



CASE STUDY

GIANT SUBMANDIBULAR SIALOLITH AND RESIDUAL CYST ON CONTRALATERAL SIDE: A CASE REPORT OF TOOTH LIKE STONE

*Dr. Harshita Rai, Dr. Vaishali Keluskar, Dr. Shivayogi Charantimath and Dr. Anjana Bagewadi

Department of Oral Medicine and Radiology, KLE Institute of Dental Sciences, KAHER KLE Academy of Higher Education and Research, KLE University, Belagavi Karnataka, India

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ABSTRACT

Sialolithiasis has been reported to be the most common disease of the salivary gland affecting 12 individuals per 1000 of the adult population. It is the most common cause of acute and chronic infections of salivary gland and accounts for greater than 50% of the diseases involving large salivary glands. Sialolith greater than 15mm in any one dimension or 1 gram in weight have been classified as giant sialoliths in literature. Residual cyst may be radicular, dentigerous or any other cyst which persists after the removal of its associated tooth. They account for approximately 10% of all odontogenic cysts and are usually asymptomatic. The aim to the present article is to report simultaneous occurrence of giant submandibular sialolith with unusual shape and residual cyst on the contralateral side. The interesting point to note is the strikingly similar appearance of sialolith to canine.

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INTRODUCTION

Salivary gland stones are calcified organic matter occurring within the secretory ducts salivary glands. It has been reported to be the most common disease of the salivary gland (Leung *et al.*, 1999) and is the most common cause of acute and chronic infections of salivary gland. (Zenk *et al.*, 1994) Males are affected twice as commonly to the females (Cawson and Odell, 1998) and there is an increased predilection towards individuals in the middle age group. Submandibular gland is most commonly involved followed by parotid, sublingual and minor parotid glands. Sialoliths greater than 15mm in any one dimension or 1 gram in weight have been classified as giant sialoliths in literature. (Raveenthiran and Hayavadana Rao, 2004) Residual cyst may be radicular, dentigerous or any other cyst which persists after the removal of its associated tooth. They are more commonly seen in maxillary anterior region. (Sridevi *et al.*, 2014) The aim to the present article is to report a case of giant submandibular sialolith and residual cyst on the contralateral side. The interesting point to note is the strikingly similar appearance of sialolith to canine.

Case History

A 52 year old male patient reported with the chief complaint of pain in left lower back region of jaw since 3 month following which he underwent extraction with respect to 36 which was grossly carious. Patient reported decrease in pain following extraction for 15 days, but recurred thereafter.

Clinical examination

Extraoral examination did not reveal any facial asymmetry or swelling (Fig.1). On intraoral examination grossly decayed 35 and root stump with respect to 37 region was present along with obliteration of the buccal vestibule in 35 to 37 region (Fig.2).

Examination of the floor of the mouth revealed a solitary, localized swelling on right side extending from the lingual frenum to the distal aspect of 45. (Fig. 3) No history of pain or discharge was associated with the swelling. Patient reported mild increase in size during mealtimes. On bidigital palpation, the swelling was non tender and hard in consistency. No clinical signs and symptoms associated with decreased salivation were present. Based on the history and clinical presentation, provisional diagnosis of obstructive sialolithiasis involving right submandibular gland was established.

*Corresponding author: Dr. Harshita Rai,

Department of Oral Medicine and Radiology, KLE Institute of Dental Sciences, KAHER KLE Academy of Higher Education and Research, KLE University, Belagavi Karnataka, India.



Fig. 1. Extraoral profile of patient showing no evidence of swelling



Fig. 2. Obliteration of buccal vestibule w.r.t 35-37 region



Fig. 3. localised solitary swelling in the floor of mouth

Investigations

IOPAR with respect to 35-37 region revealed a well-defined oval shaped radiolucency with corticated boundary. The

epicenter of the cystic radiolucency was located in the periapical region of the former involved 36 which was extracted due to caries (Fig.4). Mandibular occlusal radiograph revealed a well-defined cylindrical shaped radiopacity with respect to 44-47 (Fig. 5). Similar findings were noted in OPG, which revealed a well-defined cystic lesion with respect to 36 to 37 region.



Fig. 4. IOPA revealing well defined unilocular radiolucency with discontinuity in superior aspect

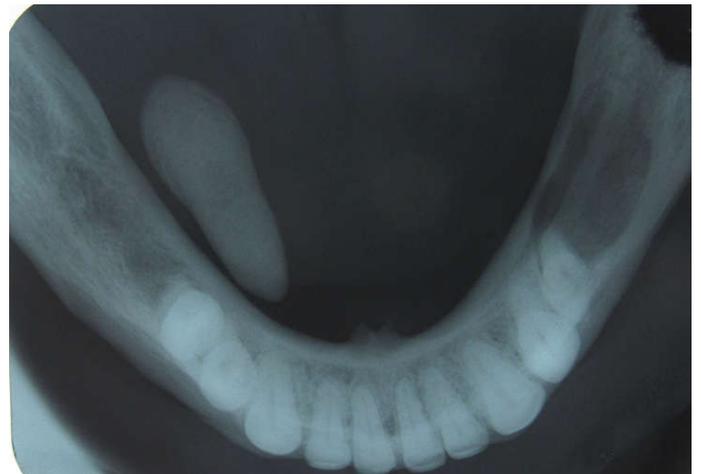


Fig. 5. Mandibular occlusal radiograph with canine like sialolith in the floor of the mouth



Fig. 6. OPG revealing sialolith of submandibular duct on right side and residual cyst on left side with perforation

Treatment

Patient was referred to the department of oral and maxillofacial surgery where surgical removal of the sialolith (Fig. 7) and surgical enucleation of the cyst was carried out. (Fig. 8) was carried out. The removed stone measured around 25 mm in the anteroposterior dimension, tapering in shape with rough surface and light yellow in colour (Fig.9). The histopathology findings of the cystic lining were suggestive of Radicular Cyst.



Fig. 7. Sialolith in wharton's duct after exposure



Fig. 8. Perforation of buccal cortical plate w.r.t 34-37 region



Fig. 9. Surgically removed sialolith measuring approximately 25mm

The internal structure revealed well defined radiolucency within the cystic lesion suggesting perforation. Radiopacity was present extending from the 43 to 46 region mimicking tooth like structure (Fig. 6). Based on the history, clinical and radiographic examination diagnosis of right submandibular sialolith and residual cyst with respect to 36 region was made.



Fig. 10. Post-operative OPG

Follow up

No recurrence of either the cyst or sialolith was noted in a period of one and a half year (Fig. 10). Salivary flow of the patient was optimum and no signs of xerostomia were noted.

DISCUSSION

The degree of severity of sialolithiasis can be correlated to the degree of obstruction in the salivary duct. (Williams, 1999) In the present case, the patient did not report any history of associated pain or tenderness in the gland. The asymptomatic nature of the disease could be responsible for the giant size of the calculi as the patient did not seek medical consultation earlier and it was an incidental finding. Gonçalves *et al.* (2002) have reported a case with unusual shape of sialolith but only one such case with canine-like appearance has been reported previously in the literature. (Gupta *et al.*, 2013) Imaging modalities are very helpful in detecting the presence of salivary gland calculi. A standard mandibular occlusal radiograph best demonstrates the stone. Other methods include sialography, ultrasonography and CT scan. Ultrasonography is usually indicated to located small calculi and when sialography cannot be performed due to acute sialadenitis secondary to sialolithiasis. Various treatment options are available depending on the extent and severity of the disease. During the acute phase treatment is primarily palliative. Surgical intervention is indicated only after the acute phase has subsided. Sialendoscopy is a latest treatment modality which facilitates the removal of deep seated stones without compromising the gland. It can be used alone or in conjunction with piezoelectric extracorporeal shock wave lithotripsy. (McGurk *et al.*, 2005) Residual cysts are of inflammatory origin which occurs primarily in periapical position and persist after the removal of associated teeth. Radiographically, the cysts appear as well defined radiolucencies with sclerotic margins. Occasionally, in long standing cystic lesions radiopaque masses of calcification may be appreciated which range in size from barely perceptible masse to larger masses rarely crossing 0.5 cm. (White and Pharoah, 2006) One such case was reported by Sridevi *et al* where the cyst was associated with calcifications in an elderly patient. (Sridevi *et al.*, 2014) In the present case however, internal structure was homogeneously radiolucent. In cases

involving calcification, a differential diagnosis of mixed radiopaque - radiolucent lesions such as odontomas, fractured root tips with secondary infections, intermediate stages of periapical cemento osseous dysplasia, adenomatoid odontogenic tumour and calcifying epithelial odontogenic tumours should also be taken into account. (Sridevi *et al.*, 2014)

Conclusion

With the advent of newer imaging modalities like ultrasonography, CT, CBCT, sialography etc. the field of imaging science in dentistry has come a long way, but the conventional imaging techniques still retain their popularity and continue to be the first investigation of choice. A case of giant sialolith and residual cyst has been reported which was diagnosed and treated using conventional radiographic techniques with no postoperative complication.

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