

Short Communication

Etiology and Management of Oro-Antral Fistula

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Abstract

Oro-Antral Fistula is a communication between Maxillary Sinus and Oral Cavity, Dental diseases has been reported recently in 30% of maxillary sinusitis cases, The Pathophysiology of Odontogenic Maxillary Sinusitis is different than inflammatory maxillary sinusitis. The aim of this article is to highlight the etiology, symptoms and management of Odontogenic sinusitis in addition management of Oro-Antral fistula.

INTRODUCTION

Intimate anatomical relation of upper teeth to maxillary sinus promotes the development of periapical or periodontal odontogenic infections into maxillary sinus. The Bony wall between maxillary sinus and teeth roots can vary in thickness from complete absence hence making the mucus membrane as a sole intervening barrier to a bony wall barrier with thickness up to 12 mm [1,2]. Maxillary sinusitis can occur after tooth extraction and hence communication with the oral cavity also it can occur following dental root canal treatment with mechanical injury of the maxillary sinus mucosa [3]. A meta-analysis made by Arias-Irimia [4] revealed that the most common causes of Odontogenic maxillary sinusitis were iatrogenic (55.97%), periodontitis (40.38%), and odontogenic cysts (6.66%). Oroantral Fistulas accounts for 47.5% of cases within the iatrogenic group. The Molar region accounts for 47.68% of patients with maxillary sinusitis, the first molar tooth was the most frequently affected with incidence of 22.51%, followed by the third molar tooth 17.21%, and the second molar tooth 3.97%. The second premolar tooth was affected in 5.96% of the cases. While the canine only participated in 0.66% of cases with maxillary sinusitis [5]. Recently Taschieri et al suggested that Bacterial Biofilm of odontogenic origin might be involved in the etiopathogenesis of maxillary sinusitis and the choice of therapy depends on the characteristics of the bio film for successful treatment [6].

Clinical Picture

Unilateral Nasal obstruction, Rhinorrhea, and/or foul odour and taste are the most frequent symptoms of Odontogenic maxillary sinusitis [6]. Longhini and Ferguson reported that dental pains were only present in 29% of patients with odontogenic maxillary sinusitis. There is no single symptom that can differentiate between dental from inflammatory chronic maxillary sinusitis.

Diagnosis

It is important to accurately diagnosis odontogenic maxillary

sinusitis to avoid failure of the usual medical, surgical treatment of sinusitis. The Dental Panoramic radiographic has been shown to have a high false rate with a sensitivity of 60% for dental caries and 85% for periodontal disease [7].

CT scan is the gold standard modality of radiological assessment Cone Beam CT is a new tool which utilizes 10% of the radiation dose of conventional CT scan highlighting bony details with high Resolution but less detail of soft tissues [8].

Microbiology of Odontogenic Maxillary Sinusitis

Brook reported that in cases of acute and chronic Odontogenic Maxillary Sinusitis infection can be of mixed aerobic and anaerobic Bacteria, aerobic organisms includes; Alpha Hemolytic streptococci, Micro aerophilic streptococci, Streptococcus pyogenes, staphylococcus aureus while Anaerobic Flora includes Gram-negative Bacilli, Peptostreptococcus, Fusobacterium spp [9].

Management

Concomitant management of both dental disease and associated sinusitis will ensure complete resolution of infection and prevent recurrence and complications. Functional endoscopic sinus surgery (FESS) is the main surgical procedure to treat dental maxillary sinusitis with its advantages in preserving healthy sinus mucosa and function and avoiding disadvantages associated with the external approach procedures of the maxillary sinusitis namely Caldwell-Luc [10] Or antral communication is a relatively common complication following extraction of maxillary posterior tooth [11]. Or antral communication of 5 mm or less generally close spontaneously but with primary suturing and the use of a resorbable barrier such as absorbable gelatine sponge (Gel foam) helps to close the communication effectively [12]. While defects more than 5 mm primary closure using a buccal advancement flaps, or full/split thickness palatal pedicle flaps is an important way to seal this defect. Recent literature suggests successful closure of or antral fistula using Endoscopic surgery [13]. It is of paramount importance to perform surgical closure of the antral

fistula in a disease –free sinus environment. Recently a Cochrane Database study found no difference in successful closure of Oro-antral fistula of size 5mm by using the Pedicle Buccal fat pad flap and buccal flap. The study involved 20 patients and in both Groups of patients there was a complete closure of oro-antral fistula 1 month post surgery [14, 15].

CONCLUSION

Odontogenic Sinusitis is likely to be underreported in Literature. The most common causes are iatrogenic and apical periodontitis. The clinical picture of Odontogenic and no Odontogenic sinusitis are similar in addition dental radiographs frequently fail to diagnose dental disease associated with maxillary sinusitis. Therefore, evaluation of patients with persistent unilateral maxillary sinusitis should include CT sinuses or Cone Beam CT to identify tooth periapical abscess as the cause for sinusitis. Endoscopic Sinus Surgery is the main surgical approach to treat Odontogenic Maxillary Sinusitis however an external Approach-Caldwell Luc procedure- can still be performed in some situations.

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