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Chronic Bacterial Sialadenitis-A Case Report

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Abstract Sialadenitis is an acute infection of the salivary glands. The parotid gland is most commonly affected by inflammation. Staphylococcus aureus is the most common pathogen associated with acute parotitis. Inflammatory changes in the ducts are known as sialodochitis. Inflammatory diseases of the salivary glands (Sialadenitis). Here we report a case of recurrent bacterial sialadenitis in a 45- year-old female patient on the left lower third of her face.

Keywords: *parotid gland swelling, bacterial sialadenitis, infection*

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1. Introduction

Sialadenitis, an acute infection, commonly affects the parotid gland. The microbiology of infection of the submandibular and sublingual glands has rarely been reported [1]. The chief agent is Staphylococcus aureus. However, streptococci (including Streptococcus pneumoniae and Str. pyogenes) and gram-negative aerobic bacilli (including Escherichia coli) have also been reported [1]. Gram negative organisms are often isolated from hospitalised patients. Organisms less frequently found are Haemophilus influenzae, Treponema pallidum, cat-scratch bacillus and Eikenella corrodens [2]. Mycobacterium tuberculosis and atypical mycobacteria are rare causes of parotitis.

Treatment is rehydration of the patient, encouraging salivary flow (lemon drops), gland massage, and antibiotics. If an abscess occurs, it will need surgical draining.

In this paper, we present a case report of a 45-year-old female patient who reported with swelling on left side of her face.

2. Case Report

A 45-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 on left side of her face since four days. History of pain was sudden in onset, continuous nature, moderate in intensity, radiating to left ear and aggravated on mastication. History of swelling which was initially small in size and gradually progressed to attain present size. Patient also gave a history of associated fever before 3 days. Patient also gave a history of similar recurrent swelling associated with pain on left side of the face since 5 years. History of tuberculosis twice, with first episode 20 years ago and then 2 years later and underwent treatment for the same. Dental and family history was non-contributory. Her vital signs were within normal limits.

A single submandibular lymph node palpable on the left side which was approximately 0.5X1 cm in size, roughly oval in shape, firm, tender and mobile.

Figure 1. Facial asymmetry on left side of the face

Figure 2. Inflamed parotid duct orifice

On extra oral examination, inspection revealed facial asymmetry due to a single diffuse swelling on left middle and lower third of the face. The swelling extends 3 cm away from commissure of lips anteriorly to left ear lobe

posteriorly, 1 cm above left tragus superiorly to inferior border of mandible inferiorly. It measures approximately 5X4 cm in size and roughly oval in shape. Skin over the swelling appears stretched. No other abnormality detected. On palpation, the swelling is firm to hard in consistency, tender and warm on palpation.

On intraoral examination, inspection revealed inflamed parotid duct orifice on left side [Figure 2]. On palpation, pus discharge evident on milking of left parotid duct orifice and is tender.

Ultrasonogram (USG) of left parotid gland reveals hetrogeneous echogenicity with multiple small cystic areas [Figure 3] with increase in vascularity in left parotid. Parotid gland was enlarged on left side [Figure 4] with measures of 40X17 mm as comparing to right side parotid gland with dimensions of 29X11 mm.

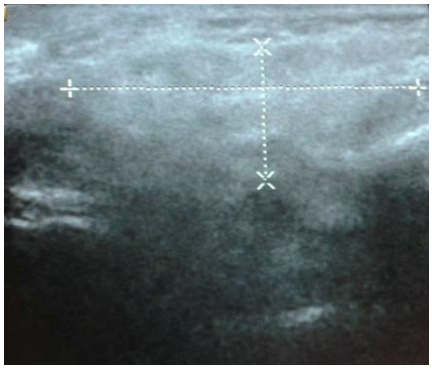

Figure 3. USG scan reveals multiple small cystic areas

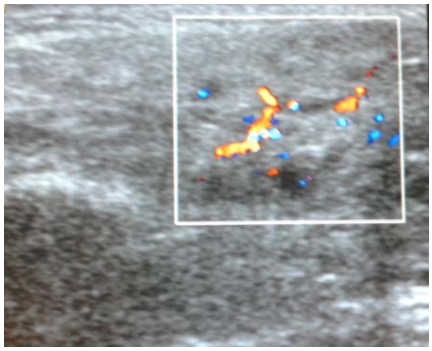

Figure 4. Colour Doppler ultrasound reveals increased vascularity

On sialogram examination, contrast showed the parotid gland and the branches of main duct. Dilated Stensons duct visualized with air trapping seen [Figure 5]. Pooling of contrast is seen at the ends of terminal tubules. It can be seen narrowing of tubules too. Thus findings were suggestive of chronic inflammatory pathology of left side parotid gland.

Figure 5. Sialogram reveals Dialated stensons duct with air trapping and pooling of contrast agent at the end of terminal tubules

Aspiration was done and given for culture and sensitivity. S.milleri group grown on culture. It was sensitive to ciprofloxacin, erythromycin, clindamycin, ofloxacin.

Based on the history, clinical examination and investigations the case was diagnosed as chronic bacterial sialadenitis. The differential diagnosis considered was viral sialadenitis, buccal node lypmadenopathy, tuberculous lymphadenitis, pleomorphic adenoma, and myositis ossificans.

Figure 6. Post OP picture after 1 month

Antibiotics was prescribed according to culture and sensitivity report along with analgesics. Patient is under regular follow up [Figure 6]. Patient reported with recurrence on right side after 6 months and antibiotics were prescribed similarly following which her symptoms was relieved.

3. Discussion

Chronic non-specific sialadenitis of the parotid gland is an insidious inflammatory disorder which is characterized by intermittent, often painful, swelling of the gland which may or may not be associated with food intake.

The disease tends to progress and if you left it untreated may lead to the formation of a fibrous mass in the gland. Chronic parotid sialadenitis is most commonly seen in middle age. Children are also sometimes affected but the disease tends to be less severe and may even disappear at puberty.

Major predisposing factors are dehydration and poor oral hygiene. It was more prevalent in the past, in old, debilitated, and dehydrated, hospitalized patients.

The pathogenesis of the disease is not fully understood but is likely to involve the interplay of several etiological factors of which reduced salivary flow is the most significant. Normal flow of saliva prevents inspissations of secretions and helps to remove organisms from the duct system. Once reduced, either by decrease in the acinar tissue or duct obstruction, ascending infection occurs more.

There are two theories which have been put forward regarding the initiation of chronic sialadenitis. One postulates that retrograde infection by low grade opportunistic oral flora can result directly in chronic recurrent sialadenitis. The other proposes that repeated episodes of acute infection may lead to mucous metaplasia of ductal epithelium resulting in increased mucous content of secretions, stasis and further episodes of inflammation. Secretory disorders of the parotid gland may also play an important role in the pathogenesis of chronic parotitis.

Aggregated crystalloid, derived from these secretions, has been implicated in calculus formation in the gland.

In the genesis of chronic non-specific parotid sialadenitis, the primary pathogenic event is believed to be a decrease in the secretion rate with ductal stasis and ascending infection. Usually there is ductal obstruction, associated with stones and structure of the main duct system. The other causes include mucous plugs, injury to the duct and papilla, and ductal compression by a tumor. Sometimes the cause may remain uncertain [3]. Non-obstructive factors causing a decrease in the flow of secretions such as radiation injury to the gland or immune-mediated disease are less common. The effect of radiation is dose related and varies from a transient reduction of salivary flow to irreversible damage with acinar atrophy and fibrosis.

This results in a permanently reduced salivary flow thus predisposing the gland to an ascending infection [4].

Sometimes it is impossible to identify a cause although a reduction in immunological and local defence mechanisms may explain the frequency of inflammation in some debilitated and dehydrated patients.

The symptoms of chronic sialadenitis include intermittent, often painful, unilateral parotid swelling, that may or may not be associated with eating [5]. Intra-oral examination may show pus emanating from the Stenson's duct orifice by gently massaging the gland.

Histologically the main features are varying degrees of loss of acini, duct dilatation and a scattered chronic inflammatory cellular infiltrate, usually predominantly lymphocytic. Extensive interstitial fibrosis develops and there may be squamous metaplasia of the duct epithelium. Calculus formation may be seen in the dilated ducts [6].

Preliminary plain radiographs and sialography remain the most important radiological investigations. Antero-posterior and intraoral views may show a stone in the Stenson's duct on plain radiographs, although some are small and radiolucent [7]. Ultrasound, CT and MRI scans have been used mainly to rule out the possibility of neoplastic the parotid gland disease.

Conservative treatment includes sialogogues, frequent gland massages and antibiotics for acute exacerbations. If the inflammation recurs frequently, total parotidectomy may be required. The administration of antimicrobial therapy is an essential part of the management of patients with suppurative sialadenitis [8]. Most cases respond to antimicrobial therapy; however, sometimes an inflamed gland may reach a stage of abscess formation that requires surgical drainage. Broad spectrum antimicrobial therapy is indicated for the treatment of all possible aerobic and anaerobic pathogens. A penicillinase-resistant penicillin or a first-generation cephalosporin is generally adequate coverage for Staphylococcus aureus infection. However, infection with methicillinresistant S. aureus (MRSA) may require the use of vancomycin, teicoplanin or linezolid. Clindamycin, cefoxitin, imipenem, the combination of metronidazole and a macrolide or a penicillin (eamoxicillin) plus a -lactamase inhibitor (clavulanate), should provide adequate coverage for anaerobic as well as aerobic bacteria [8].

In conclusion, chronic non-specific sialadenitis of the parotid gland is uncommon and, if untreated, can cause considerable morbidity to the patient and may result in a fibro-inflammatory mass in the parotid region. Superficial parotidectomy has a very high success rate, with minimal long-term complications, and should be offered early in established cases, to reduce unnecessary morbidity.

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