



## IMPACT OF PERICORONITIS ON PALATINE TONSILS: A SHORT CLINICAL STUDY

### KEYWORDS

impaction, tonsils, pericoronitis, microbial flora, aerobic and anaerobic microbes

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### ABSTRACT

**Introduction:** The soft tissue inflammation around the crown of partly erupted or partially erupting tooth is called as pericoronitis, predominantly in 91%-95% case pericoronitis is associated with erupting or partly erupted the lower third molars.

**Aim:** The main aim of this study was to evaluate the associated flora surrounding the impacted third molars and inflamed adjacent tonsils.

**Material and method:** Some of 160 patients were screened with age group 17-27 year were included. Sample collection was done prior to surgical removal of third molar and adjacent tonsils with sterile cotton swab. Samples were sent to microbial culture.

**Results:** The microbial culture analysis implicates that the age group 21-23 shows highest amount of impaction, also associated with pericoronitis, (17), sore throat (16). The prevalence both aerobic and anaerobic microbes similar age group has shown significant rise in microbial flora.

**Conclusion:** The incidences of impaction of third molars in age groups 21-23 have like to prone for infection of palatine tonsils.

### Introduction:

The tooth that fails to erupt into the dental arch within the expected time period, known as impacted tooth. The rationale associated with its impaction may be, because of adjacent teeth, dense overlying bone, excessive soft tissue or a genetic abnormality<sup>1,3</sup>.

The third molars are most often impacted teeth in jaw; mandibular arch and mesioangular were most frequently encountered areas. Furthermore, most commonly accepted reasons behind impacted third molars are the inadequate arch length and space in which to erupt<sup>1,5</sup>.

Epidemiologically, a third molar starts eruption from age of 17 years to 22 years. Functionally these third molars are called vestigial tooth, don't impart role in mastication. However, impaction of third molars associates with inflammation and infection<sup>1,9</sup>.

Third molar without eruption has shown only 21% of pathological changes, where as partial erupted always associated with pericoronitis; classic features of halitosis, bleeding gums and unable to open mouth. Rare but frequent associated complications are local pain, pericoronitis, sore throat, facial cellulitis, facial space infection and trismus<sup>1-10</sup>.

Various studies have been suggesting that the cause for Odontogenic infection were polymicrobial flora, originated from the partially impacted third molar and its covering operculum; best place to dwell microbes<sup>2,7</sup>.

Few studies have been demarcated that, presence of microbes in normal flora and impacted third molar pation flora similar with exception of increased number of Prevotella denticola 80%. Most of the studies have shown that the microbe causing pericoronitis were anaerobic base, originating from plaque. Most common microbe seen in plaque was Strept. Actinomyces, Prevotella, Bacteroides, Fusobacterium, Campylobacter, taph. Lactobacillus, Haemophilus<sup>11</sup>.

The main aim of this study was to evaluate the associated flora surrounding the impacted third molars and inflamed adjacent tonsils.

### Material and method

Study was carried out in department of oral surgery, government dental college Aurangabad, outpatient department. Sum of 160 patients were evaluated with age group 17-27 year. These patients were reported to department with complain of impacted third molar. Microbial flora was collected under aseptic condition.

### Inclusion criteria

Patients were included having following clinical sign and symptoms

- Sore throat
- Pericoronitis.
- Difficulty in swallowing
- Inflamed tonsils

### Exclusion criteria

- Patients not interested to participate in study.
- Antiseptic rinse within 24 hours.

### Data collection

Prior to surgical removal of impacted third molars samples were collected using of sterile cotton swab flora was collected sent to culture media. All the sample were collected in empty local anaesthesia bottles and deep frozen (-1 c). Sample was sent to microbial culture.

### Data analysis

Appropriate software analysis were done using SPSS version 6, for statically comparison chi-square test were used.

### Results

Sl no	Age group	No of cases	No impaction	No pericoronitis	Associated Sore throat	Prevotella Spp	Actinomyces Spp	Lactobacillus Spp
1	18-20	45	21	10	13	20	14	12
2	21-23	67	38	17	16	26	22	19
3	24-26	48	20	6	15	14	12	14

Table 1 gives the clear result that age group 21-23 shows highest amount of impaction, also associated with pericoronitis, (17), sore throat(16). The prevalence both aerobic and anaerobic microbes similar age group has shown significant rise in microbial flora.

This indicates that the incidences of impaction of third molars in age groups 21-23 have like to prone for infection of palatine tonsils.

### Discussion

This study confirms that the incidences and diagnosis of third molar impaction seen in 21-23 year of age. Most of the patients has shown sign of sore throat and inflamed tonsils. Furthermore, culture sensitivity showed that these entire patients were prone to have tonsillitis.

Similar study done in Singapore, china population have been concluded that 64.33% ( at the age of 21-23 age)of populations have been shown initial sign of tonsillitis, study has reported that, pericoronitis associated with impaction exacerbate trismus, and lymphnode enlargement and likely to spread to palatine tonsil and delay or untreated cases results in tonsillitis<sup>4,12</sup>.

The prevalence of aerobic and facultative anaerobic bacteria associated with third molar impaction was *Strept. Viridans*, *Corynebacterium spp.*, *Haemophilus spp.*, *Strept. mutans*, *CNS*, *Staph. aureus*, *Strept. pneumoniae*, *E. coli*, *Strept. Pyogenes* and, *Pseudomonas spp.* similar bacterial species were seen in our study<sup>5-13</sup>. Most of the studies were reported that third molar impaction associated with pericoronitis, sore throat and other oral infections. In our study, another range of bacterial spp(*Actinomyces spp.*, *Prevotella*, *intermedia*, *Prevotella nigrescens*) were detected in impaction with tonsillitis<sup>1-13</sup>.

Various studies have shown that plaque generate best dwelling environment for Gram-positive organisms predominantly. Furthermore, Gram-positive spp facilitates adhesion for anaerobic Gram-negative spp; which are normally found in periodontal pockets and on various oral surfaces. Thus, highly contaminated saliva flows freely between anatomically close sites (pericoronitis to tonsilts).

In this study we have found that, the developmental anatomy of tongue is the predominant source of common salivary bacteria (gram-positive, gram-negative species), normally found in periodontal pockets, and have been frequently isolated from salivary samples. Furthermore, highly contaminated saliva flows freely between anatomically close sites; hence similar bacterial species can be found concomitantly in pericoronal pockets of lower third molars and on adjacent tonsils<sup>1-13</sup>.

Nevertheless, in our study we could not show the well-known suspected pathogens in infected tonsil. However, some bacterial species such as *S. mutans*, *Leptotrichia buccalis*, *Stomatococcus* species and *p. oralis* were found in both in pericoronitis and adjacent inflamed tonsils.

### Conclusion

In our study has been confirmed that the pericoronitis was mainly caused due to gram-negative anaerobic microorganisms. Similar bacterial spp has been profoundly seen in periodontal diseases. However, the involvements of tonsils were the common complication of site and condition of oral flora during pericoronitis.

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