M, Kaushal M, Dogra S. Crystalloids in salivary gland lesion: A diagnostic clue. *J Lab Physicians.* 2019;11(01):100–1.
4. Singh G, Iyer V. Amylase crystalloids in a cystic lesion of the parotid salivary gland diagnosed by fine needle aspiration cytology. *J Cytol.* 2008;25(2):77–8.
5. Pantanowitz L, Thompson LDR, Rossi ED. Diagnostic Approach to Fine Needle Aspirations of Cystic Lesions of the Salivary Gland. *Head Neck Pathol [Internet].* 2018;12(4):548–61. Available from: <http://dx.doi.org/10.1007/s12105-018-0904-8>