

GIANT SIALOLITHIASIS – “MEAL TIME SYNDROME”

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Abstract

Sialolithiasis (or) salivary stone is a well known entity. About 1% of population has suffered from this disease at one time (or) another. Saliva is a highly complex mixture of water, organic and non – organic components. It is highly modified as it is carried via a branching ductal system into the oral cavity. The prevalence of giant sialolith is most commonly seen in submandibular glands(80-90%).We report a case of a 60 year old female patient with a complaint of hard swelling in her left side of mouth, associated with pain. Sialolithiasis of submandibular gland duct was diagnosed which was removed by distal finger pressure.Patient is free of disease after 3 months of post operative follow up.

Key words: - Salivary Stone, Sialolithiasis, Salivary Gland Disorders

Introduction

Saliva is the product of major and minor salivary glands dispersed throughout the oral cavity. It is also a complex exocrine secretion containing more than 60 constituents. Patients with salivary gland disease most frequently present with complaints of dryness, swelling (or) mass in gland. The most common cause of acute and recurrent swelling of salivary glands in adults is presence of salivary calculi obstructing the outflow of saliva by blocking the duct of the gland.

Sialoliths are calcified organic matter that forms within the secretory system of major salivary glands. The etiology of giant sialolith formation is still unknown, yet several factors that cause pooling of saliva within the duct are known to contribute to stone formation. A nidus of salivary organic material becomes calcified and gradually forms a sialolith.

The submandibular gland is commonly affected. The higher rate of giant sialolith formation in this gland is due to:

1. The tortuous course of Wharton's duct
2. Higher calcium and phosphate levels
3. Dependent position of submandibular glands, which leaves them prone to stasis.¹

Case Report

A 60 year old female patient reported with complaints of a hard swelling in her left side of mouth associated with pain. History revealed that hard swelling has increased gradually over a period of 9 months. Intra oral examination revealed a large swelling in the submandibular ductal orifice, measuring about 1cm x 1cm. Foci of ulceration was seen. Borders of ulcer appeared erythematous. Upon palpation, swelling was firm to hard, non-tender and well defined.

In this case, while exploring the ulcer/orifice with a surgical excavator and on palpation there was slight compression of the swelling distally, the orifice widened and enabled visualization of part of the mass. As the patient did not complain of pain, distal compression of the mass gradually delivered the mass out of the orifice. No sutures were placed to help the orifice to return to its structure. Patient was free of the disease during the three months post

operative follow up and was advised to report after every two months for one year for further follow up.



Figure 1: Pre operative photograph showing salivary calculi in the floor of the mouth.



Figure 2: Post operative photograph.



Figure 3: The surgically excised salivary calculi.



Figure 4: Salivary calculi which is of 1.5 cm x 1.5 cm in size.

Gross examination of the mass:

Size	1.5cm x 1.5cm x 1cm
Colour	White
Surface	Surface exposed to oral cavity is eroded and inner surface is smooth because of continuous deposition
Shape	Parallel to the duct / configuring the shape of the duct

Part of giant sialolith was chipped for decalcification and processing. Decalcification in acid completely dissolves the mass configuring that the mass contained only inorganic material.

Discussion

Salivary glands with sialoliths are enlarged and tender.³ The most frequent cause of sialolithiasis is a macroscopically visible calculus formation. The majority of salivary calculi is formed from phosphate and oxalate salts. They are also composed of varying ratios of organic and inorganic substances.

The organic substances are glycoproteins, mucopolysaccharides and cellular debris while the inorganic substances are mainly calcium carbonate and calcium phosphate.

Etiology for giant sialolith formation deserves special mention of two theories:

1. Retrograde migration of food, bacteria and foreign bodies from the oral cavity provides a nidus for calcification.
2. Existence of intracellular microcalculi when excreted into ductal system may act as a nidus for further calcification.²

The structure of a sialolith is crystalline and primarily composed of hydroxyapatite. Gout can cause salivary calculi composed of uric acid. Stasis of saliva may lead to infection, fibrosis and gland atrophy. Complications from sialoliths include acute sialadenitis, ductal stricture and ductal dilatation.

The characteristic direct diagnostic ultrasound criterion is an echo rich reflection with marked dorsal sound shadowing. Calculi can be easily also detected with non-enhanced CT, which is the most sensitive technique of detecting stones. During the acute phase, therapy is primarily supportive. Stones at or near the orifice of the duct can often be removed transorally by milking the gland, but deeper stones require removal with surgery or sialoendoscopy. Recent advances in surgical management includes extracorporeal shock wave lithotripsy (ESWL). When a sialolith is too large to remove with just the sialoendoscopic and appropriate accessories, a sialoendoscopic assisted sialolithectomy can be performed. The technique also involves lithotripsy. The methods are designated by type of energy that fragments the stone and whether energy is introduced to stone directly (intracorporeal) or extraorally (extracorporeal).³

The CO₂ laser has several characteristics that make it ideal for intraoral soft tissue surgery. When a stone is reached by laser, it is characteristic to observe a flash of light that aids in localization of stone. A small amount of lasing was performed on either side of sialolith to aid in its delivery.⁴

References

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