

A RARE CASE REPORT OF LARGE SUBMANDIBULAR DUCT CALCULUS

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Abstract

Salivary stone disease is the most common disease of the salivary glands. They may occur in any of the salivary gland ducts/ glands, but are most common in the submandibular gland, the reason being submandibular secretions are rich in mucus and are secreted against gravity. This report presents clinical and radiographical signs of a large ductal sialolith. Radiographical examination revealed large elongated ovoid radioopaque lesion on left side of floor of the oral cavity. MDCT confirmed the radiographical finding and further revealed atrophied sub mandibular gland. Surgery confirmed the radiological findings of a large sialolith which was further proved on HPE as calcium containing stone.

Key Words: stone, submandibular duct

INTRODUCTION

Case Report

A 35 year old man was referred to our department from surgical speciality with complaints of chronic pain and intra oral swelling. The patient had been having recurrent bouts of intraoral infections for the past 3 years. He has recently noted that the swelling has started interfering with his chewing movements and so reported to our hospital. Medical history of the patient was not remarkable. Extraoral examination revealed no swelling and no palpable mass. Intraoral examination, revealed a hard elongated mass along the left Wharton's duct and a grayish-white mass was observed at the orifice of left sub mental duct [Fig /Tabel 1]. Sub mandibular view radiographs were obtained which revealed a large oblong radioopaque lesion in the region of the left submandibular duct [Fig /Tabel 2].

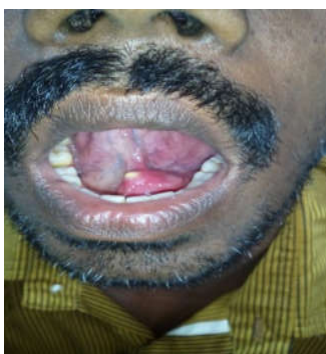


Fig1 /Table 1 Intra oral examination revealed a fleshy swelling on the left side of floor of mouth with a yellowish tip.



Fig2 /Table 2 Submental radiograph showing a long vertically oriented radiodense lesion along the left submandibular duct region

The patient was subjected to further radiological evaluation in the form of USG and CT neck. USG revealed the lobulated contour of the calculus, upstream duct dilatation and gland atrophy [Fig /Tabel 3a]. CT neck was done to r/o any malignant transformation in the region owing to chronic obstruction. The lesion size was $2.8 \times 0.8 \times 0.4$ cm in size [Fig /Tabel 3b]. Histopathological validation was performed and the lesion was found to be a calcium containing structure with lamellar pattern. On the basis of radiographical and histopathological findings, the lesion was diagnosed as a submandibular sialolith.



Fig 3a / Table 3a USG of left submandibular region – intra ductal calculus with lobulation, upstream ductal dilatation and gland atrophy.



Fig 3b / Table 3b CT AXIAL IMAGE – Showing atrophied gland without any features of malignancy.

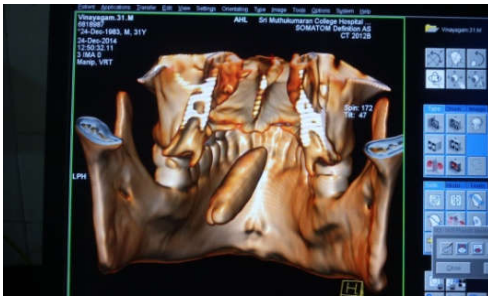


Fig 3c / Table 3c CT 3D Reconstructed image – long smooth dense calculus matching with bone attenuation.



Fig/Table 4 Intra op picture showing the long yellowish ductal calculus.

DISCUSSION

Salivary calculi are usually small and measure less than 1 cm with a mean size of 6 to 9 mm. They rarely measure more than 1.5 cm. If the size exceeds 1.5 cm, they fall into the category of giant sialoliths which are rare. Large and giant calculi may perforate the floor of the mouth by ulcerating the duct or may result in a skin fistula by causing a suppurative infection. Usually sialoliths present with symptoms of recurrent pain and swelling of the

associated gland during meals. Though large intra ductal calculi have been reported large intra ductal calculi have been sparsely reported, hence qualifying our case to be a case report of rare nature. In this report, clinical and radiological features of a large ductal sialolith is presented. It was located in the left Wharton's duct and the patient complained of painless swelling. Usually patients are asymptomatic until the duct is totally obstructed or secondary infection sets in. It is believed that a calculus may enlarge at the rate of approximately 1 to 1.5 mm per year. Considering the aforementioned fact we guess that our case would have begun to develop many years ago.

Careful history and examination are important in the diagnosis of sialoliths. Pain and swelling of the concerned gland at mealtimes and in response to other salivary stimuli are especially important. Bimanual palpation of the floor of the mouth, in a posterior to anterior direction, reveals a palpable stone in a large number of cases of submandibular calculi formation. Bimanual palpation of the gland itself can be useful, as a uniformly firm and hard gland suggests a hypo-functional or non-functional gland.

Imaging studies are complementary to clinical examination in diagnosing sialoliths. The best view for visualizing radiopaque submandibular stones is a standard mandibular occlusal radiograph. Since the lesion was big in this case, regular submental view radiograph beautifully detailed the calculus. However the calculus was obscured on lateral views. Other diagnostic methods include sialography, ultrasound, computed tomography and scintigraphy for sialoliths. Currently, magnetic resonance sialography obtained in two or three dimensional images is suggested for diagnosis of sialoliths, but these methods are not suitable to see the inner duct system of the salivary glands. Sialoendoscopic system was developed in the 1990's as an endoscopic technique, and provides to examine the ductal system completely due to the small scopes. Sialoendoscopy can be used for both diagnostic and treatment purposes. In this report, as the lesion was observed clearly in radiographs, no further investigations were performed for diagnosis. USG and CT were done mainly to see the upstream complications and to rule out malignancy.

Different treatment options may be selected according to the size and location of the sialolith. Small stones often may be "milked out" through the ductal orifice using bimanual palpation in cooperative patients. Large proximal duct stones can

be dealt with piezoelectric extracorporeal shock wave lithotripsy or surgical removal of the stone/gland may be required. Sialoendoscopy is a new way and minimally invasive technique for treating obstructions of the ductal system and can be used with operation in large salivary stones. Recurrent or continuous obstruction of the salivary duct may lead to acute or chronic sialadenitis or even perforation of the oral mucosa.

Treatment

In this case the calculus was removed via simple trans oral resection [Fig /Tabel 4]. Since the CT scan didn't show any e/o malignancy the duct and gland were spared by the surgeon. Patient recovered uneventful and was asked to come for routine follow up once in 6 months. He was also advised to maintain proper oral hygiene and practise certain chewing exercises. Latest follow up revealed no recurrent stone formation

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CONCLUSION

Large submandibular ductal calculi are fairly rare clinicoradiological cases. We encountered one such case and presented it.

Though conventional radiology clinches or complements the diagnosis, we can go for USG/CT to rule out upstream complications and secondary malignant changes.

References

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