

# Incidence of Deep Abscess Related to Mandibular Third Molar Displace

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## **Abstract**

**Objective:** Casting light on the spread of deep abscess related to mandibular third molar displace in the community.

**Patients and Methods:** One hundred thirty two out-patients with dental problems due to third molar were considered in this study.

**Results:** The incidence rate of deep abscess is found to be 16.67% with male to female ratio 2.14:1. The incidence rate of third molar displacement is found to be approximately 10.61%. Male to female ratio of third molar displacement is 1:1. Third molar extraction was done for 39 (29.55%) of the patients with male to female ratio 2:1. With respect to displaced third molar, surgical extraction was done for 71.43% of the cases. Age was not found to affect displacement, size of abscess and the decision of surgical extraction.

**Conclusion:** It is of interest to mention that this problem occurred in males and females with equal potentiality. Reasons of why it happened in this pattern are not clear yet.

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## **Introduction**

Third molar problems were the concern of many dentists<sup>1-3</sup> as well as dental associations<sup>4</sup>. Indications of abscess development may include severe toothache, swollen, throbbing, red face and may be fever<sup>5</sup>. Severe toothache alone accounted for about 20.7% among other clinical indications<sup>6</sup>.

About 27% of third molar removal extractions had been scheduled for 'prophylactic' reasons<sup>7</sup>. Different published reports have suggested that the practice of prophylactic lower third molar surgery is widespread, possibly account for up to 50% of all patients treated<sup>6</sup>. Historically, the practice of prophylactic removal of lower third molars was widely accepted, especially prior to the antibiotic era. The occasional fatality as a result of uncontrolled pericoronitis influenced the treatment decisions of many surgeons who trained in that era<sup>8</sup>.

A cyst may develop from the soft tissue around an impacted wisdom tooth<sup>9</sup>. Cysts may cause bone destruction, jaw expansion and displacement or damage to an adjacent tooth<sup>4</sup>. The removal of the tooth and cyst is necessary to prevent further bone loss. Rarely, tumors may develop within these cysts or the jaw may fracture spontaneously if the cyst grows very large<sup>9</sup>.

Management of the abscess can be done by first controlling the infection with antibiotics, and then drain the abscess, either by incising it where it is pointing, or by removing the infected tooth, which acts as a cork to prevent the pus escaping, or by doing both things<sup>10</sup>. If a tooth is removed before controlling the infection with antibiotics, and the face of the patient is still severely swollen, infection may be spread; the task of tooth removal will also be more difficult<sup>10</sup>.

Patients with severe toothache due to mandibular abscess formation are routinely seen in every dental clinic.

This study aimed to investigate whether or not deep abscess formation is caused by lower third molar displacement.

### ***Patients and Methods***

During the period April the 1<sup>st</sup> 2004 until March the 31<sup>st</sup> 2005, 132 (87 male (65.91%) and 45 female (34.09%)) out patients with mandibular third molar abscess had been seen in private dental clinics of Ramadi city, Anbar governorate, Iraq.

Each patient has been clinically examined and sent to do a panoramic X-ray. The evaluation of whether or not the abscess is deep, was depending upon the size of the radiolucent area appears in the film. Abscess greater than 1 cm are considered to be deep<sup>5</sup>.

Antibiotics are indicated in cases of abscess after pus drainage. If the infection is suitable for local drainage, then antibiotics are not necessary. Otherwise, in the cases where there is a spreading cellulites then procaine penicillin 600,000 units (2 ml) is given intramuscularly. If the condition of the

patient' infection seems to be serious then a megaunit of benzyl penicillin 4 to 6-hourly is given.

Surgical and non-surgical extraction of the third molar tooth is decided according to the evaluation of the position and condition of the third molar after managing the infection for each patient<sup>11</sup>.

### ***Results***

The age approximately ranged between (19 to 33 years) with mean age of 26.492 years and standard deviation equals to 2.448 years, that is (26.492±2.448 years). Figure 1 shows the frequency distribution of the age of sample individuals. The two-sample t-test has been used to test whether or not female mean age (26.33±2.55 years) is significantly different from male mean age (26.57±2.40 years). The result of this test indicates that there is no significant difference between the two mean ages ( $t=0.53$ ,  $df=84$ ,  $p>0.05$ ). The male to female ratio is found to be 1.93:1.

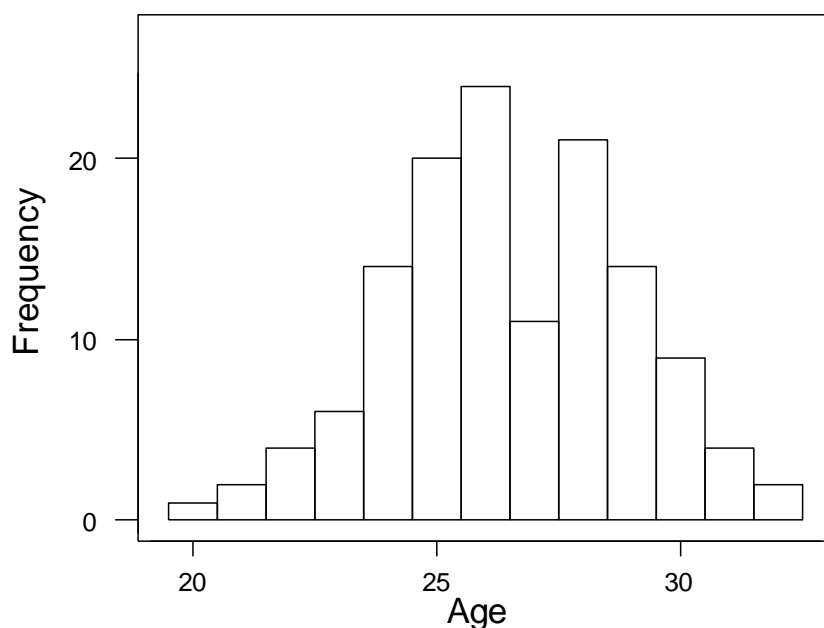


Fig.1: Frequency distribution of age for the total sample.

Out of 132, 14 patients found to have third molar displacement. Accordingly, the incidence rate of third molar displacement is found to be approximately 10.61%. The male to female ratio of third molar displacement is 1:1. Twenty two patients found to experienced deep abscess which indicates that the incidence rate of deep abscess is 16.67% with male to female ratio 2.14:1. Third molar extraction has been done for 39 (29.55%) of the patients with male to female ratio 2:1.

Surgical extraction was performed to 18 patients (13.64%) of the total sample. With respect to the total number of extracted tooth, surgical extraction is accounted for 46.15%. With respect to displaced third molar, surgical extraction has been done for 71.43% of the cases.

In order to see the effect of age on third molar displacement, size of the abscess and surgical extraction, the two-sample t-test have carried out for each effect (table 1).

**Table 1: The two-sample t-test for the difference between mean ages**

Effect	Mean age		t-test	p-value
	Mean $\pm$ SD	Mean $\pm$ SD		
	Yes	No		
<b>Displacement</b>	<b>26.79<math>\pm</math>2.29</b>	<b>26.46<math>\pm</math>2.47</b>	<b>-0.5</b>	<b>&gt;0.05</b>
<b>Deep abscess</b>	<b>27.09<math>\pm</math>2.29</b>	<b>26.37<math>\pm</math>2.47</b>	<b>-1.33</b>	<b>&gt;0.05</b>
<b>Surgical extraction</b>	<b>27.06<math>\pm</math>2.10</b>	<b>26.40<math>\pm</math>2.50</b>	<b>-1.19</b>	<b>&gt;0.05</b>

The use of Chi-square test for association between deep abscess and displacement of third molar suggests that there is no significant association between the size of the cyst and third molar displacement ( $\chi^2=1.764$ , df=1, p-value >0.05). Surgical extraction is not necessarily carried out for

displaced third molar. Chi-square test is also suggests that there is a significant association between third molar displacement and surgical extraction ( $\chi^2=44.415$ , df=1, p-value <0.01). The association between surgical extraction and deep abscess is found to be significant ( $\chi^2=46.316$ , df=1, p-value <0.01).

## ***Discussion***

In the present study the percentage of surgical extraction of mandibular third molar tooth (46.15%) is the same findings of Pratt (1998)<sup>6</sup>.

Surgical or non-surgical extraction was done according to the clinical evaluation of the tooth condition, and extraction due to 'prophylactic' reasons never been adopted. This decision therefore, contradict the findings of Brickley, 1996<sup>3</sup>. There is no clear scientific argument why lower third molars should be extracted or why dentists should be

aware of them while there is no convinced reason why such a procedure should be followed.

Surgical extraction is not necessarily carried out for every displaced third molar, rather a clinical and radiographic evaluation must be made before tacking such a decision.

Although there is no evidence for a significant association between third molar displacement and deep abscess( $p>0.05$ ), there have been exists some cases where both variables occurred in the same patient.

The causative relationship between these two variables is very difficult to understood.

Age and sex are found to be of no significant ( $p>0.05$ ) effect on neither on the size of the abscess nor on the third molars displacement.

All patients with deep abscess showed sufficient clinical indications for third molar removal.

## ***Conclusion***

Third molar displacement noticed in 10.61% of the considered number of patients in this study. It is of interest to mention that this problem occurred in males and females with equal potentiality. Reasons of why it happened in this pattern are not clear yet.

## ***References***

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