

原文題目(出處)：	Giant Salivary Gland Calculi (GSGC): Report Of Two Cases. The Open Dentistry Journal 2011;5:90-5
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Abstract:

- Sialolithiasis is the most common disease of salivary glands.
- Infrequently giant salivary gland calculi (GSGC) >15 mm have been reported in the literature.

Introduction:

- Salivary lithiasis is a condition characterized by the obstruction of salivary gland or its excretory duct by a calculus or sialolith associated with: swelling, pain, and infection of affected gland.
- Pain is only one of the symptoms and that it does not occur in 17% of the cases.
- Sialolithiasis accounts for 30% of salivary diseases.
- It affects submandibular gland 80% to 95%, parotid gland 5% to 20%, sublingual and minor salivary glands 1% to 2%.
- Prevalence: 30~60 y/o, male.
- Size: 7.6% are larger than 15 mm; giant salivary gland calculi (88%) are less than 10 mm in diameter.
- Aetiological hypotheses: mechanical, inflammatory, chemical, neurogenic, infectious, strange bodies.
- Amorphous tricalcic phosphate crystallized and transformed into hydroxyapatite becomes the initial focus.
- Patients should be educated by emphasizing the value of hydration and excellent oral hygiene, which lessens the severity of the attacks and prevents dental complications.

Case Reports:

Patient A.

- Female 40 years old, healthy medical conditions, no smoker. The patient was referred from her dentist with a diagnosis of trigeminal pain, probably caused by an impacted tooth.
- She also referred from 21 days difficulty on breathing and foul-tasting mouth.

- She had a history of having episodes of left submandibular swelling occurring with meals. These symptoms disappeared within relatively short period, never more than 2 hours.



Fig. (1a). Orthopantomography showed long radiopaque mass appearing like an impacted lower right canine.



Fig. (1b). Preoperative intra-oral examination.

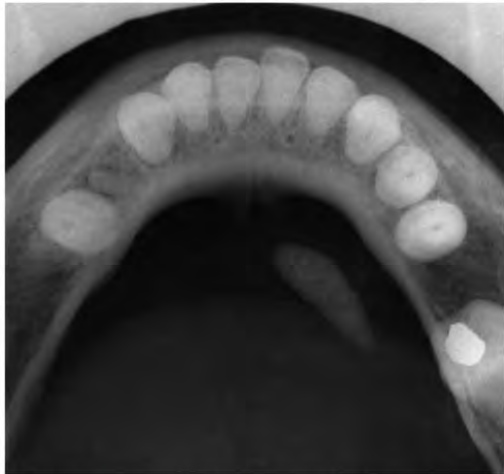


Fig. (1c). Trans-occlusal endoral radiography showed a radiopaque formation within the Wharton's right duct.

- N.S.A.I.D. and Antibiotics (Amoxicillin 1g 1x2 and ibuprofen 600mg x3) were prescribed for a period of 6 days. Once the symptoms were controlled, the surgical removal of the calculus was planned.

- Under regional anaesthesia, once the sialolith had been located, it was distally fixed with a suture in order to prevent any movement along the duct during the surgical procedure.

- The orifice of the salivary duct was surgically enlarged with an about 8 mm long incision.



Fig. (1d). The orifice of the salivary duct was surgically enlarged with an about 8 mm long incision.



Fig. (1e). A small pressure exerted at the level of the distal ligature provoked the discharge of the sialolith through the incision.

- When the sialolith was out, the incised mucosa was rotated outward with an everted suture in order to keep opened the ductal orifice. The salivary flow



Fig. (1f). Warton's right duct after the sialolith removal.



Fig. (1g). Giant Submandibular sialolith, measuring 20 x 6 mm.



Fig. (1h). Incised mucosa was rotated outward with an everted suture in order to keep opened the ductal orifice.

immediately became regular .

Patient B.

- Female 51 years old, healthy medical conditions, smoker.
- Chief complaint: episodic acute

pain in left submandibular area and swelling under the tongue. These phenomena were observed at meal times and they remitted within a few hours.



Fig. (2a). Preoperative intra-oral examination showed the asymmetric appearance of the swelled floor .



Fig. (2b). Axial CT-scan shows large radiopaque mass localized within the left Warton's duct.

- Remission of the infection was achieved after a 6 days therapy with Amoxicillin 1g 1x2 and ibuprofen 600mg x3.

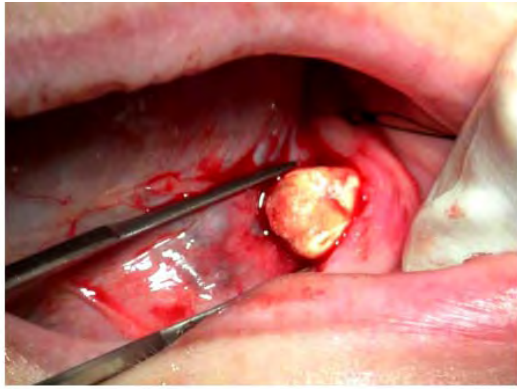


Fig. (2c). Incision along the mucosa of the mouth's floor opened the Warthon's duct.



Fig. (2d). The sialolith with a diameter of 15 mm.

Discussion:

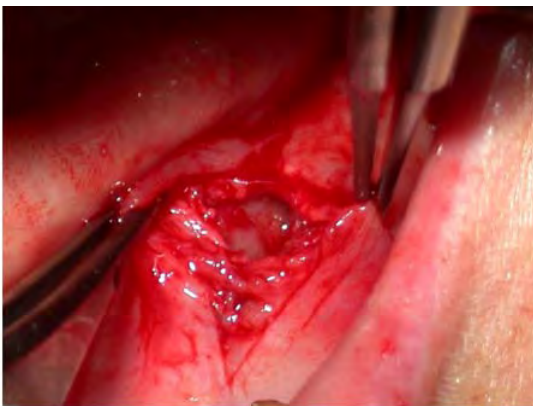


Fig. (2e). The left Warthon's duct after sialolith removal.



Fig. (2f). The suture of the incision was performed, in order to facilitate the formation of a salivary fistula.

- Sialolithiasis is a pathological condition caused by the obstruction of a salivary gland or its excretory duct by a calculus.
- The sialolith is the result of the deposition of tricalcic phosphate salts around an initial nidus that consists of altered salivary mucin, desquamated epithelial cells and bacteria.
- When the sialolith is located in a duct able to dilate and to allow a normal secretion of salivary flow around the stone, the sialolith might increase in size, becoming a giant calculus, and remain asymptomatic for a long period.
- Experimental studies have identified the increased salivary magnesium concentration as a key factor in determining the sialolithiasis.
- The deposition of salivary calculi is not associated with systemic diseases involving calcium metabolism. Gout is the only metabolic disease that predisposes, among others, to salivary stone formation.
- Bacterial infections are important factors involved into calculi's formation. Toxins produced by bacteria, can produce a local environment with pH less than 5.5, that causes tissue damage; when tissue healing processes re-establish the 7.2 pH crystallization of salivary ions,

especially calcium phosphates occurs.

- The submandibular gland is more susceptible to the development of the salivary calculi than parotid gland because:
 - ✓ The Warthon's duct is longer and wider than the Stensen's duct.
 - ✓ The salivary flow is against gravity in the submandibular gland.
 - ✓ The salivary submandibular pH is more alkaline and mucin proteins, calcium and phosphates are contained in greater amount than serous parotid saliva.
- The cases here reported (two female patients) are unusual, because the demographic data didn't coincide with those reported in literature (predilection for male patients). The pain referred by our patients was characteristic as the bad breath and foul-tasting mouth. The swelling of the gland persisted and became indurated without recovering its normal size.
- The instrumental diagnosis of sialolithiasis is based on several imaging techniques.
 - ✓ Ultrasonography represents an excellent first-level diagnostic technique because it reveals ductal and highly mineralized stones with a diameter of at least 1.5 mm with a accuracy of 99%.
 - ✓ Conventional intra-oral X-ray may be more useful than extra-oral radiography, particularly trans-occlusal endoral radiography.
 - ✓ Sialography is an adequate technique to detect salivary gland calculi that allows the visualization of the whole duct system. However, sialography is not indicated in the case of acute infections or patients sensible to contrast medium.
 - ✓ CT-Scan has become the rx examination of choice to detect gland salivary sialolith, because not invasive like sialography.
 - ✓ Sialoendoscopy is a new diagnostic means of directly visualising intra-ductal stones that has bridged the diagnostic gap between the clinical suspicion of salivary obstruction and the limitations of conventional radiology.
- The ultimate objective of giant sialoliths treatment is re-storing a normal salivary flow. Whenever the stone can be palpated intraorally, the best option is to remove it through an intraoral approach.
- A diet rich in proteins and liquids including acid food and drinks is also advisable in order to prevent the formation of further new sialolith into the salivary gland.

Conclusion:

- Giant salivary gland calculi (>15 mm) are considered rare.

- GSGC might be asymptomatic or in the most cases the patient presents episodes of salivary colic characterized by pain, localized in area of the stone, exudation and swelling in the oral cavity.
- Surgical treatment has traditionally been used as therapy to restore a physiologic salivary flow.
- The presented cases showed how practitioners should perform all the instrumental and clinical investigations in order to avoid misdiagnosis.

題號	題目
1	Sialoliths most often develop within which ductal system? (A) Submandibular gland (B) Parotid gland (C) Minor salivary gland (D) Sublingual gland
答案(A)	出處：Oral & Maxillofacial Pathology second ed.p.393
題號	題目
2	Stones in the terminal portion of the submandibular duct are best demonstrated with (A) Occlusal radiograph (B) Periapical radiograph (C) Panoramic radiograph (D) All of the above
答案(A)	出處：Oral & Maxillofacial Pathology second ed.p.393