

## A study to determine the prevalence of impacted third molars among patients seen in Dar es Salaam Dental Clinics.

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### Abstract

Impacted teeth are commonly observed in Dental clinics all over the country. However, people may live with impacted teeth to old age without problems. This study aimed at determining the prevalence and the pattern of the impacted third molars among patients seen in Dar es Salaam.

A convenient sample of 1198 patients ages 21 – 45 years was studied. 53% of the patients were males. Oral examination was carried out among patients attending dental clinics in Dar es Salaam during the month of July – December 2000. The third molar impaction were recorded according to Kruger (1968) 21.3% of the examined patients had at least one impacted tooth. 14.5% of the lower third molars were impacted. 60% of the impacted third molars were of mesiangular type. The prevalence of impacted third molar was found to be high, thus more research should be carried out, to find out how impaction affects the individual quality of life

### Introduction

Impacted teeth are commonly observed in dental clinics all over the country. Most dental practitioners hold the opinion that teeth buried in the soft tissue or bone beyond its normal eruption time, or partially erupted, should be removed once diagnosed (Laskin 1969, Odusanya, 1982). However people may live with impacted teeth to old age without causing inconveniences. To most patients, removing a tooth is a fearful procedure. Therefore to remove an impacted tooth as a preventive measure for trouble it may cause in the future might not be justified.

The lower third molars in its development and eruption is mesially angulated while the upper third molar is distally directed (Killey 1969). Being the last teeth to erupt in the jaw they are more subjected to eruption abnormalities than the other teeth (Scott & Symon 1958). Much of these abnormalities will be determined by the morphology of the jaw, in relation to the size, the number and form of permanent teeth. This can be explained by lack of space to accommodate these teeth.

Among the few complications of clinical importance in dental practice that require immediate attention in the presence of impacted teeth include, pericoronitis, erosion of the distal surface of the adjacent tooth, pocket formation, development of dentigerous cyst and though rare, development of ameloblastoma (Killey & Key 1969).

Few studies have been carried out about the prevalence of third molar impaction among Africans. In a study among Nigerian youth, a low occurrence of impacted wisdom teeth was recorded (Odusanya 1984). In Tanzania, no such studies have been carried out. However the number of patients in need of treatment cannot be neglected. The purpose of this study

therefore is to determine the prevalence and the pattern of impacted third molars among Tanzanians.

### Materials and Methods

Oral examination was carried out to patients during the month of July – December 2000. A convenient sample of patients was drawn from three registered private dental clinics, one government Health Centre and two government hospitals in Dar es Salaam. The sample size included 1198 patients with age range 21 – 45 years (Males 53%) Table II.

Third molar impaction were recorded according to (Kruger 1968). The types of impaction were classified as vertical, mesioangular, horizontal and distoangular impaction. No radiograph was taken. Pericoronitis and pain due to pressure were recorded as present or absent. Patients, who had lost one or more of the third molar as a result of disease, were excluded from the study. Likewise patients with un-erupted third molar were also excluded.

The examination was done by a dentist (the author), using mouth mirror, dental explorer, aided by natural light. The patients were seated on a Dental chair. Intra-examiner variability was not done due to logistic constraints. Data processing and analysis was done manually.

### Results

A total of 1198 patients aged 21 years and above who reported at the dental clinic centers in Dar es Salaam were entered into the study, of these 21.3% were observed to have at least one impacted third molar tooth.

Third molar impactions occurred more frequently (86.6%) in the lower jaw than the upper jaw (table I).

The majority of third molar impaction observed in this study were of the mesioangular type 60% followed by vertical (17%), distoangular (15%) and horizontal type (8%) table III. Of the total impacted teeth recorded, 53% were observed in male, while 47% was recorded in female table II. More of the impacted third molar teeth were observed in the lower age group, 45%, with steady drop to 4% in the elder age group table II. The ratio of impacted third molar teeth to the normal erupted third molar teeth was observed to be 1:12.

### Discussion

As compared to other findings, the frequency of impacted third molar in this study group seemed to be low (Morris et al 1971, Odusanya 1984). The ratio of one impacted third molar tooth to every twelve normal third molar teeth erupted, cannot be categorized as high. However, according to Sandhu (1982) a prevalence of 21.3% is considered to be high.

The main cause of these anomalies seem to be lack of space. Lower third molar is mesially angulated during development hence mesioangulated impaction are frequently observed. Likewise distoangulated impactions are common in the maxillary third molar because they are distoangulated during development (Morris et al 1971). Third molars, like any other teeth, are all partially erupted at some time during their eruption. Eruption of a tooth is sometimes associated with gingivitis (Shapherd 1993). One complication of third molar impaction frequently encountered in this study group was pericoronitis. This observation has also been reported by Killey & Kay (1969). This demands effective treatment of the pericoronitis without delay followed by removal of the tooth when infection has been contained.

It can be speculated that if teeth erupt at an earlier age before the jaw has developed to its maximum size, there is a possibility that the third molar teeth will not have enough space for eruption leading to impactions. The age range within which third molars erupt is stated by various authors to be 16 – 25 years, but the rate at

which third molars erupt after emerging into the mouth remains not clear (Aslett, 1988).

In the present study third molar impaction seem to be more prevalent in the lower jaw than in the upper jaw. This observation is in accordance with previous studies (Odusanya, 1986). It was also noted in this study that the prevalence of third molar impaction decreases with age. With these findings, an important hypothesis can be suggested. "The molar teeth in the lower jaw are usually but not always large in size compared to upper molar teeth, hence minimize the space required to accommodate lower third molar".

Impacted third molar teeth if symptom-less or unerupted could be left alone (Shapherd, 1993). However, some authors advocate the removal of the exposed ones with fear that they may cause caries and periodontal diseases (Laskin 1969, Little 1979). Sherperhear (1993) pointed out that none of us would prefer to have his/her appendix removed for fear that it will cause trouble in the future. Likewise it seems illogical to remove unerupted and partially erupted third molar, just as it is for tonsil removal.

### Conclusion

From this study it was found that the prevalence of third molar impaction was substantially high 21.3%. Third molar impaction is more prominent in the lower jaw than the upper jaw, and the frequency decreases with age. Further studies are recommended to find out how the impaction affects individuals oral quality of life.

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**Table I: third molar impaction in 1198 patients examined.**

| Teeth              | Patient with at least one impacted tooth | No. of third molar present | Total No. of impacted third molars |
|--------------------|--|----------------------------|------------------------------------|
| Lower third molars | 216                                      | 2396                       | 349 (86.6%)                        |
| Upper third molars | 39                                       | 2396                       | 54 (13.4%)                         |
| Total              | 255                                      | 4792                       | 403 (100%)                         |

**Table II: Distribution of impacted third molars by age and sex.**

| Age \ Sex | 21-25     | 26-30     | 31-35    | 36-40   | 41-45   | Total      |
|-----------|-----------|-----------|----------|---------|---------|------------|
| Male      | 90        | 60        | 29       | 22      | 9       | 210 (53%)  |
| Female    | 91        | 54        | 31       | 9       | 8       | 193 (47%)  |
| Total     | 181 (45%) | 114 (28%) | 60 (15%) | 31 (8%) | 17 (4%) | 403 (100%) |

**Table III: Percentage distribution of type of third molar impaction.**

| Type of impaction | No of impaction | % Distribution |
|-------------------|-----------------|----------------|
| Mesialangular     | 242             | 60%            |
| Horizontal        | 32              | 8%             |
| Vertical          | 69              | 17%            |
| Distoangular      | 60              | 15%            |

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