

Contralateral recurrence of Parotid abscess at 6 months interval- A case report

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Abstract

Parotid abscess is a rare pathology around the world. It is reported mostly as complications of long-term debility and oral sepsis. The management of parotid abscess is same as any other abscess in the body i.e. surgical drainage of pus followed by antibiotic therapy however the presence of facial nerve in close proximity to parotid makes it crucial. If left untreated, it is a potentially life threatening infection as it can result in septicaemia and deep neck space infections.

Keywords- Parotid abscess, parotitis, suppurative salivary gland disease.

Introduction

Acute bacterial parotitis is an infection/inflammation of the parotid gland parenchyma along with intraparotid & periparotid lymph nodes usually results following an ascending infection via the Stensen's duct [1] or bacteremia. This acute parotitis has high chances to show suppurative changes which can result in abscess formation. When the intracapsular pressure increases, pus extends beyond the capsular limits and invade the surrounding tissue and fascial spaces.

Multiple factors are responsible for acute bacterial parotitis. The main contributing factor is poor oral hygiene. Other predisposing factors include infection and trauma of the oral cavity, dental diseases, caries tooth, dryness of oral cavity, dehydration, salivary stones causing obstruction of the PG duct, drugs causing xerostomia (anticholinergic drugs and antihistamine drugs), Sjogren's syndrome, diabetes mellitus, pre-existing parotid tumor and in individuals with immunosuppression [2]. As the chances of occurrence of these etiological factors increase with age, parotid gland abscess are infrequently encountered among children [3].

Various pathogens like streptococcus, Haemophilus, Pseudomonas, Mycobacterium tuberculosis, and anaerobic bacteria are involved in its pathogenesis however Staphylococcus aureus is most commonly associated with parotid abscess both in adults and children [4].

Clinically, parotid abscess presents as a sudden onset of erythematous painful swelling in the parotid region, fever, dysphagia, elevation of lobule of ear, facial nerve paralysis, discharge of pus intraorally through the duct &/or extraorally through the rupture of tensed skin. If it spreads to the surrounding planes, it may be life threatening.

The management with intravenous broad spectrum antibiotics and surgical drainage of the parotid abscess is the main stay of treatment.

Case report

A 16 year old female child visited to the Department of Oral & Maxillofacial Surgery with a diffuse swelling over right preauricular region extending downwards upto the lower border of mandible (Fig 1a & 1b), gradually increasing in size with associated low grade fever of five days duration. Swelling was firm and tender. There was no fluctuation and any associated facial nerve palsy present. There was difficulty in chewing and deglutition. Submandibular lymph nodes could not be palpated because of the diffuse swelling, however the region was tender. Oral cavity examination & orthopantomogram showed multiple caries tooth and oral hygiene was extremely compromised (Fig 2 & 3).

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Fig 1a&1b- Preoperative swelling over right parotid region



Fig 2-Multiple carious teeth right side



Fig 3-Preoperative x-ray

There was a past history of similar illness however on the left side of parotid region 6 months back which was treated by incision & drainage elsewhere (Fig 4).



Fig 4-Healed scar on left side of face

An initial diagnosis of a parotitis was considered along with lymphadenitis. An ultrasonogram of the right side of the face and neck was done and revealed a heterogeneous lesion with solid & cystic areas measuring 2.0x1.5 cm noted within the lower part of right parotid gland suggestive of parotid abscess and submandibular lymphadenitis.

After the informed written consent was obtained, drainage of the pus was performed under general anaesthesia with oral intubation. Small incisions (1-2cm in length) were made over the most dependent area i.e. over the angle region of mandible (Fig 5a). Parotid gland region was gently explored using a blunt instrument to break down loculi of pus and improve drainage (Fig 5b). Approximately 10cc of thick frank pus was drained and was sent for routine antibiotic sensitivity culture. The cavity was flushed with betadine solution followed by normal saline. To keep the surgical site patent, a corrugated rubber drain was inserted and secured with 3-0 black silk (Fig 6). Simultaneously, extraction of multiple carious teeth on the right side was carried out.



Fig 5a-Incision marked



Fig 5b-Drainage of pus



Fig 6-Rubber drain secured

Regular exploration & betadine irrigation was performed and drain was removed on 5th postoperative day. Intravenous antibiotics (Augmentin 1g twice daily + Metronidazole 400mg thrice daily) for 5 days and subsequent oral antibiotics for 5 days along with Tab Piroxicam 20mg twice daily for 7 days were prescribed. Patient was asked to do chlorhexidine mouth rinses thrice daily for 10 days and was encouraged to maintain oral hygiene. The parotid swelling settled within one week of surgical drainage (Fig 7).



Fig 7-Postoperative after 1 week

Discussion

The parotid salivary gland is the gland most frequently affected by inflammatory or infectious processes[5]. The predilection of the parotid gland for parotitis and parotid abscess have been postulated due to firstly- its slower flow rate in comparison to other major salivary glands, secondly- length of Stensen's duct increases the risk for stasis and ascending infections via the duct, thirdly- composition of parotid saliva (pure serous in nature) which lacks in bacteriostatic properties found in the mucus-containing secretions of the submandibular and sublingual glands, fourthly- more accumulation of food debris followed by microbial colonies in the upper buccal vestibules as compared to floor of the mouth because of the continued movement of tongue which helps in clearing away.

There are many predisposing factors for the development of a parotid abscess[6]. Our patient had multiple caries teeth and poor oral hygiene. The recurrence of parotid abscess on the contralateral site can be co-related with the previous history of extraction following parotid abscess on left site, which would have compelled the subject for the usage of right site of dentition for mastication, thus the food accumulation on the upper buccal vestibule can be the source for infection. Other than this, another reason which could be thought of recurrence of abscess on the contralateral site is, pus

follows the path of least resistance and the fibrosis after exploration of left parotid abscess 6 months back could have limited its spread.

This is the best possible explanation from our side as we have not found any such case reported in literature

The differential diagnosis to be considered in patients with parotitis abscess includes primary developmental malformations, acute viral parotitis (mumps), sialadenitis, sialolithiasis, autoimmune and systemic diseases, tumors of salivary glands and drug-induced disorders. Infected cysts or fistulas of the first branchial arch should be considered in the differential diagnosis of a PA in children^{7,8,9}.

Patient had undergone an orthopantomogram imaging besides the clinical palpation, in which there was no evidence of parotid stone was found. Patient was poor so he couldn't afford for CT scan. Apart from the clinical findings suggesting the diagnosis, the investigation of choice in our case was ultrasound scan which is non-invasive and does not expose the patient to X-rays. Out of the various imaging techniques, sonography is considered to be a good diagnostic tool to detect abscess cavities before the development of fine fluctuations[10]. Ultrasonography is a non-invasive, rapid, not requiring much co-operation from patient was the diagnostic investigation choice in our case. Further possibilities of diagnosing salivary gland diseases includes sialography, magnetic resonance imaging (MRI)[11], MR sialography[12], or computed Tomography & Sialendoscopy.

Different methods have been advocated in literature to drain a parotid abscess. A preauricular incision has been reported, which can be considered good on cosmetic backgrounds as small vertical incision is placed over the preauricular line however, this method would not provide a dependent drainage of purulent material. Other method includes raising of a full posterior-based flap (Modified Blair's method) as for parotidectomy and multiple drainage incisions into the parotid substance in lines parallel to the branches of the facial nerve. This procedure is advantageous as it exposes the surface of gland and reduces the risk of iatrogenic nerve damage[13,14] but it would be too radical approach for drainage of pus.

As the main principle behind incision and drainage is decompression and preventing the suppuration to spread into surrounding tissues, the incision should always be made on the most dependent area of swelling. As in our

case, the swelling was extending upto the lower border of mandible, we choose to drain from the lower border of mandible. The facial nerve, the external carotid artery and its branches, and the retromandibular vein with its tributaries are major structures that pass through or deep to the parotid gland. The disadvantage of this method is here is no direct exposure of the gland and branches of facial nerve. Thus, irrespective of which method we choose for pus drainage, it should be done cautiously. In our case, we did not encounter any such complications.

Conclusion

Although it is a rare entity, surgical intervention is required once

abscess is confirmed & it should be drained through small cosmetic incisions taking care not to injure facial nerve.

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