

LARGE SIALOLITH OF SUBMANDIBULAR GLAND: AN UNUSUAL CASE REPORT & REVIEW OF LITERATURE

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ABSTRACT:

Sialolithiasis is the most common disease of salivary gland (50%) Salivary calculi are most frequently seen in sub mandibular glands because of the specific anatomy & its duct. This case is about a 50 years of male who presented with a swelling & intermittent episodes of pain for last two years .The pain & swelling increased during meal time. Very few cases of large size sialolith is reported in literature. The aim of this article is to report large UN usual sialolith involving sub mandibular gland.

Key Words: Sialolithiasis, submandibular gland, Wharton's duct, obstruction



INTRODUCTION:

The term is derived from the Greek words *sialon* (saliva) and *lithos* (stone), and the Latin *-iasis* meaning "process" or "morbid condition".^[1] A calculus is a hard, stone-like mass that forms within an organ or duct inside the body, usually made from mineral salts. Sialolithiasis also known as salivary calculi or salivary stone, is a condition where a calcified mass forms within the salivary gland, mostly submandibular salivary gland duct also called as Wharton's duct. If a calculus forms in the duct that drains the from a salivary gland into the mouth, then saliva will be trapped in the gland. This may cause painful swelling and inflammation of the gland. Inflammation of a salivary gland is termed sialoadenitis

Inflammation associated with the blockade^[2]. Sialolithiasis is the most common disease (50%) of the salivary gland & estimated frequency is 1.2 % (12 in 1000) in the adult population every year with male predominance 2:1 ratio^[3]. 80-90 % of salivary stones are found in submandibular gland, 5-20% in parotid & 1-2% in sublingual salivary gland.^[4] These contain different minerals like calcium phosphates, carbonates together with an organic matrix. Submandibular stones are 18 % organic & 72 % inorganic whereas parotid stones are 51 % organic & 49 % inorganic in nature^[3]. Salivary gland stones are single or multiple, located in the efferent duct distally or proximally, rarely occur intra parenchymally, representing various shapes (round ovoid)

The sialolith measure from 5-10 mm in size & size above 15 mm is reported as unusual. [5] The annual increase in size of salivary stones is estimated at 1 mm [6], and thus the duration of complaints history is crucial for treatment planning.

CASE DETAIL:

A 50 years old male reported to the department of oral & maxillofacial surgery, Indira Gandhi Government Dental College Jammu with a swelling on right side neck. Patient gave history of pain & increase of swelling during eating.

O/E swelling was present below lower border of mandible; it was firm, non-tender about 2*3 cms in size. Swelling was fixed with smooth surface & regular borders (fig 1 & 2). OPG revealed a rounded radio opaque mass below lower border of mandible (fig 3). FNAC showed salivary inflammatory cells. Sialolithiasis was diagnosed, patient was planned under GA. Submandibular incision was given, gland exposed & removed, and wound was sutured in layers after putting corrugated rubber drain.



Fig 1 pre-operative photo showing swelling



Fig 2 Lateral profile showing swelling



Fig 3 OPG showing a radio opaque mass



Fig 4 Intra operative photograph showing exposure of sub mandibular gland



Fig 5 Gland after removal

DISCUSSION:

Giant sialolith are rare findings in clinical oral pathology with size varying from 35-72mm^[7]. Same as in our case, the size is very large.

Salivary gland stones are twice as common in males as in females. The most common age range in which they occur is between 30 and 60, and they are uncommon in children.^[2] The case reported here is a male & 50 years old.

Salivary stones may be divided according to which gland they form in. About 85% of stones occur in the submandibular gland and between 5-10% occur in the parotid gland. In about 0-5% of cases, the sublingual gland, or a minor salivary gland is affected^[2]. When minor glands are rarely involved, calculi are more likely in the minor glands of the buccal mucosa and the maxillary labial mucosa.^[8] Submandibular stones are further classified as anterior or posterior in relation to an imaginary transverse line drawn between the mandibular first molar teeth. Stones may be radio opaque, i.e. they will show up on conventional radiograph, or radiolucent, where they not be visible on radiographs (although

some of their effects on the gland may still be visible).

The exact etiology and pathogenesis of salivary calculi is largely unknown. Genesis of calculi lies in the relative stagnation of calcium rich saliva. They are thought to occur as a result of deposition of calcium salts around an initial organic nidus consisting of altered salivary mucins, bacteria and desquamated epithelial cells.^[9, 10] For stone formation it is likely that intermittent stasis produces a change in the mucoid element of saliva, which forms a gel. This gel produces the framework for deposition of salts and organic substances creating a stone.⁶ Traditional theories suggest that the formation occurs in two phases: a central core and a layered periphery.^[11] The central core is formed by the precipitation of salts, which are bound by certain organic substances. The second phase consists of the layered deposition of organic and non-organic material.^[13] Submandibular stones are thought to form around a nidus of mucous, whereas parotid stones are thought to form most often around a nidus of inflammatory cells or a foreign body^[12,13] Another theory has proposed that an unknown metabolic phenomenon can increase the saliva bicarbonate content, which alters calcium phosphate solubility and leads to precipitation of calcium and phosphate ions.^[14] A retrograde theory for sialolithiasis has also been proposed. Aliments, substances, or bacteria within the oral cavity might migrate into the salivary ducts and become the nidus for further calcification. A case in which a stone

formation around a vegetal nidus was histologically proven has been reported.^[15] Salivary stagnation, increased alkalinity of saliva, infection or inflammation of the salivary duct or gland, and physical trauma to salivary duct or gland may predispose to calculus formation.^[1] Submandibular sialolithiasis is more common as its saliva is (i) more alkaline, (ii) has an increased concentration of calcium and phosphate, and (iii) has a higher mucous content than saliva of the parotid and sublingual glands.^[16] In addition, the submandibular duct is longer and the gland has an antigravity flow. Stone formation is not associated with systemic abnormalities of calcium metabolism. ^[14]

Careful history and examination are important in the diagnosis of sialolithiasis. Pain and swelling of the concerned gland at mealtimes and in response to other salivary stimuli are especially important. Complete obstruction causes constant pain and swelling, pus may be seen draining from the duct and signs of systemic infection may be present. ^[12]

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Clinically, sialoliths are round or ovoid in shape, rough or smooth in texture and yellowish in color. Similar to our case who had round firm mass palpable submandibular region

Conventional radiographic methods like orthopantomogram (OPG) are still widely used in detection of calcification as seen in our case Sialolith was diagnosed on OPG... Recent imaging techniques like Ultrasound (US), Computed Tomography (CT), Magnetic resonance imaging (MRI), Sialography, Digital Sialography, Digital subtraction Sialography, CT Sialography and MR Sialography Add substantial new information of glandular and ductal changes as compared to use conventional radiograph. ^[17]

Indication for a complete removal of the gland is becoming uncommon as a first line treatment although still indispensable in chosen cases .In the present case the treatment of choice was removal of gland & healing was an eventful

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