

Amylase Crystalloids on Fine-Needle Aspiration of the Salivary Gland

Tükürük Bezi İnce İğne Aspirasyonunda Amilaz Kristaloitleri

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ABSTRACT

Amylase crystalloids is one of the several types of crystalline structures that can be seen in non-neoplastic and neoplastic salivary gland lesions. Here, a 60-year-old woman with an infraauricular mass existing for two years is presented.

On ultrasound a cystic mass, 1 cm in diameter was detected in the tail of right parotid gland. Clear and mucoid fluid was obtained from the mass by fine-needle aspiration. Smears showed numerous rhomboid, rectangular or rod-shaped, non-birefringent crystalloid structures and a few acinar cell groups in a mucoid background rich in polymorphonuclear leucocytes and lymphocytes. It was reported as cystic sialadenitis with amylase crystalloids. In the four-month follow-up, there was no recurrence of the mass.

Since encountered only in benign salivary gland lesions in the literature as in our case, observation of amylase crystalloids on fine-needle aspiration smears indicates a benign lesion and avoids unnecessary surgery.

Key Words: Amylase crystalloids, Salivary gland, Cytology

ÖZ

Amilaz kristaloitleri tükürük bezinin non-neoplastik ve neoplastik lezyonlarında görülebilen çeşitli kristaloit tiplerinden biridir. Bu makalede, infraauriküler bölgede iki senedir kitle şikayeti olan 60 yaşında kadın hasta sunuldu.

Ultrasonografik olarak sağ parotis bezi kuyruk kısmında 1 cm çapında kistik kitle saptandı. Kitleden ince iğne ile berrak, mukoid özellikte sıvı aspire edildi. Mikroskopik incelemede preparatlarda mukoid zeminde çok sayıda romboid, dikdörtgen veya çubuk şekilli, polarize ışıkta refle vermeyen kristaloit yapılar, lenfositler ve nötrofillerden oluşan mikst inflamatuvar hücreler ve tükürük bezine ait az sayıda asiner yapı gözlemlendi. Olgu amilaz kristaloitleri içeren kistik sialadenit olarak rapor edildi. Hastanın 4 aylık takibinde kitlede büyüme izlenmedi.

Sonuç olarak tükürük bezi ince iğne aspirasyonu materyalinde görülebilen amilaz kristaloitleri tanı için spesifik olmasa da literatüre göre ve sunulan olguda da olduğu gibi yalnızca benign lezyonlarda görülmesinden dolayı, hastayı gereksiz cerrahiden korumaktadır.

Anahtar Sözcükler: Amilaz kristaloitleri, Tükürük bezi, Sitoloji

INTRODUCTION

Amylase crystalloids are non-birefringent geometric, polygonal, rhomboid-shaped structures with pointed ends that stain orange using Papanicolaou stains, deep blue by Diff-Quik and pink by Hematoxylin-Eosin (H&E) and range in size from 5 to 500 μm (1-7). They were first observed by Takeda and Ishikawa in a human salivary duct cyst in 1983 (7). In 1993, Jayaram et al. first described crystalloids in fine-needle aspiration (FNA) smears from a parotid cyst (8). Amylase crystalloids can be seen in some cases of chronic sialadenitis as well as cystic lesions, (1,2). Here, a case of cystic sialadenitis with amylase crystalloids is reported.

CASE REPORT

A 60-year-old woman presented with an infraauricular mass that had been present for 2 years. On ultrasound a cystic mass 1 cm in diameter was detected in the tail of right parotid gland. FNA was performed in the right infraauricular region by the cytopathologist using 27-gauge needles attached to a 10-ml syringe holder and a clear, mucoid fluid was obtained. Smears were either air-dried and stained with Diff-Quik or ethanol fixed for Papanicolaou stain.

The FNA smears revealed many geometric, multifaceted non-birefringent crystalloids varying in size. The crystalloids were rectangular, rhomboid and rod-shaped with pointed

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ends and parallel sides (Figure 1). They stained bright orange with Papanicolaou and deep blue with Diff-Quik. A mixed population of polymorphonuclear leucocytes and lymphocytes were scattered in a mucoid background (Figure 2A,B). Rare acinar cell groups were also present (Figure 3). The cytopathological diagnosis was reported as cystic sialadenitis with amylase crystalloids.

The patient did not undergo any surgical procedure. At follow-up 4 months after the diagnosis, there was no recurrence of the mass.

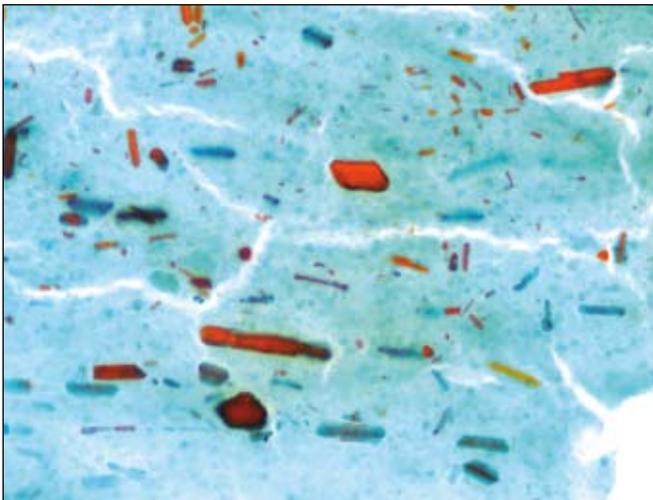


Figure 1: Many geometric, multifaceted non-birefringent crystalloids varying in size. Crystalloids were rectangular, rhomboid or rod-shaped with pointed ends and parallel sides (PAP, x200).

DISCUSSION

There are many types of crystalline structures such as amylase, tyrosine, collagenous crystalloids, oxalate and intraluminal crystals that can be seen in FNA smears of salivary gland lesions (1-16). It is important to differentiate other types of crystalloids from amylase crystalloids because they can be seen in malignant salivary gland tumors whereas amylase crystalloids are not (9,17,18). By light microscopy, geometrically shaped amylase crystalloids can be easily discriminated from radially arranged needle-shaped collagenous crystalloids and floret-shaped tyrosine crystalloids. (18-20). 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. Moreover, amylase crystalloids can measure up to 500 μm whereas intraluminal crystalloids only measure up to 100 μm (19, 20). Crystalloids observed in our study were

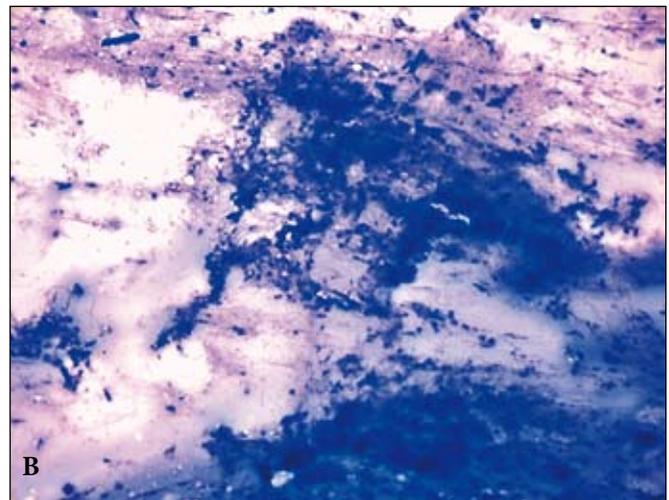
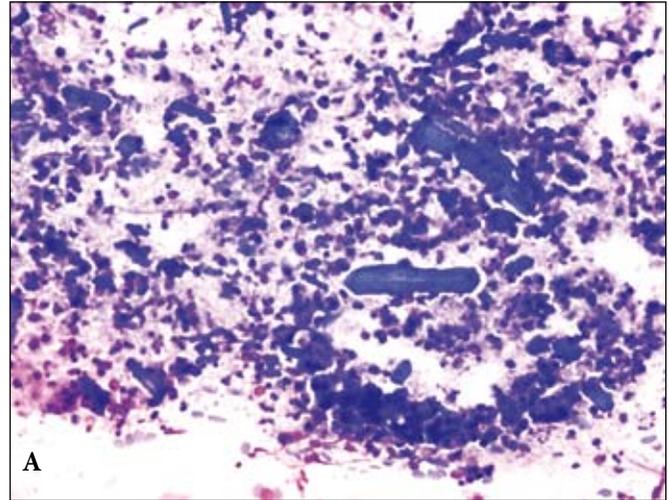


Figure 2: (A) Blue coloured crystalloids and numerous neutrophils in the background (Diff-Quik, x200). (B) Fine-needle aspiration smear had a mucoid background (Diff-Quik, x100).

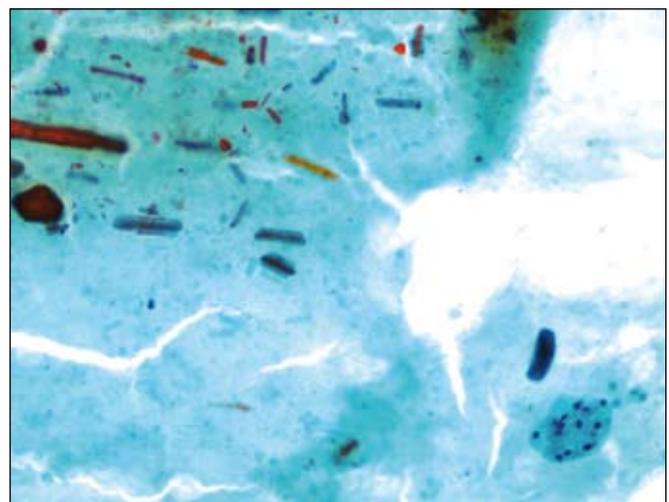


Figure 3: Amylase crystalloids and an acinar cell group (PAP, x200).

morphologically similar to α -amylase crystalloids described in the literature (3-8).

In their study, Takeda and Ishikawa analyzed crystalloids in a parotid duct cyst with scanning electron microscopy and electron probe X-ray microanalysis. They reported that amylase crystalloids may result from supersaturation of saliva and represent crystallized α -amylase (7).

A review of the literature showed that amylase crystalloids have been mostly encountered in FNA smears of salivary glands with sialadenitis and sialolithiasis. Nasuti et al. said that 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. They described amylase crystalloids in Warthin's tumor and oncocytic papillary cystadenoma (19). Lopez-Rios et al. stated that amylase crystalloids can be also seen in lymphoepithelial cysts (20).

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. We should however always continue to pay attention to other cytomorphological features as a principle of cytopathology.

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