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ABSCESS ON PERIODONTIUM – A REVIEW

Dental Science

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ABSTRACT

Periodontal symptom is that the third most frequent dental emergencies , representing 7-14% of all dental emergencies There square measure numerous aetiology tributary factors post medical aid symptom, impaction of foreign objects, the factor that altering tooth morphology etc .The diagnosis is done by analysis of signs and symptoms The Treatment of periodontal abscess has been a challenging for many years .The main aim of this article is to review and evaluate the articles of Periodontal abscess

KEYWORDS

Periodontal Abscess, Incision And Drainage And Antibiotics, Gingival Pain, Forigen Objects

INTRODUCTION

Abscess is localised collection of pus purulent material collected in cavity caused by destruction of tissues. There are three type of abscess
1 Gingival abscess
2 Periodontal abscess
3 Pericoronal abscess

Odontogenic abscess include a broad group of acute infection that originate from tooth or periodontium Abscess are associated an array of symptoms, including purulent inflammation, in periodontal tissues which causes pain and swelling. An acute, destructive process of periodontium resulting in localised collection of pus communicating with the oral cavity through the gingival sulcus or periodontal sites & not arising from tooth pulp.[1]

Gingival abscess

Acute inflammatory condition of the gingiva characterised by purulent exudates without attachment loss. Following traumatic insult: e.g., injury by a fish bone, tooth brush bristle, etc., implantation of virulent bacteria into the gingival connective tissue leads to excessive gingival inflammatory reaction.

A gingival abscess was also defined as a localized purulent infection that involves the marginal gingiva or interdental papilla[2].

Abscesses of the periodontium is defined as localized acute bacterial infections which are confined to the tissues of the periodontium. They are classified as abscess associated with periodontal tissues.

1) a gingival abscess is a localised purulent infection that involves marginal gingiva and interdental papilla
2) pericoronal abscesses surrounding the crown of a partially erupted tooth;
3) combined periodontal and endodontic abscess are the localized, circumscribed abscesses originating from either the dental pulp or the periodontal tissues surrounding the involved tooth root apex and/or the apical periodontium and
4) periodontal abscesses which are localized purulent infections within the tissue which involves periodontal tissues leads to destruction tissue and bone loss . These are known as lateral periodontal abscess or Parietal abscess . .

The, accurate diagnosis and the immediate treatment of the abscesses are the important steps in the management of patients presenting with such abscesses

CLASSIFICATION [3,4]

Periodontal relation abscess: When there is acute inflammation from the biofilm periodontal abscess occur. classification based on aetiological criteria

Non-Periodontitis connected abscess: once the acute infections originate from another native supply. eg.Foreign body impaction, alteration in root integrity Classification based on the course of the disease Acute periodontitis symptom: The abscess develops during a short amount of your time and lasts for a couple of days or every week. An acute symptom typically presents as a abrupt onset of pain on biting and a deep throbbing pain during a tooth within which the patient has been tending to clench.

The gingiva becomes red, swollen and tender.

Acute periodontal abscess: This abscess develops in a short period of time and last for few days or a week . An acute abscess develops with a sudden onset of pain on throbbing pain in tooth in which the patient has been tending to clench The gingiva becomes red swollen and tender chronic Periodontal abscess. This condition that last for long time and often develops slowly In chronic stages , a nasty taste and spontaneous bleeding may occur.

The adjacent tooth is tender to bite on and is sometimes mobile. Pus may be present as also may be discharges from the gingival crevice or from a sinus in the mucosa overlying the affected root. Pain is usually of low intensity.

1. Classification based on number
1. Single abscess:Abscess confined to a single tooth.
2. Multiple abscesses:Abscess confined to more than one tooth.

Histopathology

It has been reported that the microorganism colonize the periodontal Abscesses are primarily Gram negative anaerobic rods. Although they are not found in all cases of periodontal abscesses, high frequencies of Porphyromonas gingivalis, Prevotella intermedia, Fusobacterium nucleatum, Campylobacter rectus, and Capnocytophaga spp have been reported[5]. Periodontal bacteria found in culture studies are 1. Porphyromonas gingivalis-55-100% (Lewis et al [6])
2. Prevotella intermedia- 25-100% (Newman and Sims [7])
3. Fusobacterium nucleatum -44-65% (Hafstrom et al [8])
4. Actinobacillus actinomycetemcomitans-25% (Hafstrom et al[8])
5. Camphylobacter rectus- 80% (Hafstrom et al [8])
6. Prevotella melaninogenica-22% (Newman and Sims [7])

Etiology

1. Changes in composition of microflora, bacterial virulence ,or in

host defence could also make pocket lumen insufficient to drain increased suppuration [9]

2. Closure of margins of periodontal pocket may lead to extension of infection on the surrounding tissue due to pressure on suppuration inside the closed pocket. Fibrin secretion may lead to localised accumulation of pus may lead to closure of gingival margin to the tooth surface[10].
3. The development of periodontal abscess in periodontitis may occur at different stages during the course of the infection as an exacerbation of an untreated periodontitis during periodontal therapy in refractory periodontitis or during periodontal maintenance. Also fibrin secretions leading to the local accumulation of pus , may favour the closure of gingival margin to the tooth surface .
4. Changes in compositions of the microflora, bacterial virulence or in host defences could also make the pocket lumen inefficient to drain the increased suppuration.
5. Treatment with systemic antibiotics without- subgingival debridement in patients with advanced periodontitis may also cause abscess formation.
6. Abscess can formed due to inadequate scaling, which will allow calculus to remain in deepest pocket area while resolution of inflammation in coronal pocket area will occlude the normal drainage and entrapment of the sub gingival flora in deepest part of the pocket. Also calculus might get dislodged and pushed into the soft tissue after procedures like scaling

2. Nonperiodontitis Related Abscess

1. Impacted of foreign bodies such as tooth brush bristles, a piece of dental floss, orthodontic elastics a dislodged cemental tear , food (such as fishbone) into the gingival tissues and so on can result in abscess formation. Periodontal abscess caused by forigen bodies related with oral hygiene aids, have been named “oral hygiene aids have been named “ oral hygiene abscess”
2. Lateral perforation of root during endodontic therapy and trauma to the tooth[11].
3. Local factors affecting morphology of roots such as cemental tear, external root resorption, invaginated tooth and cracked tooth may predispose to periodontal abscess formation

Diagnosis

The diagnosis of periodontal abscess usually based on the chief compliant and history of presenting illness . The relevant medical and dental history is mandatory for proper diagnosis of the case. Usually the severity of pain and distress will differentiate an acute from a chronic abscess .The dental history can provide information about periodontal treatments, endodontic therapy and previous abscess. The suspected area should be carefully probed continuity of the lesion with the gingival margin serve as a clinical evidence that the abscess is periodontal . other findings are ovoid swelling of gingiva , pain tooth mobility, tooth elevation , suppuration either spontaneous or on digital pressure and the presence of deep periodontal pockets. Radiographically , it appears as discrete area of radiolucency along the lateral aspect of root. However, lesion in the soft tissue wall of periodontal pocket are less likely to produce radiographic changes than those deep in the supporting tissues.

Differential diagnosis

The differential diagnosis of Periodontal abscess is clinically important to allow the dentist to more clearly understand the condition or circumstances to arrive to a conclusion from following diseases like (Ludwigs angina, space infections of orofacial regions) and plan the treatment.

Treatment

The principles of management of periodontal abscess are as

1. Local measures –

a. Drainage
b. Elimination of the cause

2. Systemic measures- Antibiotics in combinations with local measures

1. Drainage through periodontal pocket: There are 8 steps in the drainage through periodontal pocket[12].

a. Topical anaesthesia is prepared.
b. The pocket wall is gently retracted with a probe / curette in an attempt to create an intial drainage through a pocket entrance.
c. Gentle digital pressure is applied
d. irrigation is done to clear the exudate of the pocket wall
e. If the lesion is small and has good access , scaling and Root planning is done
f. If the lesion is large, drainage cannot be established through scaling and root planning major clinical signs are established through antibiotic therapy
g . In such patients systemic antibiotic with short and high dose regimens is recommended.
b. Drainage through external incision

If the lesion is large, pin –pointed , fluctuating, an external incision can be made to drain the abscess. The steps are as follows:

A. Abscess is drained and isolated with guaze and sponge .
B. Local anaesthesia and nerve block is prepared.
C. Vertical incision is given through a more fluctuating area of abscess on No 11 or 15 Blade
D. Tissue which is lateral to incision is separated using periosteal elevator / curette
E. Light digital pressure is given with moist guaze pad
F. In patients with marked swelling and redness , it is recommended to have systemic antibiotics as a intial treatment to avoid damage to healthy periodontium.

C . Periodontal surgery.

a. Surgical therapy of gingivectomy or flap procedures has been advocated mainly in abscess
b. Surgical flaps have been proposed in cases in which calculus left subgingivally after treatment.
c. The main objective of this therapy is to eliminate calculus and to obtain drainage at the same time
d. A therapy with combination of flap with deep scaling and irrigation with chlorhexidine have also been proposed

D. Systemic antibiotic with or without local drainage[12,5]

Antibiotics are preferred mode of treatment . However local drainage of abscess is mandatory to eliminate the etiological factors. The recommended antibiotic usually follows the culture and sensitivity test. The antibiotic usually given

1. Phenoxymethyl pencillin 250-500 mg qid 7-10 days
2. Amoxycillin / Augmentin 250-500 tds 7-10 days
3. Metrodinazole 250 mg tds 7-10 days can be combined with amoxicillin. The use of metrodinazole is contraindicated in pregnant patients in children below 10 years.

E. Extraction of teeth

1. Extraction of teeth is a last resort to treat periodontal abscess. Certain guidelines should be followed before extraction of teeth.

a. Horizontal mobility more than 1 mm
b. Class II- III furcation involvement of a molar
c. Probing depth >8mm
d. Poor response to therapy
e. More than 40% alveolar bone loss.

Conclusion

The Periodontal abscess typical clinical and histopathology feature. The most prevalent organism p gingivalis P. intermedia and fusobacterium. Different therapeutic alternatives have been proposed for the treatment of the periodontal abscess. Among these incision and drainage scaling and root planning are the sole therapy for the treatment of the periodontal abscess.

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