

A giant submandibular sialolith of wharton's duct: A case report

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Abstract

We report a rare case of a Giant sialolith measuring 74 mm in size and weighing approximately 35 grams which came to our ENT Outpatient Department with complaints of pain in the submandibular area and swelling in that area while eating since last 2 years which he neglected so far.

Keyword: Sialolithiasis, Giant Sialolith, Wharton's Duct.

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INTRODUCTION

Sialoliths are calcified matter (calculi) seen in the gland parenchyma or its duct. The process by which these calcareous materials are formed in the parenchyma /duct is called as Sialolithiasis. Commonly sialoliths measure in size from 5 to 10 mm. Giant sialoliths measuring from 35 mm and above are extremely rare and only 18 cases had been published so far in literature. Sialolithiasis accounts for more than 50% of the salivary gland diseases, with an estimated 12 of 1,000 persons in the adult population being affected every year.¹ Most salivary calculi (80%-95%) occur in the submandibular gland, whereas 5% to 20% are found in the parotid gland.² The

sublingual gland and minor salivary glands are rarely (1%-2%) affected.² Male patients are affected twice as much as female patients.³ Multiple calculi in the submandibular gland are rare, as is simultaneous lithiasis in more than 1 salivary system.⁴ Radiopacity is not a feature in 40% of parotid and 20% of submandibular stones; therefore sialography or other imaging techniques (computed tomography scan, ultrasound) may be required to locate them.³ Clinically, the stones are round or ovoid, rough or smooth, and of a yellowish color. They consist of mainly calcium phosphate with small amounts of carbonates in the form of hydroxyapatite, as well as smaller amounts of magnesium, potassium, and ammonia.⁵ Submandibular stones are composed of 82% inorganic and 18% organic material, whereas parotid stones are composed of 49% inorganic and 51% organic material.⁴ Sialoliths commonly measure between 5 and 10 mm in size, and all stones over 10 mm can be reported as sialoliths of unusual size.⁶ Giant sialoliths measuring more than 35 mm are rare, with only around 16 cases published in the literature. Ninety four Ninety four percent of the giant sialoliths reported were in the submandibular gland.⁷



Figure 1: Clinical photograph of pt. showing swelling in left submandibular area



Figure 2: Clinical photograph showing giant sialolith



Figure 3: Clinical photograph showing transoral sialolithotomy performed to retrieve sialolith.

Table 1: Giant sialoliths measuring more than 55 mm or weighing more than 20 g reported in literature

| Study | Gender | Age(yr) | Gland Location | Size (mm) | Weight (g) |
|--|--------|---------|-------------------------|-----------|------------|
| Mustard, ⁸ 1945 | M | 42 | SBM Duct | 56 | NR |
| Cavina and Santoli, ⁹ 1965 | M | 59 | SBM Duct | 70 | 18 |
| Cavina and Santoli, ⁹ 1965 | M | 53 | SBM Duct and parenchyma | 60 | 33 |
| Raskin <i>et al</i> , ¹⁰ 1975 | M | 52 | SBM Duct | 55 | 9.5 |
| Tinsley, ¹¹ 1989 | M | 48 | SBM Parenchyma | 50 | 23.5 |
| Current study | M | 41 | SBM Duct | 72 | 35 |

Abbreviations: M: Male; SBM: Submandibular gland; NR: Not Reported

DISCUSSION

Giant sialoliths are rare findings in clinical oral pathology, with sizes ranging from 35 to 70 mm and all of them occurring in male patients.⁷⁻¹¹ Although giant sialoliths have been reported in the salivary glands, they have rarely been reported in the salivary ducts.¹ The largest sialolith reported in the literature was 70 mm in length in Wharton’s duct and was Calcification, however, can also be visualized very early by use of a computed tomography scan, which is sensitive even to stones that are radiolucent on standard radiographs.¹³ Although the standard occlusal radiograph is the most reliable method of viewing the submandibular sialolith, the region visualized is limited posteriorly to the second molar, making it unsuitable for giant sialoliths, which occur frequently in the posterior portions of Wharton’s duct. The posterior fourth of the duct, which includes the comma area to the hilum and body of the gland, can be visualized only by placing the x-ray cone posterior to the gland and directing it in an upward, anterior, and slightly medial direction.¹⁴ In our report the standard occlusal view did not show any sialolith because the stone was located in the comma area of Wharton’s duct; therefore a panoramic radiograph was taken to show the sialolith of this remarkable size. The treatment objective for giant sialoliths, as for the standard-sized stones, is restoration of normal salivary secretion. The giant sialolith should be removed in a minimally invasive manner, via a transoral

sialolithotomy, to avoid the morbidity associated with sialadenectomy.² Whenever the stone can be palpated intraorally, it is best to remove it through an intraoral approach.¹ The cardinal rule when performing stone removal from Wharton’s duct is to first isolate the duct and then provide a longitudinal incision into the duct over the stone to retrieve it.¹⁴ By direct cut down of the stone, the initial incision is taken directly to the depth of the stone without primary isolation of the duct. Direct cut down is not advised because of the risk of ductal stenosis, except when the sialoliths are at the orifice of the duct or when there is a large stone in the submandibular gland pushing the gland upward and anteriorly.¹⁴ More posterior stones, 1 to 2 cm from the punctum, can be removed by cutting directly into the stone in the longitudinal axis of the duct while carefully protecting the lingual nerve. However, for giant sialoliths, transoral sialolithotomy with sialodochoplasty or sialadenectomy remains the mainstay of management.

REFERENCES

1. Leung AK, Choi MC, Wagner GA: Multiple sialoliths and a sialolith of unusual size in the submandibular duct: A case report. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 87:331, 1999
2. Bodner L: Giant salivary gland calculi: Diagnostic imaging and surgical management. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 94:320, 2002

3. Cawson RA, Odell EW: Neoplastic and non-neoplastic diseases of the salivary glands, in *Essentials of Oral Pathology and Oral Medicine* (ed 6). Edinburgh, Churchill Livingstone, 1998, pp239-240
4. Zenk J, Benzel W, Iro H: New modalities in the management of human sialolithiasis. *Minim Invasive Ther* 3:275, 1994
5. Williams MF: Sialolithiasis. *Otolaryngol Clin North Am* 32:819, 1999
6. Batori M, Mariotta G, Chatelou H, *et al*: Diagnostic and surgical management of submandibular gland sialolithiasis: Report of a stone of unusual size. *Eur Rev Med Pharmacol Sci* 9:67, 2005
7. Ledesma-Montes C, Garcés-Ortíz M, Salcido-García JF, *et al*: Giant sialolith: Case report and review of the literature. *J Oral Maxillofac Surg* 65:128, 2007
8. Mustard TA: Calculus of unusual size in Wharton's duct. *Br Dent J* 79:129, 1945
9. Cavina C, Santoli A: Some cases of salivary calculi of particular interest [in Italian]. *Minerva Stomatol* 14:90, 1965
10. Raskin SZ, Gould SM, William AC: Submandibular gland sialolith of unusual size and shape. *J Oral Surg* 33:142, 1975
11. Tinsley G: An extraordinary large asymptomatic submandibular salivary calculus. *Br Dent J* 166:199, 1989
12. Paul D, Chauhan MS: Salivary megalith with a sialo-cutaneous and sialo-oral fistula: A case report. *J Laryngol Otol* 109:767, 1995
13. Mandel L, Hatzis G: The role of computerized tomography in the diagnosis and therapy of parotid stones: A case report. *J Am Dent Assoc* 131:479, 2000
14. Baurmash H: Submandibular salivary stones: Current management modalities. *J Oral Maxillofac Surg* 62:369, 2004
15. Yoshimura Y, Morishita T, Sugihara T: Salivary gland functions after sialolithiasis: Scintigraphic examination of the submandibular glands with 99m Tc-pertechnate. *J Oral Maxillofac Surg* 47:704, 1989

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