Case Report

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Spontaneous Expulsion of an Asymptomatic Large Sub-mandibular Salivary Gland Calculus: A Case Report

General Surgery Section

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ABSTRACT

Sialolithiasis is the most common disease of the salivary glands and the sub-mandibular gland is the commonest one to be affected. Sialoliths commonly measure less than 10 mm in size and stones larger than that are considered to be of an unusual size. They usually present with pain, swelling and recurrent infections of the affected gland. Various treatment modalities, mainly surgical, have been described for their management. However, for small stones, medical therapy and spontaneous expulsion of the calculus have also been described. This case report describes a relatively large sized stone that was spontaneously expelled without any therapy and was asymptomatic also prior to its expulsion. The relevance of conservative medical therapy has been discussed briefly.

Key Words: Sub-mandibular calculus, Spontaneous expulsion, Asymptomatic

INTRODUCTION

Salivary lithiasis is a condition which is characterized by the obstruction of the salivary gland or its excretory duct by a calculus, which is associated with pain, swelling and infection of the affected gland, resulting in salivary ectasia and even provoking subsequent dilatation of the salivary gland [1]. Most of the salivary calculi (80%-95%) occur in the sub-mandibular gland, whereas 5% to 20% are found in the parotid gland. The sublingual gland and the minor salivary glands are rarely (1%-2%) affected [2].

The clinical symptoms are clear and they allow an easy diagnosis. However, it must be taken into account that pain is only one of the symptoms and that it does not occur in 17% of the cases [3]. The symptom is, obstruction of the salivary flow, which may be presented mainly at the meal time as pain and a swelling proximal to the stone obstruction area [4].

Sialoliths commonly measure between 5 and 10 mm in size, and all stones which are larger than 10 mm can be reported as sialoliths of unusual sizes [5]. Various methods are available for the management of salivary stones, depending on their locations and sizes. If the stone is small, a conservative management may be attempted with local heat, massage and sialogogues [6]. These cases can be combined with simple sialolithotomy whenever they are required [7]. However, if the stone had formed within the gland or if the gland had been damaged by recurrent infections and fibrosis, then surgical excision of the gland would be required.

We are reporting here a case of a 10 mm long and 5 mm wide sub-mandibular gland stone, that was spontaneously expelled and was completely asymptomatic prior to its expulsion. This is a rare presentation for such a large sized stone.

CASE REPORT

A 37-year old male patient presented to the out patients department with the complaint of a stone which was coming out from inside of his lower gums. Prior to that, he had discomfort with slight pain in the sublingual area for 2-3 days. He had not noticed any swelling in that area nor did he have any other complaint. There was no past history of episodes of pain or swelling in the oral region. On examination, the orifice of the Wharton's duct on the left side was found to be dilated, with surrounding redness. Also, there was mild tenderness in that area, along with slight swelling of the left sub-mandibular gland. The gland on the other side and the remaining salivary glands were unremarkable. The extruded stone was oval, granular, brownish in colour, 10 mm in length and 5 mm wide [Table/Fig-1]. The X-ray of the sub-mandibular region did not demonstrate any other calculus.

[Table/Fig-1]: Sialolith expelled from the left submandibular duct, measuring 10 mm × 5 mm.

The patient required no active treatment and he was advised mouthwashes and oral analgesics (if needed). He has been symptom-free during the four months of the follow-up.

DISCUSSION

The sub-mandibular gland is more susceptible to the development of salivary calculi than other glands, because the salivary flow is against gravity, the Wharton's duct is long and wide, and because the saliva is more alkaline and rich in mucin as compared to the other glands [8]. The ability of a calculus to grow in size depends mainly on the reaction of the affected duct. If the duct which is adjacent to the sialolith is able to dilate, allowing nearly normal secretion of saliva around the stone, the sialolith might increase in size to become a giant calculus and it may also remain asymptomatic for a long period [9]. In the present case also, there might have

been a wide Wharton's duct that could explain the large size of the calculus and also the asymptomatic presentation prior to the spontaneous expulsion.

The treatment of sub-mandibular sialolithiasis is surgical removal of the calculus or complete excision of the gland. Alternative methods of treatment have also emerged, such as extra-corporeal shock wave lithotripsy and more recently, endoscopic intra-corporeal shockwave lithotripsy [10]. However, for small stones, a conservative management that includes proper hydration, heat massage and sialogogues, resulting in either the spontaneous expulsion or the removal of the stones through simple sialolithotomy, has also been described [6, 11].

Walsh and Robson [12], Lozano Blasco J et al., [13] and McCullom et al., [14] have described the spontaneous passage of sub-mandibular gland calculi in children. Adiga [15] described a similar passage of a sub-mandibular calculus in a 35-year old male patient. In these reports, the patients were symptomatic, and the stone was either small or some form of conservative treatment was given. However, in the present case, the patient was asymptomatic and the expulsion was spontaneous for a relatively large sized stone.

The spontaneous passage of a sub-mandibular duct stone has been described as uncommon, because the opening of the Wharton's duct is smaller than the lumen; thus forming a sphincter which will obstruct the passage of the stone [16]. A conservative medical treatment instead of surgery has also been described only for small stones, as the medium or large sized stones cannot be spontaneously expelled [11] However, such an expulsion of the sub-mandibular salivary stones may not be uncommon and medical treatment can always be kept as an option, depending on the size of the stone. Although for salivary stone lithotripsy, it has been suggested that the best results were achieved when the maximum size of the stone fragments did not exceed 1.2 mm [17], any such criteria for the spontaneous expulsion of a stone has not been defined. Such an expulsion may probably be dependent on the size of the stone which was relative to the duct width and also on the exact site of the stone formation.

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