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Parotid Sialolithiasis - A Case Report

Dr. Shilpi Srivastava[1]; Dr. Durga Shankar Gupta[2]

[1]Associate Professor; Department of Oral Medicine & Radiology Teerthanker Mahaveer Dental College & Research Centre Moradabad-244001

[2]Professor; Department of Oral & Maxillofacial Surgery Teerthanker Mahaveer Dental College & Research Centre Moradabad-244001

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Abstract: Salivary stones or sialoliths are common cause of major salivary gland infection causing recurrent sialadenitis. They majorly affect submandibular salivary gland and seldom the Parotid. This case report describes about a case of recurrent sialadenitis secondary to Stenson's duct obstruction by a salivary stone along with role of soft tissue intraoral periapical radiograph in diagnosis and determining location and dimensions of sialolith is also discussed.

Keywords: *Salivary Gland Disorder, Sialolithiasis, Salivary Stone, Parotid Sialolithiasis.*

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I. INTRODUCTION

Major salivary glands submandibular, parotid and sublingual are pivotal in the production and secretion of saliva which is an essential for different functions like moistening, digestion, mineralization, lubrication, and mucosal protection. Sialolithiasis is a benign disorder involving the formation of stones within the ducts of the salivary glands.[1] This leads to salivary stasis, glandular swelling and potentially chronic infection.[2]

The most affected salivary gland is submandibular accounting for 80% of sialolithiasis cases followed by Parotid sialolithiasis which is usually rare, accounting for 6 %–15 % of all salivary stone and around 2% are in the sublingual and minor salivary glands.[3]

Parotid sialolith affects about 1 % of the total population, and it is more prevalent in middle-aged adults between 30 and 60 years of age with men affected twice as often as women. Intra-glandular parotid salivary stones are less common than intra-ductal stones.[4] Parotid stones are usually smaller than submandibular stones, mostly radiolucent until and unless calcified to 60 –70% calcified.

The aetiology of salivary stone formation remains elusive. Factors that cause sialolith formation are divided into two major groups.[5]

- Anatomical factor altering saliva formation or flow due to ductal stenosis or presences of inflammation secondary to infection
- Conditions altering salivary composition like increased calcium content or altered enzyme function secondary to several systemic diseases (gout, Sjogren's syndrome) medications (anticholinergics, antisialogogues), local trauma, head and neck radiotherapy and renal impairment also can predispose patients to sialolith formation can predispose patients to sialolith formation. [5,6]

II. CASE REPORT

A 63-year-old male patient came to the department with the chief complaint of recurrent pain and swelling in his right cheek region for 1year. On elaborating the history of present illness pain was severe in nature and gradual in onset which aggravates while mastication associated with swelling during meal-time and relieved on taking medicine. Medical and personal history were non contributary. Intraoral examination showed a small single inflamed swelling with central yellowish white region at the opening of Stensen's duct without any evidence of extraoral swelling. Bi-digital palpation presented a stony hard palpable mass in the region of the right buccal mucosa which was tender (Figure 1) indicative of probable obstruction of the parotid duct. On milking the gland, reduced salivary flow was noted on right side. Based on history of episodic meal-time associated swelling and pain as well as clinical examination a provisional diagnosis of recurrent right parotid sialadenitis with sialolithiasis was given. Differential diagnosis included viral sialadenitis, mumps, acute bacterial sialadenitis, radiation sialadenitis and Sjogren's disease.

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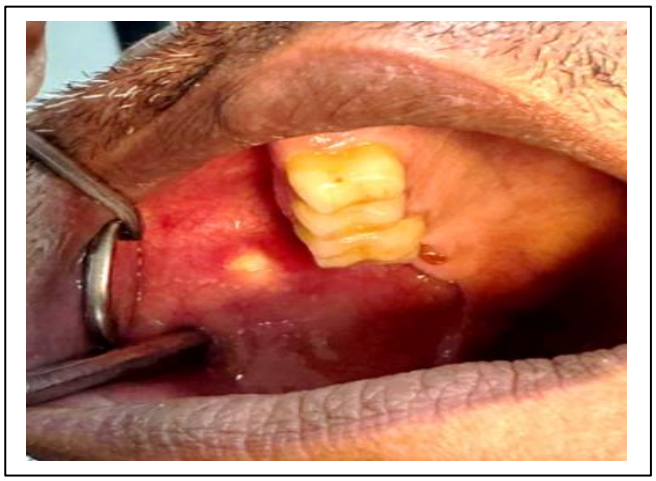

Fig 1 Intraoral View Showing Sialolith at Stensen's Duct Opening.

Radiographic examination by intraoral periapical radiograph (IOPAR) of the right cheek region (reducing exposure parameters) showed single round to oval shaped radiopaque mass measuring approx. 2*2 cm in dimensions having concentric pattern was noted [Figure 2].

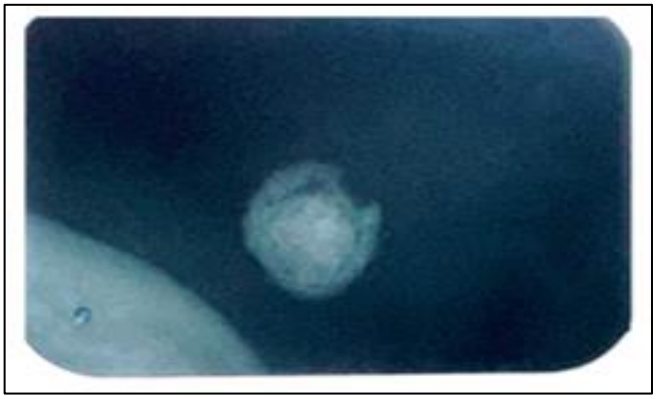

Fig 2 Periapical View (with Reduced Exposure Parameter) Showing Radiopaque Calcified Oval Mass in the Right Buccal Vestibule.

As the calculus was located near the duct orifice, intraoral surgical removal was done, and post-operative antibiotics and analgesics were prescribed, and the patient was kept under follow-up.

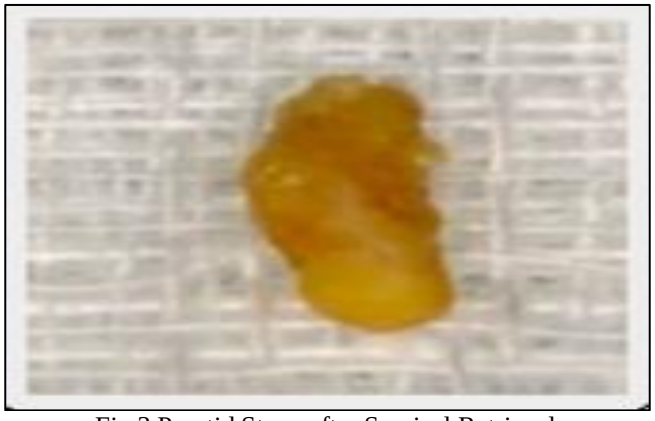

Fig 3 Parotid Stone after Surgical Retrieval

III. DISCUSSION

Sialolithiasis represents around one-third of salivary gland disease and most common cause of acute inflammation in the salivary glands. Most affected is submandibular gland followed by parotid.

Sialolithiasis may be asymptomatic or symptomatic with pain and swelling may be present while eating when saliva production is maximum due to salivary flow obstruction by stone. Waxing and waning of episodic swelling occurs as saliva accumulates within the duct followed by gradual reduction as salivary flow decrease.[6]

The exact pathogenesis of sialolithiasis is not well understood, Parotid salivary stones are thought to establish frequently around a foreign body or nidus of inflammation. Usually, they are intraductal, porous in consistency, single, unilateral having round or ovoid shape measuring <1 mm to 3mm in size white to pale yellow in colour. [2,3,6,7] Round to ovoid shape of stones is mainly attributed to round shape of duct as well as concentric calcification around nidus. [6,7]

Various imaging techniques can be used to diagnose sialolithiasis like conventional soft tissue radiography, Computed tomography (CT), magnetic resonance imaging, sialography, ultrasonograpgy.8 Sialography is indicated when sialoliths are radiolucent. Scintigraphy is used in cases where sialography is contraindicated. Recently, CBCT is being used with high resolution, low dose radiation and a non-invasive method in diagnosis of sialoliths. In this case report soft tissue conventional radiograph was used to diagnose the parotid sialolith.

Treatment of sialolith can be conservative or surgical depending upon the size and location of salivary stone. Small stones (<4 mm) located distal to the gland or within the ductal close to the orifice in general respond well to conservative treatment of hydration massaging/milking of the gland, sialagogues, anti-inflammatory drugs and antibiotics. Surgery is preferred if size of the stones is medium or large (>4 mm). [7,8]

Extracorporeal shock-wave lithotripsy, sialendoscopy, and combined endoscopic and surgical procedures are recent alternative treatment options available treatment of sialolithiasis.

IV. CONCLUSION

Parotid sialolithiasis is less frequent and predominantly affects duct more than the gland. Intraoral periapical soft tissue radiograph is very useful in detecting salivary ductal stones due to its easy availability, less patient exposure and cost effectiveness. Several diagnostic modalities are available to recognize salivary stones including recent advancement in field of radiology. Sialolithiasis can be managed conservatively or surgically depending upon its size and location. This case report highlights the importance of taking a detailed dental history, examination along with

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soft tissue radiography and the role of dentist in the management and treatment of sialolithiasis.

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