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RESEARCH ARTICLE

SIALOLITHIASIS WITH INCREASED TSH LEVEL: A CASE REPORT

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INTRODUCTION

Sialolithiasis is the most common disease of the salivary glands. It is the major cause of salivary gland dysfunction⁽¹⁾. It is estimated to affect 12 in 1000 of the adult population and usually appears in the age group of 30 to 60 years, with males affected 2 times more than females and is a rare occurrence in children. More than 80% of sialoliths occur in the submandibular gland or its duct; 4–10% occur in the parotid gland; 1–7% in the sublingual gland or minor salivary glands. Sialoliths are more commonly seen in submandibular glands due to the anatomic position of the duct causing the salivary flow against gravity, a longer and more tortuous duct, and the production of alkaline saliva rich in mucin⁽²⁾. 70-80% of cases are solitary stones, while 5% of cases are found to be multiple in nature⁽³⁾. They are most commonly seen between the third and sixth decades of life, and 3% of all sialolith cases occur in paediatric patients⁽⁴⁾.

CASE REPORT

A 42-year-old male patient reported to the Department of Oral Medicine and Radiology with a chief complaint of pain and swelling in the right side of his mouth since 6 weeks.

ABSTRACT

Background: Sialolithiasis is the formation of calcific concentration within the parenchyma or ductal system of major or minor salivary glands. It most commonly affects the submandibular gland and affects adults aged 30 to 60 years. It causes swelling and pain, along with decreased salivary flow in the affected region. Here we discuss a case of sialolithiasis associated with increased thyroid hormone along with an incidental finding of complex odontoma in a 42-year-old patient.

The swelling was initially peanut-sized, which has gradually increased to its current size. The patient gives a history of pain in the same region that was gradual in onset, intermittent, mild in intensity, dull aching, non-radiating, aggravates on touching and relieves on its own. The patient was schizophrenic and was on medication for the same. He gives a history of cigarette smoking for 10 years, alcohol consumption for 10 years, and tobacco chewing for 5 years. The patient had quit the habit 3 months back. On clinical examination, a swelling was noted on the floor of the mouth on the right side of the lingual frenum, measuring approximately 20 mm. There was no discharge associated with the swelling. On bimanual palpation, the swelling is hard in consistency and tender. Overlying mucosa appears normal. (Figure 1). A bony protuberance was also noted on the hard palate adjacent to 28, measuring approximately 10 mm in oval shape, and the overlying mucosa appears normal. On palpation, the swelling was non-tender and hard in consistency (Fig. 2). Based on history and clinical features, the case was provisionally diagnosed as sialolith on the right submandibular gland and the bony protuberance in the palate as odontoma. The patient was advised to undergo radiographic examination for further investigation. A mandibular occlusal radiograph reveals well defined radio opacity below the periapical region of 43, 44, and 45 measuring 10 mm x 5 mm, suggestive of sialolith (Fig. 3). Intra oral periapical radiograph in relation to 28 region in hard palate reveals well defined radio opacity mesial to third molar on the hard palate surrounded by a radiolucent margin

measuring 7mm x 8mm suggestive of complex odontoma (Fig.4). The radio opaque lesion in the mandibular occlusal radiograph was diagnosed as submandibular sialolithiasis and the radio opacity in the palate was diagnosed as complex odontoma. Surgical excision was planned for the same.



Fig 1. Swelling on the right side of the lingual frenum



Fig 2. Protuberance on hard palate adjacent to third molar

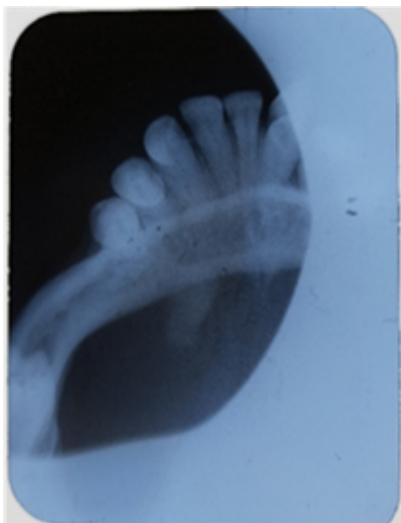


Fig 3. Mandibular occlusal radiography revealing radio opacity below the periapical region of 43, 44, and 45

Clinical differential diagnosis of submandibular sialolithiasis, sialadenitis and radiographic differential diagnosis include

radiolucent phlebolith, dystrophic calcification of the lymph nodes, palatine tonsillitis and hemangiomas with calcification⁽⁵⁾. Routine blood tests were performed. Parathyroid hormone levels were normal and a slight rise in the levels of TSH was noted in the routine thyroid hormone report. The TSH level of the patient was 6.63 mU/L, which was contradictory to the normal level of 0.5 to 5.0 mU/L. Surgical excision of the sialolith was carried out by transoral approach with sharp dissection of the Wharton duct under local anaesthesia (2% lignocaine) (Fig. 5).



Fig 4. Intra oral periapical radiograph revealing well defined radio opacity mesial to third molar on the hard palate



Fig 5. Surgical excision of submandibular sialolith

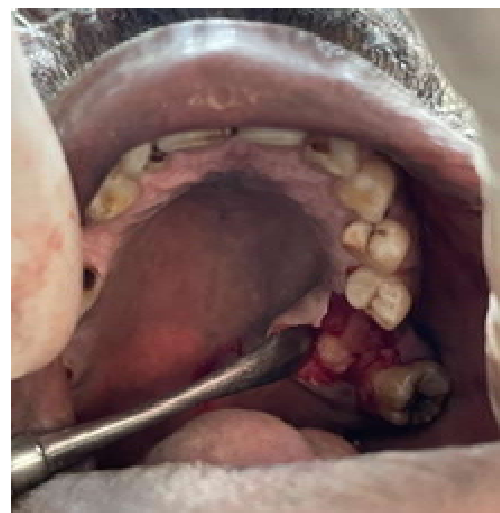


Fig 6. Mucoperiosteal flap raised to reveal odontoma

The excised sialolith measured 10 mm along its greatest length (Fig.6). The odontoma was surgically removed and no additional

treatment was found necessary. The excised bony mass measured approximately 20 mm x 20 mm. The post-operative period was uneventful. The patient was advised analgesics, antibiotics, and warm saline mouth rinses. The patient was reviewed after 1 week. He was asymptomatic and had no complaints.

DISCUSSION

Sialoliths are the condensation of calcium salt, mainly calcium phosphate, in the form of magnesium carbonate and ammonium. Most of the sialoliths are within the range of 5mm in maximum diameter, and all the sialoliths that are more than 10mm should be reported as sialoliths of unusual size⁽¹⁾. Sialolithiasis is more commonly seen in men and is rarely seen in children⁽⁵⁾. The average size of a sialolith ranges from six to nine mm and is rarely larger than 1.5 cm⁽⁶⁾. While the proper etiology of sialolith is unknown, reports suggest that the basis of sialolith formation is intracellular microcalculi formation. Other possible causes of sialolith are infection, salivary dysfunction, ductal anomalies, and ductal epithelium metaplasia⁽⁵⁾. The cardinal signs of sialolith are swelling and pain⁽⁵⁾. Patients may complain of pain in the concerned salivary gland during meals or during any salivary stimuli⁽⁷⁾. Determination of the amount and character of saliva should be noted, which in most cases is decreased or absent salivary flow⁽⁸⁾. Some authors have stated a decrease in salivary flow due to obstruction, while some have stated an increase in salivary flow due to glandular enlargement⁽⁹⁾. Small or less calcified sialolith cannot be identified by conventional 2D radiography, especially if superimposed by well calcified bone, and 10% to 30% are categorised as radiolucent in nature. Occlusal radiographs are useful for radio opaque submandibular sialolith⁽²⁾. The present case was diagnosed by occlusal radiograph, which revealed radio opacity below the periapical region. The patient was posted for surgical removal of the sialolith. Undiagnosed sialolithiasis may lead to recurrent infections resulting in chronically tender salivary glands, whereas in severe cases it can also result in abscess formation.

Differential diagnosis of submandibular sialolithiasis includessialadenitis, radiolucent phlebolith, dystrophic calcification of the lymph nodes, palatine tonsillitis, and hemangiomas with calcification⁽⁵⁾. Radiographically, sialoliths are seen as radio opaque masses in the affected gland. Whereas radiolucent phleboliths are seen as focal calcification, often with a radiolucent center. Dystrophic calcification of lymph node is well defined, irregularly shaped opacities. Palatine tonsillitis is seen as low density edematous changes within the palatine tonsil. Hemangiomas with calcification are seen as sclerotic, homogenous, well demarcated lesions. Treatment for submandibular sialolithiasis is surgical removal of the calculus or complete excision of the submandibular gland, depending on the severity and size of the stone⁽⁸⁾. The stone was surgically removed via the transoral method in this case. Thyroid disorders can impair salivary gland function through a variety of mechanisms. According to previous studies, patients with thyroid disorders show a relatively high concentration of anti-nuclear antibodies, resulting in a high risk of developing autoimmune disorders⁽¹¹⁾.

The present case shows submandibular sialolithiasis associated with increased thyroid hormone levels. To date, no literature has mentioned the association of increased thyroid hormone with sialolithiasis.

CONCLUSION

Sialolithiasis is a common salivary gland disorder, especially of the submandibular gland. Sialolith is most commonly associated with pain and tenderness in the affected area. Early diagnosis and treatment of sialolith is important to avoid complications of infection and abscess formation. Disruption in thyroid hormone levels can impair the normal functioning of the salivary gland.

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