

The Hidden Perils of Wisdom Teeth: Safeguarding Periodontal Health

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Abstract: Third molar, which is well known as wisdom tooth. It usually erupts at the age of 18 – 24 yrs, but sometimes it is not able to erupt at the occlusal level of its adjacent teeth either obstructed by any tooth or bone or due to any malalignment. It has the greatest incidence of developmental anomalies and the eruption sequence is also last. So, most of the oral surgeons recommended that it should be removed to avoid any problems later in life, which is called “prophylactic removal”. Though extraction is considered as the treatment of choice, certain periodontal problems are also associated with the extraction of the 3rd molar like; increasing pocket depth and bleeding around the first and second molars. Despite this, the retaining 3rd molar can also create periodontal pathology with the adjacent 2nd molar tooth. So, while making the clinical decision, it's very necessary to assess the periodontal condition. So based on these above objectives, this review paper has been discussed.

Keywords: third molar, periodontitis, prophylactic removal, periodontal pathology, wisdom tooth.

1. Introduction

Periodontitis is an inflammatory condition of the supportive tissues of the teeth which is caused by a specific group of micro-organisms.

3rd molar has been recited as making special problems to the dental surgeons regarding the diagnosis and treatment planning, but the association between the tooth and their gingival changes after the extraction, development of periodontal pocket, amount of bone loss, exposure of cementum on the 2nd molar distally has been received a little bit of consideration. The prophylactic extraction of 3rd molar is basically correlated with the cystic degeneration, possible spreading of infection, fractures and treatment of malocclusion [1].

The aim of this review article is to establish the effect of 3rd molar extraction on the periodontium distally to the second molars, indications and contra-indications of the 3rd molar extraction [2].

The indication for removal of impacted 3rd molar is – recurrent pericoronitis, recurrent infection, prevention of root resorption and caries, impacted 3rd molar, for the preparation of orthognathic surgery, management of pre-posthetic concerns.

Prevention of pain of unexplained origin. The clinical evidence of periodontal pathology or exposure to caries have been found more with the 3rd molar which is clinically along with the and the adjacent tooth rather than the non-third molar tooth as the prevalence of periodontal pathology is more in asymptomatic 3rd molars [3]. Based on this, a study was conducted by John R. Elter to evaluate the relationship of the visible 3rd molar on periodontal pathology by taking 6793 persons aged between 52 -74 and they came to a conclusion that the asymptomatic visible 3rd molar has put a very negative impact on the periodontium in future [4]. Among all these negative impact of 3rd on the periodontium, pericoronitis is the most common one which is an acute inflammation with associated inflammation of gingival and contiguous soft tissue, covering the crown of partially erupted mandibular third molar. The microbes responsible are Pepto streptococcus, Fusobacterium and Bacteroides.

A recent study has been conducted among twenty-five number of patients, those who had an extraction of impacted mandibular 3rd molar, which has been marked as “test” and in the opposite arch, the tooth which was intact marked as a “control”. From this study, it is revealed that there is no marked change in the height of alveolar bone on the adjacent 2nd molar distally on “test” side and slightly loss of bone on the “control” side [5]. Thus, there is pros and cons in both i.e., whether we should do the prophylactic removal or preserve the third molar while concerning about periodontal health. To make a deliberate discussion about 3rd molars and its effect on periodontal health, this review article has been made.

The role of prophylactic extraction of asymptomatic third molar always made a debatable concept; early removal of 3rd molar can be more traumatic and painful compared with leaving the asymptomatic non-pathologic tooth as it is because it involves unnecessary discomfort, pain, malaise, swelling in addition to this it is associated with certain complications like it is associated with certain complications like dry socket, secondary infection, paresthesia.

The second possibility was that, with increase in age the post-operative risks like – excessive pain, excessive swelling, hematoma, delayed healing, dry socket, excessive ecchymosis,

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alveolitis, inferior alveolar and lingual nerve paresthesia can be increased [6].

2. Oral and Systemic Influence of 3rd Molar on Periodontal Pathology

Periodontal health should be predicted by whether the 3rd molar is present or not [6]. A data suggested that this tooth has a greater periodontal probing depth overall, especially on 2nd molar and has a higher biofilm-gingival interface surface area of than in not visible 3rd molar [7]. This tooth also put a very negative impact on the periodontal health among the middle-aged people and older adults [8].

This and its associated pathology seem as a significant risk indicator for periodontal disease progression during pregnancy [9]. Few studies showed that there were increased periodontal problems around wisdom tooth during pregnancy. It may be a combination of factors like; systemic health, nutrition, hormonal changes, stress as well as dental concerns. In a recent study, few trials which has been conducted in long term basis based on the risks of systemic health, found that the visible 3rd molars are associated with periodontal probing depths of (>5mm) and that to mostly at the interproximal area.

While, an author named White. et al, found high level of periodontal pathogens (red and orange complex) and increased gingival crevicular fluid – interleukin 1 beta levels in the region of 3rd molar [10]. Last tooth region has been affected more periodontally in mandible than maxilla.

A survey revealed that patient with the age of 25 yrs or more had 3rd molars at/ above the occlusal plane and patient with less than 25 had below the level of occlusal plane. In spite of age most 3rd molars are vertical/disto-angular rather than mesial/horizontal and the relationship between the occlusal plane and angulations are also considered i.e., Probing depth > 5mm are mostly erupted at the level of occlusal plane is vertical/disto-angular and below the occlusal plane is mesio-angular/horizontal. As there is not much space present in the 3rd molar region, it is nearly impossible to keep that area completely clean. So, along with those local factors (plaque, debris, calculus), it allows the pathogenic micro-organisms to initiate periodontitis and promotes severe destruction. So, if this affected 3rd molar will be retained then elimination of periodontal pocket, reduction of periodontitis will become relatively difficult due to the bony structure and the insufficient soft tissue on that region [11].

Due to this lack of space around 3rd molar and failure on attempt to keep that region completely clean, pericoronitis occur which is the most commonly associated periodontal pathology on 3rd molar tooth. It is defined as an acute infection associated with inflammation of gingival and contiguous soft tissue, covering the crown of the partially erupted impacted mandibular 3rd molar. It includes pain, swelling around the retromolar area, tenderness, difficulty in chewing, trismus, extra oral swelling at the angle of the jaw. The possible complications of pericoronitis are; peri coronal abscess, cellulitis, Ludwig's angina etc.

3. Influence of Prophylactic Extraction of Asymptomatic 3rd Molar on Periodontal Pathology

The indications for extraction of 3rd molars are; episodes of pericoronitis, gross caries, untreatable pulpitis, orthodontic purposes, asymptomatic impacted third molar.

Mandibular 3rd molar extraction significantly improved the periodontal condition on the 2nd molars; by positively affecting overall periodontal health. Few studies have made who correlates to these findings are; Pecora et al., and Grondahl & Lekolm [12].

Beside this, several studies shown that there is formation of deep periodontal pocket s are seen in 2nd molar after the 3rd molar extraction. A study on risks of periodontal defects after 3rd molar extraction which is given by Daniel Richardson & Thomas B. Dodson found that 48 percent had exacerbated periodontal conditions after the removal of 3rd molar which had healthy periodontium before. Prophylactic extraction of 3rd molar is recommended in early stage of life to avoid – increased attachment loss and pocket depth with increasing age, operative risk to patient with increasing age, increased incidence of post-operative morbidity with increasing age.

Some of the studies stated that flap design of 3rd molar does not affect the amount of attachment loss of second molar. However, few studies stated that, flap design contributes an important factor which affects the periodontal status of 2nd molar and it has been found that, while making flap design of 3rd molar, if its lefts an intact gingival collar on the distal side of 2nd molar, then it may produce greatest pocket depth reduction [13].

To intensify the periodontal attachment on the distal root of mandibular 2nd molar, it's adjacent soft tissue should be root planed and curetted immediately. But the benefits obtained from such procedures are very negligible [14].

4. Conclusion

Without giving a second thought, 3rd molars are the tooth which are most commonly sacrificed either due to impaction or carious or due to any other pathology comparing to the remaining teeth. Women in pregnancy need to be made aware by oral surgeons about oral as well as systemic risks of 3rd molar pathology [10]. 3rd molar associated diseases like; pericoronitis, cysts, caries, tumors, resorption of root & periodontal diseases of their adjacent teeth have already gained much more attention from the doctors as well as the patients. On this note, we concluded our review that the effect of non-impacted retentive tooth on its adjacent teeth must gain more attention from the doctors as well as patients by considering the difficulty of treating irreversible periodontal destruction, such as; resorption of alveolar bone by preventing the occurrence of periodontal inflammation [14]. From this above study we came to a conclusion that it is judicious to recommend that 3rd molars must be included in every indices or any assessment to evaluate the level of oral inflammation with periodontal pathology [10].

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