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## Efficacy of homoeopathic medicines in periodontal abscess: A 3 months clinical study

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### Abstract

Periodontal abscess means collection of pus within the tissues of the periodontium. The three month clinical study was undertaken with an aim to prove the efficacy of homoeopathic medicines in cases of Periodontal at Tanuja Super specialty dental clinic, Andhra Pradesh, India, in which 15 cases were included, maximum cases were between 20 to 60 years of age group. Homoeopathic Medicines was prescribed on the totality of symptoms which prove beneficial for 9 cases recovered, 5 cases improved and 1 case not improved and thus the efficacy of homoeopathic medicines was proved in the treatment of periodontal abscess.

**Keywords:** Homoeopathic Medicines, Periodontal Abscess, out come

### Introduction

A periodontal abscess is a localized purulent inflammation in the periodontal tissues. It is also known as a lateral abscess or parietal abscess. Abscess localized in the gingiva caused by injury to the outer surface of the gingiva and not involving the supporting structures are called gingival abscesses. Gingival abscesses may occur in the presence or absence of a periodontal pocket [1].

Periodontal abscess formation may occur in the following ways:

- Extension of infection from a periodontal pocket deeply in to the supporting periodontal tissues and localized of the suppurative inflammatory process along the lateral aspect of the root.
- Lateral extension of inflammation from the inner surface of a periodontal pocket in to the connective tissue of the pocket wall. Localization of the abscess results when drainage in to the pocket space is impaired.
- Formation in a pocket with a tortuous course around the root. A periodontal abscess may form in the cul de sac, the deep end of which is shut off from the surface.
- Incomplete removal of calculus during treatment of a periodontal pocket. The gingival wall shrinks, occluding the pocket orifice and a periodontal abscess occurs in the sealed off portion of the pocket.
- After trauma to the tooth or with perforation of the lateral wall of the root in endodontic therapy. In these situations a periodontal abscess may occur in the absence of periodontal disease.

**Classification:** periodontal abscesses are classified according to location as follows:

- Abscess in the supporting periodontal tissues along the lateral aspect of the root. In this condition, a sinus generally occurs in the bone that extends laterally from the abscess to the external surface and
- Abscess in the soft tissue wall of a deep periodontal pocket.

Bacterial invasion of the tissues has been reported in abscess: the invading organisms were identified as gram negative cocci, diplococci, fusiforms and spirochetes. Invasive fungi were also found and were interpreted as being opportunistic invaders<sup>2</sup>. Microorganisms that colonize the periodontal abscess have been reported to be primarily gram negative anaerobic rods [3].

### Prevalence of the Periodontal Abscess

Among all the abscesses of periodontium, the periodontal abscess is the most important one. The periodontal abscess is the third most common dental emergency (6-14%), first is the dentoalveolar abscess/ pulpal infection (14-25%) followed by pericoronitis (10-11%) [4].

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The periodontal abscess is more prevalent in periodontitis patients. A periodontal abscess is more likely to occur in presenting pockets [1]. Pockets presents are deeper than 6mm in 62.1% cases while 4-6mm in 34.4% cases. Molars are most commonly involved teeth in 69% of cases. McLeod *et al.* showed 65% of affected teeth are multirooted [5]. The periodontal abscesses were seen 41% associated with first molar, 24% with second molar, 17% with upper premolars, 7% with lower premolars, 7% with incisors and 3.5% with upper third molars.

### Microbiology of Periodontal Abscess

- Bacteroids melaninogenicus subspecies, Fusobacterium subspecies, Vibrio corrodens, Capnocytophaga species, Peptococcus species and Peptostreptococcus species [6].
- Purulent oral infections are polymicrobial and usually caused by endogenous bacteria, however very few studies have investigated the specific microbiota of periodontal abscesses [7].
- About 60% of cultured bacteria were strict anaerobes.
- Most frequent type of bacteria was gram negative anaerobic rods and gram positive facultative cocci.
- In general, gram negatives predominated over gram positive and rods over cocci [8].
- Reports showed that high percentage of abscesses harbor lactamase producing bacteria [9].

### Pathogenesis

After the infiltration of pathogenic bacteria to the periodontium, the bacteria and or bacterial products initiate the inflammatory process consequently activating the inflammatory response. Tissue destruction is caused by the inflammatory cells and their extracellular enzymes. An inflammatory infiltrate is formed, followed by the destruction of the connective tissue. The encapsulation of the bacterial mass occur and pus formation takes place. The lowered tissue resistance and the virulence as well as the number of bacteria present determine the course of infection. The entry of bacteria into the soft tissue wall initiates the formation of the periodontal abscess.

### Clinical Features

Generally patient may be healthy or unhealthy with features that may indicate ongoing systemic diseases, competency of immune system, extremes of age, distress and fatigue. Presence of systemic toxicity as increase in body temperature and malaise may be present. Extra-oral features include asymmetry of face, swelling redness, fluctuant, sinus, trismus and regional/cervical lymphadenopathy can be detected in some patients [10].

Intra-oral features in case of acute periodontal abscess include ovoid elevation of gingiva along lateral aspect of root, redness, mobility, elevation of tooth in socket and tenderness to percussion or mastication. Regarding mobility 56.5% to 79% of teeth showed mobility. 10-40% patients show regional lymphadenopathy [13]. Symptoms may vary from slight discomfort to severe pain and swelling, 55% of acute periodontal abscesses in upper jaw, 48% on buccal aspect, 24% on distal aspect, 13.8% on lingual/palatal aspect and 62% on mesial aspect complained severe pain.

Chronic periodontal abscess generally associated with sinus tract. Orifice of tract may be covered by small granulation pink mass. Patient is usually asymptomatic although can refer mild symptoms as dull or gnawing pain, slight

elevation of tooth and a desire to bite down on and grind the tooth. Common clinical features of periodontal abscess are presence of generalized periodontal disease with pocketing and bone loss, usually associated with a vital tooth, overlying gingival erythematous, tender and swollen, pus discharge via periodontal pocket or sinus opening.

When a periodontal abscess is associated with bifurcation or trifurcation of premolars or molars, a sinus may track to a site distant from the area of infection. In such cases, the sinus track follows a long, narrow and tortuous path [13].

### Investigations of the Periodontal Abscess

Radiographs: Intra-oral or dental radiographs as periapical, bitewings and OPG are used to assess marginal bone loss and periapical condition of involved tooth. Gutta percha point placed through sinus might locate the source of the abscess [14, 15].

Pulp vitality test: Thermal or electrical test could be used to assess the vitality of tooth [16].

Microbial test: Pus sample from sinus or abscess could be sent for microbial culture and antimicrobial sensitivity test.

Lab findings: Blood test may also use to confirm the diagnosis. An increase in number of leukocytes, neutrophils and monocytes may be suggestive of an inflammatory response of body to bacterial toxins in the periodontal abscess.

### Complications of the Periodontal Abscess

Tooth loss: Periodontal abscesses have been suggested as the main cause for tooth extraction during the phase of supportive periodontal therapy (SPT). A tooth with a history of repeated abscess formation is considered to be a tooth with a questionable prognosis. In a retrospective study, 45% of teeth with periodontal abscesses in a SPT population were extracted [17].

### Dissemination of the infection

A number of publications, mainly case reports, have described different systemic infections in different parts of the body, in which the suspected source of infection was a periodontal abscess.

Two possible sources of dissemination have been described:

- Dissemination of the bacteria inside the tissues during therapy. A case of pulmonary actinomycosis was related to the treatment of a periodontal abscess, which was ultrasonically scaled 1 month earlier. A case of brain abscess was observed in a healthy patient with a periodontal abscess who was treated with drainage and curettage without systemic antibiotic 2 weeks earlier.
- Bacterial dissemination through the blood stream due to bacteremia from an untreated abscess. Cellulitis in breast cancer patients have been reported following gingivitis or an abscess, due to transient bacteremia and reduced host defenses (radiation therapy and axillary dissection). A periodontal abscess was associated with the development of a cervical necrotizing fasciitis. A necrotizing cavernositis was thought to be related to a severe periodontal infection, including three periodontal abscesses.

### Materials and Methodology

Patients are considered on the basis of clinical presentations, i.e., pain, abscess over the perio area, fever. The study was undertaken at Tanuja Super Specialty Dental Clinic,

Allagadda, Andhra Pradesh, India, which 15 cases were included and the study was undertaken for a period of three months. Detailed cases was taken, analysis and evaluation following Homoeopathic principles was done. Follow up was seen weekly or fortnightly as per requirement. Physical, radiological and laboratory examinations done periodically whenever needed.

**Prognosis:** Assessment will be based on the general and local improvement of the patients like recovered, improved and not improved.

**Result**

In the below table we can observe that male are 7 (46.66%) and female are 8 (53.33%) out of 15 Periodontal abscess patients.

**Table 1:** Distribution of Cases according to sex

Sex	No. of Patients	Percentage (%)
Male	7	46.66
Female	8	53.33
Total	15	100

In the below table we can observe that 4 (26.66%) patients were studied between age group of 20 to 30 years, 8 (53.33%) patients were studied between 30 to 40 years age group, 2 (13.33%) patients were studied between 40 to 50 years, 1(6.66%) patients were studied between 50 to 60 years age group people.

**Table 2:** Distribution of cases according to age group of patients

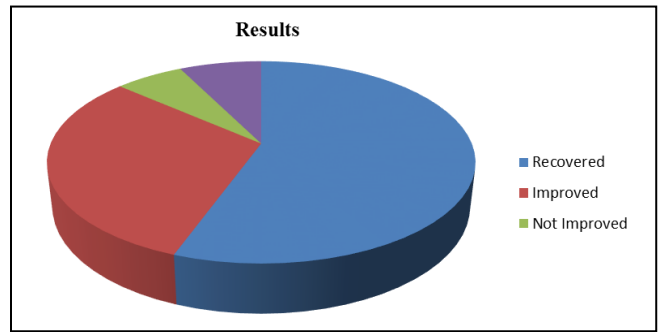
Age group in years	No. of patients	Percentage (%)
20 – 30	4	26.66
30– 40	8	53.33
40 – 50	2	13.33
50-60	1	6.66
Total	15	100.00

In the below we can observe that Homoeopathic Medicines indicated to fifteen patients.

**Table 3:** Distribution of Cases According To Remedy

Medicines	No.of cases	Percentage (%)
Belladonna	5	33.33
Nitric Acid	3	20
Silicea	2	13.33
Mercurius	2	13.33
Ruta Graveolens	1	6.66
Hepar sulph	1	6.66
Gelsemium Sempervirens	1	6.66
Total	15	100.00

In the research of Homoeopathic medicines in the treatment of periodontal abscess 7 Homoeopathic medicines were prescribed to the patients according to the symptoms similarity and the following observations were made. Belladonna is the most effective medicine out of the total Seven Homoeopathic medicines chosen for the study. Belladonna cured 5 (33.33%) cases, Nitric Acid 3 (20%) cases, Silicea 2 (13.33% ) cases, Mercurius 2 (13.33%) cases, Ruta graveolens 1 (6.66%) cases, Hepar Sulph 1 (6.66%) cases, Gelsemium sempervirens 1 (6.66%) cases cured with Homoeopathic Medicines.



**Table 4:** distribution of cases according to patients who dropped out during treatment

**Discussion & Conclusion**

The present study was carried on 15 cases that satisfied the criteria to study the role of Homoeopathic medicines in the treatment of periodontal abscess. Belladonna can be extremely effective in treating Periodontal which is one of the most common human gastro intestinal problems. The infection is very common in developing countries like India. Various systems of medicines have faced difficulties in its management. Homoeopathic remedy prescribed on the basis of law of similar not only improved the periodontal abscess but also prevent future recurrence occurrences.

There is no sex or racial difference in the occurrence of disease Infection can occur in both the sexes. As seen in the study 8 were females and 7 were males. Males were found more affected than the females. This study shows 7 cases where males are affected and 8 cases where females are affected. This study of the past also enables the physician to determine the constitutional and familial tendencies and the miasmatic influences that probably operate to the detriment of the patient [18]

In the study of 15 cases of periodontal, Belladonna was highly prescribed in total cases according to Homoeopathic Principal. In the study conducted on 15 cases of periodontal abscess with Homeopathic remedies, it was found that 15 cases (80%) 9 were recovered, 5 cases (16%) were Improved and 1 case (3.3%) Not Improved.

Thus we can conclude that Homoeopathic medicines used with holistic approach is very effective in treating the cases of Periodontal abscess.

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