

Case Report

A case report on meal time syndrome

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Received: 02 February 2019

Revised: 15 March 2019

Accepted: 18 March 2019

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ABSTRACT

Sialolithiasis is the formation of calculi within the parenchyma of salivary gland or its duct. These cases present with pain and swelling of salivary gland. The exact aetiology of salivary stones is not completely understood and various hypotheses have been put forward. They include agglomeration of sialomicrooliths, anatomical variations of salivary ducts and altered biochemical composition of saliva. Here we are reporting a case of 45 year old gentleman with a giant sialolithiasis in submandibular region. He came with pain and pus discharge from left side of floor of mouth for one week. On inspection a bludge was seen in left side of floor of mouth. On bimanual palpation, a stony hard mass was felt which was tender and not mobile. Under local anaesthesia surgical removal of stone done. Sialoliths are equally distributed between left and right side of the oral cavity. Mean size of sialolith is reported as six to nine mm and they infrequently measure more than 1.5 cm. The majority of salivary calculi is formed from phosphate and oxalate salts. Sialography allows whole duct system to be visualised, demonstrating calculi of all sizes and also the glandular percentage. Sialodochotomy is a well-reported technique for the intra-oral removal of ductal stones, including giant calculi. Giant sialolith is a rare entity worth reporting. Though conventional methods are still useful for diagnosis and therapy many innovative techniques are evolving around it.

Keywords: Sialolithiasis, Meal time syndrome, Salivary gland, Sialography, Sialoliths

INTRODUCTION

Sialolithiasis is the formation of calculi within the parenchyma of the salivary gland or its duct.¹⁻⁴ The term is derived from Greek words “Sialon” which means saliva and “Lithos” which means stone.⁴

Most cases present with pain and swelling in submandibular region during meal time and hence the name meal time syndrome.^{5,6} The symptoms are pronounced when a stone is located in duct than in gland.⁷ It is caused by obstruction of salivary flow in affected gland, resulting in accumulation of saliva and subsequent increase in intra- glandular pressure, which in turn leads to destruction of salivary gland and formation of connective tissue. The mean duration of symptoms is

approximately five years and four months. Stones usually have yellow or yellow-brown colour.⁵ The weight of stones varies from 1 mg to 6 g, with an average weight of 300 mg.³ They are considered as ‘giant salivary stones’ when the diameter is 15 mm or more in any direction or when the weight is 1 g or more. Giant salivary stones are usually located in the glandular parenchyma and are rarely found in Wharton’s ducts.³ The exact aetiology of salivary stones is not completely understood and various hypotheses have been put forward. They include agglomeration of sialomicrooliths, anatomical variations of salivary ducts and altered biochemical composition of saliva.³

Here we are reporting a case of 45 year old man with a giant sialolithiasis in the submandibular region.

CASE REPORT

A 45 year old gentleman came with chief complaints of pain and pus discharge from left side of floor of mouth for one week. He was apparently normal before 10 years. Then he felt a hard mass like sensation over the left side of the floor of mouth which was gradually increasing in size. On inspection a bludge was seen in left side of floor of the mouth. The area was congested with minimal pus which was yellowish in colour and foul smelling. On bimanual palpation, a stony hard mass was felt which was tender and not mobile, not fluctuant and not allowing light to pass through. Diagnosis of left sialolithiasis was made and advised surgical removal under local anaesthesia. After getting informed written consent, the surgical removal was done. Under local anaesthesia of 2% xylocaine and adrenaline a small nick is made on the mucosa over floor of the mouth. The stone was identified and milked out.



Figure 3: On postoperative day 14.



Figure 1: Intraoperative visualisation of sialolith.



Figure 2: Sialolith after removal.

Table 1: Macroscopic appearance of the stone.

Size	3 cm × 2 cm × 1.5 cm
Colour	Yellow
Surface	Medial surface: smooth Lateral surface: irregular
Shape	Elongated oval

Postoperatively patient was treated with intravenous antibiotics and analgesics for 3 days. Patient was followed up after one week and after a month. Patient relieved from all his symptoms.

DISCUSSION

The estimated prevalence of sialolithiasis in United Kingdom is 0.45% in an average life expectancy of 76 years.³ Sialolithiasis is most common in fourth and fifth decade of life.³ Recent studies reported an almost equal distribution of salivary stones between men and women.³

Salivary stones are equally distributed between left and right side of the oral cavity.^{2,3} In 70–80% of patients a single stone is found.³ Submandibular gland is the most commonly involved gland among salivary glands with an incidence of 80%.^{8,9} Submandibular stones are usually located in duct (80–90%), of which 57% is located in hilum and 34% is located in distal duct.³

In 90% of patients with a salivary stone, infection of affected gland is present and in 12–18% a purulent discharge is seen.⁸

The exact aetiology of salivary stones is not completely understood, and various hypotheses have been put forward. These include the agglomeration of sialomicrooliths, anatomical variations of the salivary ducts and an altered biochemical composition of saliva.³ It is considered that salivary stasis or decreased salivary

flow contributes to precipitation of calcium. Wharton's duct is longer and has a bow-shaped course in the cranial direction.³ This results in a flow against gravity, which may facilitate stasis of submandibular saliva.⁵ Mineralisation is supported by accumulation of calcium and an increase in pH.³ It is considered that salivary stasis or decreased salivary flow contributes to the precipitation of calcium.

The presence of salivary calculi obstructing the outflow of saliva by blocking the duct of the gland causes acute and recurrent swelling of salivary glands in adults.^{3,10,11} The submandibular gland is commonly affected.¹⁰ The higher rate of giant sialolith formation in this gland is due to:

- Tortuous course of Wharton's duct.
- Higher calcium and phosphate levels.
- Dependent position of submandibular gland.¹¹

The aetiological theories proposed for salivary gland formation include inflammatory, infective, mechanical, neurogenic and chemical.¹⁰

Etiology for giant sialolith formation deserves special mention of two theories.¹¹

- Retrograde migration of food, bacteria and foreign bodies from the oral cavity provides a nidus for calcification.
- Existence of intracellular microcalculi when excreted into ductal system may act as a nidus for further calcification.

Mean size of sialolith is reported as six to nine mm and they infrequently measure more than 1.5 cm. The majority of salivary calculi is formed from phosphate and oxalate salts.¹¹

The initial focus acts as a catalyst that attracts and supports the deposition of different substances. Subsequently, most giant salivary calculi adopt an oval or elongated shape.

Sialography allows the whole duct system to be visualised¹, demonstrating calculi of all sizes and also glandular damage from chronic obstruction. Ultrasound provides an excellent, non-invasive method of detecting sialoliths. Stones that are greater than 1.5 mm and of high mineral content are reported to be identifiable on ultrasound with an accuracy of 99%.¹⁰ Sialodochotomy is a well-reported technique for intra-oral removal of ductal stones, including giant calculi. Also, when multiple small stones are present in vertical and comma portions of Wharton's duct, sialadenectomy is recommended. Excision of gland is reported to carry a risk of up to 8% for temporary or permanent marginal mandibular nerve palsy.¹⁰

Sialendoscopy is the latest mode for diagnostic and therapeutic purpose for case with salivary gland obstruction. Another mode of recent treatment is excision of gland using CO₂ laser.¹¹

CONCLUSION

Giant sialolith is a rare entity worth reporting. Though conventional methods are still useful for diagnosis and therapy many innovative techniques are evolving around it.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

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Cite this article as: Jacob A, Regina. A case report on meal time syndrome. *Int J Otorhinolaryngol Head Neck Surg* 2019;5:794-6.