

THIRD MOLAR IMPACTION : EVALUATION OF THE SYMPTOMS AND PATTERN OF IMPACTION OF MANDIBULAR THIRD MOLAR TEETH IN NIGERIANS

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INTRODUCTION

Teeth may become impacted when they fail to erupt or develop into the proper functional location. Impacted teeth may therefore be non-functional, abnormal, or pathological (1, 2). The causes of impacted third molars include inadequate space in the mandible to accommodate the erupting teeth (1, 4). Teeth that fail to attain a functional position may be pathological and should be considered for removal. The indications for removals include, pain pericoronitis, periodontal disease, caries, and cyst formation (5, 6).

The mandibular third molar is the most common tooth to become impacted. Several studies have been done on impacted mandibular third molars in developed countries, where several millions of dollars are spent annually on the management of impacted third molars (7, 8, 9, 10). In fact, it is regarded as the most common oral surgery performed (9). Although, only a few studies have been published, none was done on the level or depth of impaction of mandibular third molar teeth in Nigerians (11, 12, 13, 14).

The aim of this study therefore, is to analyze the pattern, symptoms and pathology associated with impacted mandibular third molar teeth in Nigerians.

PATIENTS AND METHODS

A total of 338 patients aged 16 years and above, who presented at the Dental Centre, University College Hospital, Ibadan, with impacted mandibular third molar

teeth from January 1996 to December 2000, were studied. Periapical radiographs and when necessary, oblique lateral radiographs of the mandible were used. The level of impaction was determined using PELL and GREGORY classification (15) as follows :

- * Position A : The highest portion of the impacted mandibular third molar is on a level with or above the occlusal plane.
- * Position B : The highest portion of the impacted mandibular third molar is below the occlusal plane but above the cervical line of the second mandibular molar.
- * Position C : The highest portion of the impacted mandibular third molar is below the cervical line of the second mandibular molar.
- * Position I : None of the crown is in the ramus of the mandible.
- * Position II : Less than half of the crown is in the ramus.
- * Position III : More than half of the crown is in the ramus.

The results were analyzed using simple proportions.

RESULTS

Three hundred and thirty eight patients were seen. Their ages range from 16 to 54 years, with a mean of 24.41 and standard deviation 6.12 years. One hundred and eighty one (53.55 %) were females and 157 (46.45 %), males.

Four hundred and seventy three impacted mandibular third molars were seen. Detailed distribution is presented in Table 1.

Table 1 : Age distribution of types of impaction

Age (years)	16-20	21-25	26-30	31-35	36-40	41>	Total
Mesioangular	77	74	41	16	10	10	228 (48,20)
Vertical	36	88	16	3	0	0	143 (30,23)
Horizontal	21	27	16	2	6	2	74 (15,64)
Distoangular	7	10	6	0	3	0	26 (5,50)
Inverted	0	1	0	1	0	0	2 (0,42)
Total	141	200	79	22	19	12	473
%	29,81	42,28	16,71	4,65	4,02	2,54	100

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A total of 341 (72.09 %) impaction were seen in patients between the ages of 16 to 25 years, while 420 (88.8 %) impaction were seen between the ages of 16 to 30 years. Assessing the level of impaction using PELL and GREGORY classification showed that 358 (54.55 %) impaction were in position A, 151 (31.92 %) were in position B while 64 (13.53 %) were in position C. One hundred and seven (22.62 %) were in position I, 288 (60.89 %) were in position II, while 78 (16.49 %) were in position III.

Of the 473 impacted mandibular third molars, 323 (68.29 %) had symptoms of pain. The distribution of impacted teeth with symptoms is presented in Table 2. Two hundred and seventy two (57.51 %) impacted teeth were associated with pathology. Out of these, 203 (42.92 %) were pericoronitis and periodontal disease, 66 (13.95 %) were caries, while 3 (0.63 %) were associated with cysts.

Table 2 : Distribution of impactions with symptom of pain

Types of impaction	No . Of impaction (%)	Impaction with symptom of pain (%)
Mesioangular	228 (48,20)	171 (36,15)
Vertical	143 (30,23)	86 (18,18)
Horizontal	74 (15,64)	41 (8,64)
Distoangular	26 (5,50)	24 (5,07)
Inverted	2 (0,42)	1 (0,21)
Total	473 (100)	323 (68,29)

DISCUSSION

The impacted tooth that is most frequently extracted is the mandibular third molar. The investigations for its removal include determining the type and degree of impaction so as to assess the level of difficulty during extraction. Our finding on the types of impaction is similar to a previous study in Nigeria by ODUSANYA (13) except for horizontal impaction which was more frequent than disto-angular impaction in this study. Results from the developed countries, however differ in the number of transverse horizontal, inverted and aberrated impaction, which (6, 16) were higher than those obtained in Nigeria.

It was observed that 13.53 % and 16.49 % of the impacted mandibular third molars were in positions C and III respectively. In these positions, the impacted teeth are

either completely embedded or most of the crown is, and suggests a difficult extraction which would best be done under general anesthesia, for the comfort of the patient. Significantly large proportion of the impaction fall within positions B (31.92 %), and II (60.89 %), indicating that the extractions would be moderately difficult and the choice of appropriate anesthesia whether local or general, would depend on the surgeon's evaluation and the patient's preference. These findings suggest that a remarkable number of impaction should be removed under general anesthesia.

There is therefore the need for further studies to determine if there is any relationship between the level of impaction and impacted third molars extracted under general anesthesia.

Pericoronitis and periodontal disease were the most common lesions associated with impacted mandibular third molars. Next was caries, followed by cysts. These observations are similar to a previous study by one of the author. However, odontoma and squamous cell carcinoma which recorded 0.47 % and 0.24 % in that study was not seen, and may be an indication that these lesions were incidental findings (12).

PUNWUTIKORN et al (17) reported that where symptoms exist, pain was common to erupted and unerupted mandibular third molars. Our finding did not differ. However, pain was most frequent in disto-angular impaction. While 68.29 % of the impacted third molars had symptoms, 31.71 % were asymptomatic and disease free. It was widely accepted that asymptomatic disease free mandibular third molars be extracted for prophylactic reasons (2, 5, 6). However, the removals of this category of third molars appear controversial. EDWARDS et al. argue that asymptomatic disease free impacted molars need not be extracted unless the likelihood of developing pericoronitis and caries increased substantially. VENTA et al. observed that unerupted and partly erupted third molars undergo continuous clinical change in position up to the age of 32 years. Their study suggests that some unerupted and partly erupted third molar teeth may erupt into occlusion. FLICK (9) however, stated that there is little agreement on how many third molars are being removed for prophylactic reasons, and that available studies on non-intervention are few and have significant flaws. He added that studies that argue against prophylactic removal are largely based on statistical models, hence its application for clinical decision making is questionable. He concluded that there is need a large population based study.

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The conclusion of FLICK is equally relevant to this study. The incidence, types and level of impaction, incidence of symptoms and diseases associated with third molar impaction in developing countries are grossly inadequate for proper planning and management of impacted third

molars. There is therefore an urgent need for a population based study in order to determine the nature of third molar impaction in Nigerians, for effectual planning.

ABSTRACT

Three hundred and thirty eight patients between the ages of 16 and 54 years (mean 24.4, standard deviation 6.1 years) were seen. They presented with 473 impacted mandibular third molars.

A total of 341 (72.09 %) impaction were seen in patients between the ages of 16 to 25 years, while 420 (88.8 %) impaction were seen between the ages of 16 to 30 years. Assessing the level of impaction using PELL and GREGORY classification showed that 358 (54.55 %) impaction were in position A, 151 (31.92%) were in position B while 64 (13.53 %) were in position C. One hundred and seven (22.62 %) were in position I, 288 (60.89 %) were in position II, while 78 (16.49 %) were in position III.

Of the 473 impacted mandibular third molars, 323 (68.29 %) had symptoms of pain. Two hundred and seventy two (57.51 %) impacted teeth were associated with pathology. Out of these, 203 (42.92 %) were pericoronitis and periodontal disease, 66 (13.95 %) were caries, while 3 (0.63 %) were associated with cysts.

In conclusion, the level of impaction suggests that a remarkable number of impacted mandibular third molars should be removed under general anesthesia. There is need for further studies to determine the levels of impaction, the types of anesthesia used during extraction and the outcome.

Key words : *Third molars, pattern, impaction.*

RESUME

Trois cent trente-huit malades entre 16 et 54 ans (c'est-à-dire 24,4, déviation standard 6,1 ans) ont été vus. Ils avaient présenté 473 molaires inférieures enclavées.

Un total de 341 (72.09 %) enclavées provenaient des malades entre 16 et 25 ans, tandis que 420 (88.8 %) enclavées ont été découvertes entre 16 et 30 ans. L'évaluation du niveau d'enclave en utilisant la classification de PELL et GREGORY a montré que 358 (54.55 %) d'enclavées étaient en position A, 151 (31.92 %) étaient en position B alors que 64 (13.53 %) étaient en position C. Cent sept (22.62 %) étaient en position I, 288 (60.89 %) étaient en position II, alors que 78 (16.49 %) étaient en position III.

Des 473 molaires inférieures enclavées, 323 (68.29 %) ont des symptômes de douleur. Deux cent soixante-douze (57.51 %) dents enclavées étaient associées à la pathologie. De celles-ci, 203 (42.92 %) étaient des maladies «péricoronaires et périodontales», 66 (13.95 %) étaient des caries alors que 3 (0.63 %) étaient associées aux kystes.

En conclusion, le degré d'enclave suggère qu'un bon nombre de molaires inférieures enclavées soient opérées sous anesthésie générale. On aurait besoin de faire des études ultérieures pour déterminer le degré d'enclavement, les types d'anesthésie utilisés pendant l'extraction et le résultat.

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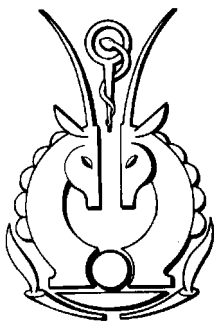
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