

Right Parotid Abscess Secondary to Sialolithiasis in a Patient with Type 2 Diabetes Mellitus: A Case Report

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Abstract

One important obstructing cause of salivary gland inflammation is sialolithiasis. Most salivary calculi occur in the submandibular gland, but in cases of parotid duct calculi, facial swelling with pain may develop, and can lead to suppurative parotitis or abscess formation. We report a case of a 51-year-old type 2 diabetes mellitus patient who presented with a progressive right parotid swelling for 25 days with fever and difficulty in eating. Examination revealed a tender, warm and fluctuant swelling about 6 x 7cm and an obvious tender swelling was not found in the oral cavity, which revealed dental caries. Ultrasonography showed a bulky right parotid gland with altered echotexture, ductal dilatation, a 4-mm distal duct calculus, and a localized abscess collection. Leukocytosis, elevated C-reactive protein (CRP) and poor glycaemic control were found in the laboratory tests. Patient was treated with intravenous amoxicillin-clavulanate, analgesia, glycaemic optimization, ductal dilatation and pus removal, incision and drainage of the abscess and removal of the calculus. The authors point out that in diabetic patients who have pain, present the case of parotitis due to sialolith and outline the importance of early ultrasonic diagnosis and full drainage.

Keywords: Sialolithiasis, Parotitis, Parotid gland, Salivary duct calculus, Abscess, Diabetes mellitus.

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INTRODUCTION

Parotitis is the inflammation of the parotid gland, which can be caused by infection, loss of salivation, obstruction of the parotid duct or systemic disease. Sialolithiasis is a typical obstructive disorder of the major salivary glands that can be caused by calcium deposits in the ductal system or in the glandular parenchyma of the salivary glands.^[1,2] Submandibular gland stones are much more common than stones forming in the parotid gland; this is partly because the ductal anatomy differs from that of Wharton's duct and the salivary secretions are more serous. Obstruction leads to salivary stasis, high pressure in the salivary ducts, pain on eating, bacterial overgrowth and can lead to the formation of an abscess at times.^[3,4] The following factors may affect the ability to prevent acute suppurative infection: Diabetes mellitus, dehydration, poor oral hygiene, smoking. We report a case of a diabetic patient with right parotid abscess that developed due to parotid duct sialolith which was successfully treated by antibiotic, drainage, and calculus removal.

CASE PRESENTATION

The patient presented to the Department of General Surgery with swelling for 25 days and pain over swelling for 15 days in his right side of the face at the age of 51 years. At first small with swelling around 1 x 1 cm and slowly grew to around 6 x 7 cm. The pain was continuous, throbbing, and a

little helped by medications and more when eating or chewing. Fever was present. He had been on the register of risk group type 2 diabetes mellitus for 8 years, but had not had good glycaemic control for many years. No previous history of mumps or recurrent swelling of the parotid. He was a smoker and had alcohol occasionally.

On local examination, there was only one swelling of the right parotid region about 6 x 7 cm. in size. Overlying skin was normal in appearance. The swelling was warm, soft, tender and fluctuant. Paget's test was positive. No clinical significant cervical lymphadenopathy was found. Dental caries was diagnosed during oral cavity examinations and no spontaneous discharge was noted through Stensen's duct. Acute suppurative parotitis and the formation of an abscess was thought about.

The right parotid gland was examined by ultrasonography and was found to be enlarged and had an altered parotid echo texture. The parotid duct was dilated and a calculus was seen at its distal

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duct, the size of which was about 4 mm. Total leucocyte count: 19,300 cells/mm³, C-reactive protein was elevated, blood sugar poorly controlled and there were a few small intraparotid lymph nodes (approx. 8 mm).

Intravenous antibiotic (amoxicillin-clavulanate), pain relief, oral hygiene, hydration and glycaemic control were started at once. Ductal dilatation was done which retrieved around 5 ml of pus. Next, an incision and drainage procedure of the parotid abscess was carried out, which yielded approximately 20 mL of pus. A single 4-mm calculus was successfully removed. The patient improved clinically following drainage along with continued antimicrobial therapy and diabetic care. He was advised regular follow-up, hydration, gland massage, oral hygiene correction and Dental assessment to minimize the possibility of recurrence.

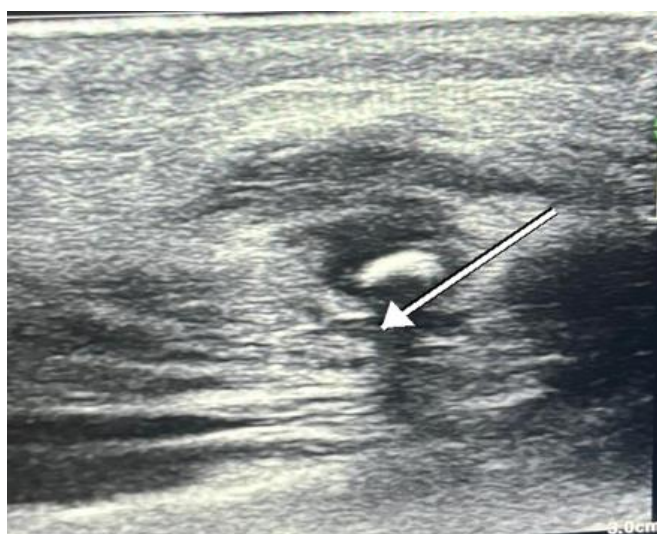


Figure 1: Clinical photograph showing right parotid-region swelling.

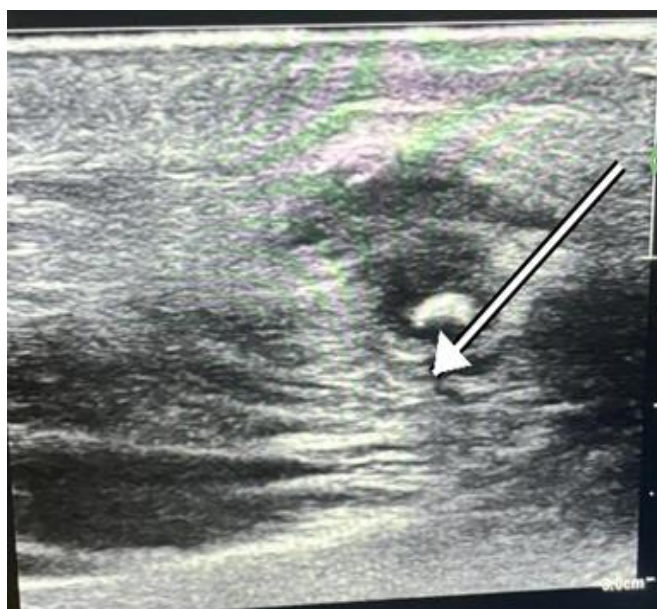


Figure 2: Ultrasonography image showing an echogenic distal parotid duct calculus with posterior acoustic shadowing (arrow).



Figure 3: Ultrasonography image showing ductal dilatation with calculus and adjacent hypoechoic inflammatory collection (arrow).

Figure 4: Intraoral photograph showing dental caries and the Stensen duct region

DISCUSSION

This case presents a rare, but clinically relevant case of parotid duct sialolithiasis which developed into an abscess. Salivary calculi are more frequent in submandibular salivary gland than in parotid salivary gland, but parotid stones may have been responsible for a considerable morbidity if there is an obstruction followed by infection.^[2,4] The history of swelling and pain that worsens with chewing is typical of an obstructive mechanism since the secretions of saliva during meals increases. This patient is an example in which chronic obstruction with diabetes related immune compromise, smoking and poor oral hygiene were factors in progression from obstructive parotitis to a suppurative collection.

For inflammatory salivary gland swelling caused by pain, ultrasonography is a helpful initial imaging tool to demonstrate gland enlargement, duct dilatation, echogenic calculi with acoustic shadowing, abscess collection, and adjacent lymph nodes.^[5,6] Deep extension, diagnosis that is not clear, suspected neoplasm and failure of the initial management may require computed tomography or magnetic resonance imaging. In this instance ultrasound was enough to give me the correct diagnosis and time enough to plan surgery.

The treatment of obstructive parotitis will depend on the size, site and access of the calculus and whether or not infection is present. Conservative treatment is given as hydrants, warm compresses, sialagogues, gland massage, analgesics and correction of dehydration and metabolic factors. If an acute bacterial infection is suspected, antibiotic therapy should be provided for common oral and staphylococcal organisms.^[7] When the abscess forms drainage is necessary. Removal of the obstructing calculus is crucial since drainage, without calculus extraction, can result in recurrent occlusion or failure.^[3,8] The current treatment strategies have shifted to non-gland removal techniques such as ductal dilatation, sialendoscopy, intraoral or combined retrieval, and various lithotripsy techniques (where appropriate).^[5,9,10] In this particular instance, ductal dilatation, incision and drainage and

removal of the calculus in the duct itself were effective and practical.

CONCLUSION

Swelling of the parotids (parotitis) in a diabetic patient should be evaluated for obstructive parotitis and parotid duct sialolithiasis. Early ultrasound, timely antibiotic treatment, good glycaemic management, proper drainage of the abscess and extraction of the blocked calculus will lead to a good clinical recovery and lower the risk of recurrence.

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Conflicts of interest

There are no conflicts of interest.

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