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Olgu Sunumu

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Case Report

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Giant Salivary Calculus of the Submandibular Gland: Report of a Case
Submandibular Bezde Dev Sialolitiazis: Olgu Sunumu

Mehmet Melih Omezli¹, Ferhat Ayranci¹, Damla Torul², Elif Sadik³

¹Ordu University, Department of Oral and Maxillofacial Surgery, Ordu, Turkey

²Ondokuz Mayıs University, Department of Oral and Maxillofacial Surgery, Samsun, Turkey

³Ordu University, Department of Oral and Maxillofacial Radiology, Ordu, Turkey

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Abstract

Sialolithiasis is the most common disease of salivary glands. Sialolithiasis accounts for 30 % of salivary diseases and it most commonly involves the submandibular gland. Sialolithiasis that exceed 15 mm in any one dimension or 1 g in weight have been categorized as giant sialoliths. It's a relatively uncommon condition, which may present as a painful, recurrent swelling of the affected salivary gland or duct. Complications of salivary stones include infection, strictures and, less commonly, development of an intraoral fistula. Patients with salivary calculi are treated by removal of the calculus or, if necessary, the affected gland. This study presents case of an infection caused by the submandibular calculus and its surgical management.

Key Words: Salivary gland, submandibular, sialolithiasis

Özet

Sialolitiazis (tükürük bezi taşı) en sık rastlanan tükürük bezi hastalığıdır. Tükürük bezi hastalıklarının % 30 unu tükürük bezi taşları oluşturur ve en yaygın olarak submandibular bezde görülürler. Herhangi bir boyutta 15 mm'yi geçen ya da ağırlığı 1 gr'dan fazla olan tükürük bezi taşları dev tükürük bezi taşları olarak sınıflandırılırlar. Sialolitiazis, etkilenen tükürük bezinin ya da kanalının ağrı veya tekrarlayan şişliği ile kendini gösteren, nadir rastlanan bir durumdur. Enfeksiyon, daralma ve nadir olarak fistül oluşumu tükürük bezi taşlarının komplikasyonlarından bazılarıdır. Tükürük bezi taşlarının tedavisi taşın ya da gerekli olduğu durumlarda etkilenen bezin çıkarılmasıdır. Bu çalışmada submandibular bezdeki tükürük bezi taşının neden olduğu enfeksiyon ve bu enfeksiyonun cerrahi tedavisi sunulmaktadır.

Anhtar Kelimeler: Tükürük bezi, submandibular, sialolitiazis

Introduction

Sialolithiasis is the most common disease of salivary glands (1-3). Salivary gland stones or sialoliths are calcifications that accumulate within the salivary gland parenchyma and associated ductal systems (4). More than 80 % of sialoliths occur in the submandibular gland or its duct, 6 % in the parotid gland and 2 % in the sublingual gland or minor salivary glands (2). The high incidence of submandibular sialolithiasis may be explained by the pH, mucin content and the high calcium concentration in this gland. The length and route around the mylohyoid muscle and secretion against gravity may also contribute to this predilection (5).

Sialoliths are typically more common in middle-age, and as only 3 % of all sialolithiasis cases occur in the pediatric population (6). Submandibular calculi are usually asymptomatic. However, depending on the gland duct narrowing, painful or painless swelling or only pain may occur (1,4,7). On the other hand, complete obstruction presents as an emergency situation with severe symptoms including a tense swollen gland with marked sensitivity, ductal swelling and on occasion suppuration which may collect as a discrete abscess or drain from the duct (4). The size of the salivary calculi may vary from less than 1 mm to a few cm in largest diameter (8). Salivary calculi larger than 1 cm are rare (4).

Different treatment options may be selected according to the size and location of the sialolith. Small stones often may be "milked out" through the ductal orifice using bimanual palpation. If the stone is too large or located in the proximal duct, piezoelectric extracorporeal shock wave lithotripsy or surgical removal of the stone or gland may be required (1,2).

Case Report

A 31 year old man presented to Ordu University, Faculty of Dentistry, Department of Oral and Maxillofacial Surgery for painful purulent discharge from unilateral submandibular ducts despite appropriate medical therapy. The medical history of patient was uneventful. Clinically, there was a tense and sensitive submandibular salivary gland and visible swelling in the anterior part of the right side of the mouth floor. Panoramic and occlusal radiographs were obtained for radiographical examination. The panoramic radiograph showed an elongated radiopaque structure superimposed on the right premolar area (Fig 1). An occlusal radiograph showed a radiopaque, cylindrical, and elongated radiopaque sialolith inside right Wharton's duct (Fig 2).

After informing the patient of all possible complications that can occur during and after the surgery, a signed consent form was obtained from the patient. The patient was administered local anesthesia (Ultra Cain D-S

Forte, Aventis, Turkey). The calculus was surgically exposed with carefully dissected, and removed (Fig 3-4). Following removal of stone, the duct was cannulated with catheter for purulent discharge (Fig 5). A therapy with antibiotic (amoxicillin + clavulanate, 2000 mg/day), and an analgesic (naproxen sodium, 1100 mg/day) were prescribed. 1 day after surgery cannula was removed. The patient was reassessed 7 days after surgery for the evaluation. At that time, the right submandibular gland was found to be normal and a clear salivary flow could be observed (Fig 6).

Discussion

Sialolithiasis is the most common disease of the salivary glands. Its estimated frequency is 1.2 % in the adult population (9). Salivary gland calculi or sialoliths are calcifications that accumulate within the salivary gland parenchyma and associated ductal systems (4). Submandibular salivary glands are affected the most with sialolithiasis, followed by parotid, sublingual, and minor glands respectively (2,4,5). The high incidence of submandibular calculi may be related to the pH, mucin content and the high calcium concentration in this gland. Also, diameter and length of the submandibular excretory duct and secretion against gravity are involved (3, 5). As in our case, sialoliths are typically more common in middle-aged males (2-4,6) but some studies indicate a male to female ratio of 1:1 and with ages ranging from 12 to 93 years (10). However, sialoliths in patients as young as 16 months have been noted (11). Salivary stones are usually small and measure from 1 mm to less than 1 cm (1,3). Salivary calculi larger than 1 cm are rare (4). The average stone size is 3.2 mm for the parotid gland and 4.9 mm for the submandibular gland (12). A review of literature by Lustmann et al.(10) found that of 302 sialoliths studied, 79.8 percent were 1 cm or less and only 7.6 per cent greater than 1.5 cm. On the other hand, Ledesma-montez et al. (3) reported that found 16 cases measuring 3.5 cm or more in literature. In this case report, submandibular salivary calculus measured as 13 mm diameter.

Submandibular calculi are usually asymptomatic. However, their presence can cause salivary gland dysfunction and obstruction of salivary flow resulting in chronic or acute bacterial infections (4). The most common symptoms of sialoliths are recurrent pain and swelling of the associated gland during meals, because the stone usually does not block the flow of saliva completely (1,7). Its reported that pain and swelling of the concerned gland at mealtimes and in response to other salivary stimuli are especially important (1,2). Thus, careful history and examination are consequential in the diagnosis of sialoliths. Bimanual palpation of the floor of the mouth, in a posterior to anterior direction, reveals a palpable stone in a large number of cases of

submandibular calculi formation. Bimanual palpation of the gland itself can be useful, as a uniformly firm and hard gland suggests a hypo functional or non-functional gland (1,2). In our case, purulent discharge from submandibular duct and pain due to infection was exist. At the same time, calculus could be palpable with bimanual palpation of the floor of the mouth.

Treatment of submandibular calculi, when the stone is small, conservative management such as moist heat, increased intake of fluids, and gentle massage of the gland towards the gland duct opening may be all that is needed to allow spontaneous release of the stone (1,2,4). As in our case, if this is not successful or a large stone is present, surgical removal is essential. Sialoliths in the gland duct can often be removed without damage to the gland but intraglandular sialoliths generally require removal of the gland (1,2,4,13,14).

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Figure 1. Panoramic view of the sialolithiasis



Figure 2. Occlusal view of the sialolithiasis



Figure 3. Exposing of the sialolithiasis surgically



Figure 4. Appearance of the sialolithiasis after removal

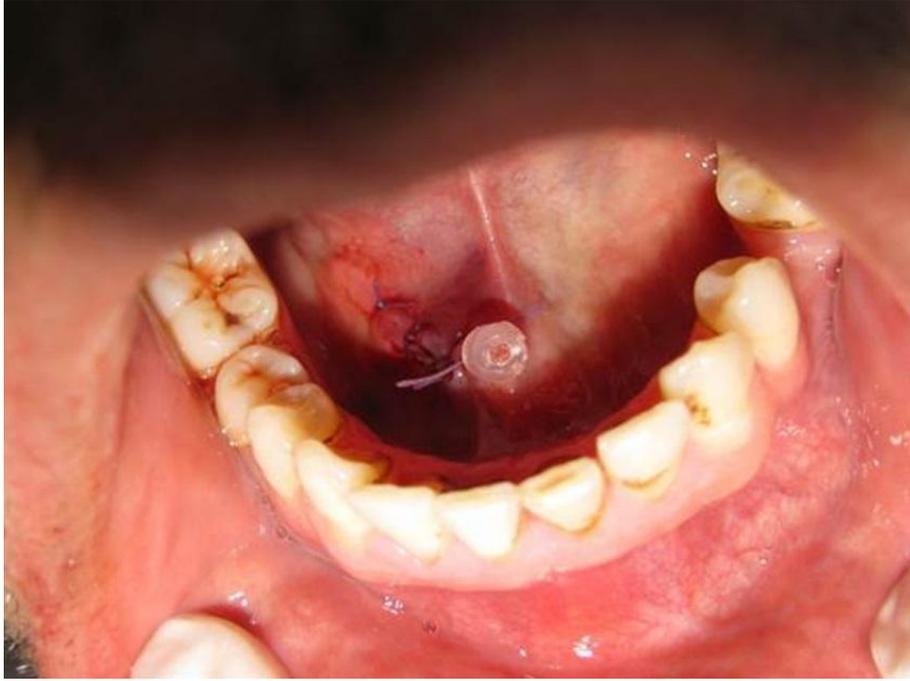


Figure 5. Cannulation of the duct with catheter for purulent discharge



Figure 6. Healing, 7 days after surgery