Case Report

International Journal of Dental and Health Sciences
Volume 02, Issue 05

SUBMANDIBULAR BACTERIAL SIALADENITIS: A CASE REPORT

R. Pradeepalakshmi Ganesh[1], Ramasamy[2], Ravi David Austin[3]

1. Post Graduate student, Department of Oral Medicine and Radiology, Rajah Muthiah Dental College and Hospital, Annamalai University
2. Professor, Department of Oral Medicine and Radiology, Rajah Muthiah Dental college and Hospital, Annamalai University.
3. Professor & Head, Department of Oral Medicine and Radiology, Rajah Muthiah Dental college and Hospital, Annamalai University.

ABSTRACT:

Acute bacterial Sialadenitis, a painful and inflammatory infection preferentially affects parotid and submandibular gland. Though commonly caused by bacteria, the etiology ranges from simple infection to autoimmune disorders. Though it affects both parotid and submandibular gland, submandibular sialadenitis is an uncommon condition with an infrequent discussion in literature, unlike sialadenitis of the parotid gland. The management belies mainly on early administration of antimicrobial therapy and surgical drainage if deemed necessary. This case report describes a case of acute suppurative submandibular sialadenitis without a common predisposing factor, and its management.

Key words: Submandibular gland, Bacterial sialadenitis, Suppurative sialadenitis, infection.

INTRODUCTION:

A variety of factors affect the susceptibility of the salivary glands to bacterial infection, among them salivary flow rate, composition of saliva and varying damage to their ductal systems are the most common predisposing factors [1]. Deterioration of host defence inevitably renders the salivary glands susceptible to haematogenous infections. The common factors are older age, debilitation and dehydration. The site and size of parotid and submandibular glands renders them prone to infection. The suggested proportion of submandibular sialadenitis incidence is about 10% of all cases of sialadenitis [2]. The common features are swelling of the gland, pain and tenderness, occasionally difficulty in opening the mouth and pus exudation through duct orifice in suppurative conditions.

CASE DETAIL:

A 35 year old female patient reported to the Department of Oral Medicine and Radiology, Rajah Muthiah Dental College, Annamalai University, Chidambaram, Tamil Nadu with a complaint of painful swelling in the left side of neck region, since 10 days. The swelling was gradual in onset, initially smaller and progressed slowly to attain the present status. She had a similar swelling before one month in the same site, with concurring pain irt 38, which was treated with antibiotics and 38 was extracted. Then the swelling subsided and she remained normal for two weeks.

*Corresponding Author Address: Dr R.Pradeepalakshmi Ganesh.Email: Pradeeparaja88@gmail.com

Thereafter, the present swelling started before 10 days. A moderate and intermittent pain was present that aggravates on eating. She reported a yellowish discharge from the floor of the mouth on pressing the swelling. No history of fluctuations in size was revealed. There was concurrent fever with swelling, but the fever had subsided before one week by the medications prescribed by her dentist. However, the swelling remained unresponsive to the medications.

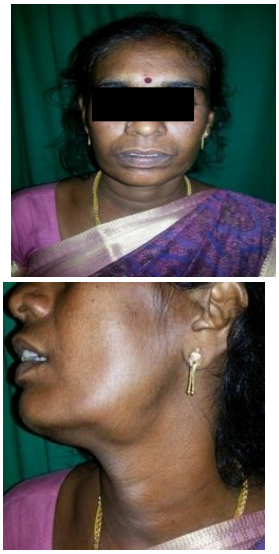

Figure 1: Image of left submandibular swelling.

On clinical examination, a single well defined swelling was present in the left submandibular gland region, below the lower border of body of the mandible, elliptical in shape, with a diameter of 2×3cm in size approximately. It extends anteroposteriorly from 1cm behind the parasymphysis to 1cm beyond the angle of mandible and superioinferiorly, below the inferior border of mandible to the level of second thyroid cartilage. Skin over the swelling was normal. On palpation, it was firm in consistency and tender, and temperature was not raised.

Intraorally, diffuse swelling was seen in the left floor of the mouth, with a size of approximately 2.5cm diameter. Anteroposterior extension was from lingual frenum to lingual vestibule of 36 region, from vestibule to midline medio-laterally. The mucosa over the swelling appeared erythematous. Wharton's duct orifice was inflamed.

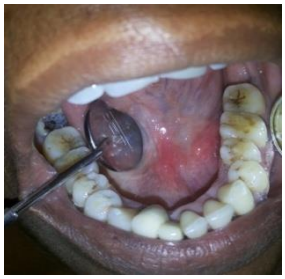

Figure 2: Erythematous, inflamed Wharton's duct

With all those clinical findings, following entities were considered in our differential diagnosis—acute or chronic sialadenitis, sialolith, space infections, benign lymphoepithelial lesion, lymphadenitis, and benign salivary gland neoplasms.

Routine hematological investigations were within normal limit. The occlusal view of left side of mandible revealed normal morphological structure of alveolus. No soft tissue calcifications seen in the submandibular region. No aspirate was obtained with wide bore needle.

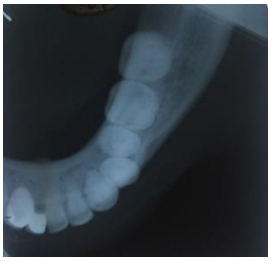

Figure 3: Occlusal view of left side of mandible.

Ultrasonography of left and right submandibular gland revealed normal right submandibular gland, of size of about 28×14mm approximately, with no evidence of nodes. Left submandibular gland revealed mixed echogenecity with increased vascularity and the gland is enlarged in size of about 35×20mm approximately. No calcifications seen. Ultrasonography was suggestive of enlarged left submandibular gland with infection.

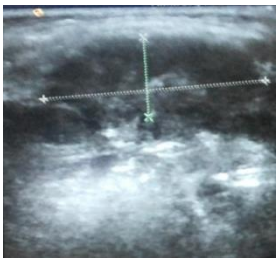

Figure 4: USG scan showing enlarged left submandibular gland.

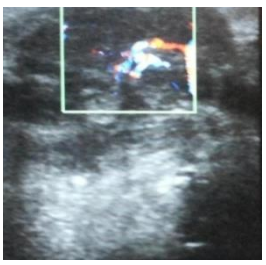

Figure 5: Color doppler showing increased vascularity.

Based on the history, clinical examination and investigations the case was diagnosed as acute bacterial sialadenitis. Broad spectrum antibiotics (amoxicillin and clavulanic acid) and anti-inflammatory were prescribed and reviewed after 5 days. The swelling reduced in size and there was no pus discharge and pain.

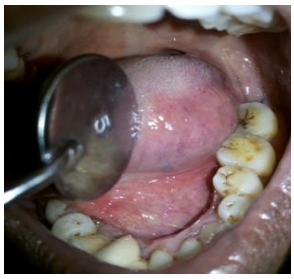

Figure 6: Mid-Treatment review`

Medications were continued till the total disappearance of the swelling. Post treatment ultrasonography revealed essentially normal study of both the glands in size, shape, echotexture and vascularity. Thus, a final diagnosis of acute submandibular sialadenitis was confirmed.

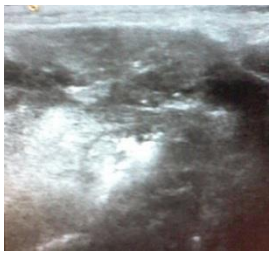

Figure 7: Post –treatment USG showing normal study of the gland

DISCUSSION:

Sialadenitis is characterized by an inflammatory enlargement of one or more salivary glands, caused by virus or bacteria. It exits in both acute and chronic forms. Though it preferentially affects parotid and submandibular glands, the submandibular sialadenitis is uncommon [2]. The common predisposing factors of submandibular sialadenitis are sialolithiasis and xerostomia [1]. Although sialoliths frequently occur in submandibular gland, bacterial sialadenitis occurs frequently in parotid gland because the submandibular gland is protected putatively by high level of mucin (antimicrobial) in saliva and protective role of tongue by cleaning the floor of the mouth. The causative organisms include Staphylococcus aureus, streptococci, pseudomonous aeruginosa, Escherichia coli. Amongst them staphylococcus aureus is the frequently isolated strain [3].

The clinical signs and symptoms of sialadenitis include fever, chills, localized painful firm swelling of the affected gland area, with redness of the overlying skin. Other constitutional features include a foul taste in the mouth, dry mouth, decreased mobility of the jaw, and a general ill feeling. Pus drainage through the gland duct may also present. Debilitating condition, dehydration, malnourishment, autoimmune diseases, and recovery after surgery, certain medications increase the risk considerably. The salivary duct stone and poor oral hygiene potently increases the vulnerability of the gland to infection.

Most often the diagnosis of submandibular sialadenitis is made by the history and clinical features of the lesion. Further investigations like radiograph and ultrasound helps to rule out sialolithiasis, wharton's duct abnormalities and glandular neoplasm.

The microscopic features in the earliest stages of sialadenitis are vasodilatation, with increased neutrophils in the vessels, emigrating into the parenchyma and ducts. Colonies of bacteria is seen particularly in the ducts. In the advanced stages of infection, the ducts become dilated with neutrophils. The destruction of duct epithelium and acini occurs, leading to formation of microabscesses. With impairement of host immune responses, parenchymal destruction progresses and fusion of microabscesses leads to gross abscess formation and destruction of gland. Often healing occurs by fibrosis of the gland [3].

Ultrasonogram helped us to rule out the anatomical abnormalities of Wharton's duct, mechanical obstruction of salivary duct secondary to a sialolith and confirmed as submandibular gland swelling discerned from lymph node pathology. The increased size and vascularity of the gland gave us a suspicion of adenoma. The good prognosis to antibiotic treatment and the normal study of gland in post-operative ultrasonogram confirmed our diagnosis of bacterial sialadenitis.

More interestingly, in our case there is no any predisposing factor but there was an antecedent alveolar abscess, the relationship between them has to be ascertained.

The treatment for sialadenitis is the administration of antibiotics specifically active against S. aureus. Hydration, warm compresses, gland massage, triggering saliva flow (by lemon juice or hard candy) composes an essential adjunctive treatment to be followed [4]. Usually resolution of acute symptoms occurs within a week, but the edematous condition may last for few weeks [5]. Sometimes abscess formation may require surgical drainage [6]. The long-term outlook (prognosis) for sialadenitis is quite good with the prompt diagnosis and an appropriate treatment.

CONCLUSION:

Submandibular sialadenitis is a rare condition, usually preceded by a predisposing factor. In our case, there is no evident predisposing factor, but the antecedent dentoalveolar abscess is exponential.

REFERENCES:

1. I.I Raad, M. F. Sabbagh, and G.J.Caranasos, “Acute bacterial sialadenitis : a study of 29 cases and review,” Reviews of infectious diseases,Vol.12, no.4, pp 591-601,1990.
2. G. isacsson, A Isberg, M. Haverling, and P.G.Lundquist, “salivary calculi and chronic sialoadenitis of the submandibular gland: a radiographic and histologic study”,Oral Surgery Oral Medicine and Oral Pathology, vol 58, n0.5, pp 622-627, 1984
3. R.A. Cawson, M.J. Gleeson, and J.W. Eveson, “Sialadenitis,” in The Pathology and Surgery of the salivary glands, Chapter 4, pp.1-34, Ist edition, 1997.
4. P.J.Bradley, “Pathology and Treatment of salivary gland conditions”, Surgery, Vol.24, no.9, pp304-311,2006.
5. M.C. Loury, “Salivary gland Disorder”, Advanced Otolaryngology, 2006.
6. A.Tapisiz, N.Belet, E.Ciftci, S.Fitoz, E.Ince, and U. Dogru, “Neonatal suppurative sialadenitis”, Turkish Journal of Pediatrics, vol.51,no.2,pp.180-182, 2009.