

Case Report

Submandibular duct sialolithiasis of unusual size: a case report

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ABSTRACT

Sialolithiasis is the most common disease of the salivary glands. Majority of sialoliths occur in the submandibular gland. Considering the literature, most stones are less than 5 mm, and stones more than 10 mm are quite unusual. We present a case report of a 37 year old male who had a stone of 11×8 mm near the orifice of the right submandibular duct which was removed via transoral incision.

Keywords: Sialolithiasis, Submandibular gland, Submandibular duct, CT scan

INTRODUCTION

Sialolithiasis is one of the common disease of the salivary glands in middle aged individuals.¹ Approximately 12 per 1,000 patients are affected by this condition, with a slight male predominance.² Majority of sialoliths occur in the submandibular gland or its duct. According to Levy et al, prevalence of sialolithiasis in submandibular glands is 80%, in parotid is 19%, and in sublingual glands is 1% and sialolithiasis is a common cause of acute and chronic infections of the glands.¹ Sialoliths are clinically round or ovoid, rough or smooth, usually unilateral and yellow in color.³ On the basis of literature review, most of the sialoliths are usually of 5 mm in maximum diameter and all the stones over 10 mm should be reported as a sialolith of unusual size.⁴ The purpose of this paper is to present a case of unusual size of submandibular duct calculi.

CASE REPORT

A 37 year old male present with pain and mild swelling in the floor of mouth since few months. On bimanual palpation there was a distinct swelling in the floor of the mouth on the right side of the frenulum. Contrast-

enhanced computed tomography (CECT) neck and mandible shows that the right submandibular duct is dilated and a hyperdense well defined rounded focus of 11×8 mm noted near opening of right submandibular duct at the level of side of frenulum of tongue possibly a right submandibular sialolith (Figure 1).

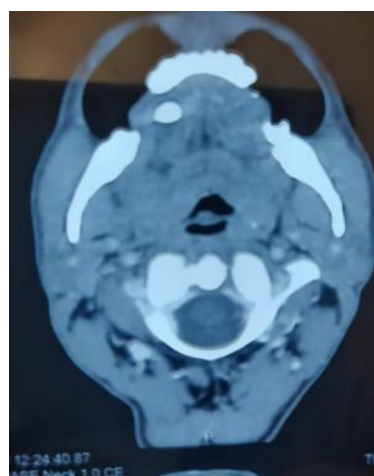


Figure 1: CECT neck and mandible shows calculi located near the opening of right submandibular duct.



Figure 2: Submandibular calculus removed from the right submandibular duct.

After doing preanaesthetic checkup and preoperative investigations patient was taken up in OT under general anaesthesia. A incision was given on the duct over the swelling on the right side of frenulum after ligating the proximal end of the duct with a silk suture and using a freer elevator the stone was delivered (Figure 2). The silk suture used for ligation was removed and incision closed. Patient has been followed up and no recurrence noted.

DISCUSSION

Sialoliths are the most widespread illnesses of the salivary glands. Salivary calculi can vary in size, shape, texture, and consistency; they may be solitary or multiple. One of the main inflammatory disorders of the major salivary glands is obstructive sialadenitis with or without sialolithiasis. Salivary calculi are commonly found in submandibular gland or its duct. Submandibular sialolithiasis occurs as a result of a hampered flow due to inflammatory stenosis of Wharton duct. Some of the anatomical factors associated with the formation of sialoliths in the submandibular gland are Wharton duct is the longest and tortuous among the salivary gland ducts, path of the duct ascends against gravity and the main portion of the duct is wider than the orifice, saliva of submandibular gland is alkaline and rich in mucin, and favors initiation of formation of sialolith.^{1,5}

Sialolith develop from calcified concretions, when minerals form around organic matrix in salivary ducts or gland. There are many theories put forwarded to explain sialolith, such as calcification around foreign bodies, desquamated epithelial cells, and presence of microorganisms in the duct. Alkaline pH, mucin content of saliva, and high calcium concentration in submandibular gland can describe the pathogenesis of sialolith formation.⁶ On basis of review of the literature, most sialoliths are usually five mm in maximum diameter and all the stones more than 10 mm should be reported as

unusual size.⁴ The age in the cases reviewed ranged from 21 to 75 years with average 51.4 years.⁷ The diagnosis of sialolith can be made by history, clinical, and radiological examinations. Pain and swelling of involved gland during meal times are generally associated with sialolithiasis. A palpable stone may be revealed during bimanual examination in most of the cases. The case, in this study, had a history of swelling and pain in the floor of mouth with no relation between pain and meal. Occlusal radiography, sialography, orthopantomogram, ultrasonogram, CT scan, and MRI neck have been advocated as investigation to confirm or rule out sialolithiasis. The mode of treatment depends upon the size of stone, its location, number of stone, and whether the stone is impacted or mobile. Submandibular duct catheterization and dilatation or removal by manipulation becomes first choice for small sialoliths located near the orifice of the submandibular duct. When located up to the anterior half of the duct, they are generally treated by conservative surgery, preferably via an intraoral approach.⁸ Kandel et al reported a stone of unusual size located near the opening of the submandibular duct which was removed intraorally.⁹ If the stones are located more posterior in the intraglandular portion of the duct, the entire gland must be removed.^{8,10} Sengupta et al reported a stone of unusual size about 12×6 mm located in the proximal part of the submandibular duct which was removed along with the submandibular gland.¹¹ In our case surgical removal of the stone via transoral incision was done since the stone was near to the orifice.

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