

The Prevalence of Impacted Third Molars (M3) in Baghdad City.

مدى انتشار اضراس العقل المطمورة في مدينة بغداد

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Abstract

Dental epidemiological studies in Iraq are scarce and not updated. This study was conducted to evaluate the impaction status of third molars in Baghdad to define the need for surgical intervention and to establish a baseline data. A total of 2105 male and female subjects were examined. Their ages were ranging between 19-70 years old.

In addition to M3 impaction, fluorosis, TMJ complaints, mucosal bony lesions and pain from the impaction were recorded. All subjects were examined in the dental clinics

Results showed that 10% of the sample had impacted M3, 50% of those complaining of pain, while the percentage of mucosal and bony lesions was 2%.

الخلاصة //

تعتبر المسوحات السنوية في العراق قليلة لذا اجرت هذه الدراسة لتقدير مدى انتشار اضراس العقل المطمورة في مدينة بغداد ولمعرفة الحاجة للتدخل الجراحي واعطاء بيانات عن الوضع السنوي في العراق . وقد فحص الفان ومائة وخمس مرضى تتراوح اعمارهم بين ١٩-٧٠ عاما ، كما تم تسجيل الافات المخاطية والام المفصل الفكي والام الاضراس المطمورة . اظهرت النتائج ان مانسبة ١٠ % من العينة لديهم اضراس عقل مطمورة وان ٥٠ % منهم يعانون من الام بسبب هذه الاضراس بينما كانت نسبة المصابين بافات مخاطية وعظمية ٢ % .

Introduction

Surveys of the prevalence of impacted M3 are relatively few all over the world particularly in Jordan. Impacted wisdom teeth account for 98% of all impacted teeth (1). The presence or absence of impactions of M3, the age at which they develop, time of eruption, position, and direction of impaction should be of concern to every dentist.

Generally, one is tempted to deduce that the

earliest age at which M3 are radiographically apparent is 8-10 years, and their crown calcification are completed at the age of 14-15 years (2).

Agensis of one or more M3 vary widely in different races, for example: 1% in African Negro's, 10%-25% in whites, 30% in Japanese and chines, and 19%-35% in Scandinavians (3).

Time of eruption of M3 is also variable, starting at the age of 13 years for females in Nigerians to 24 years in other race (3).

The aim of this study was to assess the prevalence of impacted M3, to evaluate the frequency of pain due to this condition, and to detect the associated pathological conditions that can be deduced clinically.

Materials and Methods

Two thousands one hundred and five patients were examined in the dental clinic .The mean age was 33.63 years. The duration of the examination lasts about three months, classical dental instruments are used during the examination i.e. mouth mirror, dental probe . Radiographic examination was used when necessary.

A dental assistant was recording the results on a special chart prepared for this purpose. All patients were examined by one examiner. Third molar impaction was considered impacted when its

complete eruption was prevented or blocked by an adjacent tooth, bone, or soft tissue. The results have been analyzed by SPSS computer program.

Results:

Two thousand one hundred and five (2105) patients with age ranged from 19-70 years were studied. The majority was in the third decade (45.8%). The mean age was 33.63 years old. The number of patients with impacted M3 was 203. The percentage of patients with impacted M3 was 10%. The numbers of impacted M3 found in 203 patients was 637. The mean was 3.147 patients. Of those 53% of the impacted M3 were in females. Fifty one percent were in the mandible and 18% were in the maxilla. Age and sex distribution is shown in table I.

Table II shows the number of impacted M3 related to sex. Table III shows the frequency rates for types of impactions in the mandible and maxilla. Table IV shows the percentages of pathological conditions accompanied with impacted mandibular and maxillary teeth.

Table I: Age and sex distribution.

Age frequency	Female	Male	Total	Percent
15-19	05	04	09	04.4
20-29	60	33	93	54.8
30-39	22	30	52	25.6
40-49	08	13	21	10.3
50-59	06	05	11	05.4
60-70	07	10	17	08.4
Total	108	95	203	100.0

Table II: Number of impacted M3 related to sex.

	One	Two	Three	Four	Total
Female	10 (09.3%)	26(24.1%)	05 (04.6%)	067 (62.0%)	108
Male	06 (05.3%)	35 (36.8%)	06 (06.3%)	048 (50.5%)	095
Total	16(07.4%)	61 (30.0%)	11 (05.4%)	115 (56.7%)	203

Table III: Frequency table for types of impaction of mandibular and maxillary M3.

	Mandible	Maxndible	Both	Total
Vertical	15(71.4%)	00 (00.0%)	06 (28.6%)	21
Mesioagular	16(100%)	00 (00.0%)	00 (00.0%)	16
Horizontal	05(71.4%)	00 (00.0%)	02 (28.6%)	07
Distoangula	00 (00.0%)	00 (00.0%)	00 (00.0%)	00
Total	36(81.8%)	00 (00.0%)	08(18.2%)	44

Table IV: Shows the percentages of other pathological conditions seen during screening the impacted M3.

The pathological condition	Total
Pericoronitis	42%
Badly damaged teeth	12%
TMJ complaints	15%
Mucosal bony lesion	02%
Pain from impacted MB	46%
Crewcling of interior teeth	19%

Discussion :

Impacted third molars account for 98% of all impacted teeth (1). The cause of agenesis of one or more teeth is basically unknown, but there are several possible explanations that have been suggested such as, physical disruption of the dental lamina, space limitation, and an inherent defect of the dental lamina or failure of induction of the underlying mesenchyme.

Impaction of M3 may occur as a result of retardation of facial growth, vertical direction of the condylar growth with low resorption of the anterior border of the ramus, distal direction of the eruption of the other teeth, early physical maturity, and late M3 mineralization (4,5,6). Growth of both mandible and maxilla is normally completed by 16 to 17 years of age. The mean age of the patients in this study is 33.63 years, which is very suitable age for studying the prevalence of M3 and its impaction. In this case, overestimation of M3 agenesis as a result of unnoticed early extraction can be avoided as well as many impacted M3 can change their position and erupt after the age of 18-20 years (7,8,9).

Results of this study showed that the presence of impacted M3 is higher in females than in males. This findings agree with the study of Maavita (10). Hattab et al. (3) found that the proportion of M3 agenesis for Jordanian females was less than males, but the difference , unlike the sample of Thompson et al. (11) was not significant.

Regarding the presence of M3 in the mandible and maxilla, we found that the percentage is higher in the mandible, it was 51% in the mandible and 18% in the maxilla. This was in agreement with Maa'ita (10). Hattab (3) and other studies reported that maxillary M3 were more commonly missing than mandibular M3 (12,13,14).

Equal distribution between the left and right sides was reported by some investigators such as: Helman (15), Grahane (16) and Shah (17).

Results of this study revealed that the frequencies of M3 impaction are higher in the vertical, mesioangular, and horizontal directions. It was 21% , 16%, and 7% respectively. Maa'ia found that it was 32% in the vertical direction, 44% in the mesioangular, and 8% in the horizontal whereas Hattab found 50% mesioangular, 39% vertical and 5% horizontal (3).

Concerning the pericoronitis condition, we found that 42% of the lower M3 impactions is accompanied with Pericoronitis. In Maavia study the percentage was 24%.

Kay (18) has reported that the occurrence of pericoronitis in relation to lower third molars is variable. Peak age of occurrence varies from 21-25 years and recurrence varies from 3 to 15 months depending on whether or not the impinging maxillary tooth has been extracted. It has been shown that impinging maxillary dentition contribute to the process in more than 33% of cases (19). It is noteworthy that the effect of M3 surgery on periodontal health showed a higher prevalence of

plaque, gingivitis, and periodontal pockets on the distal surface of M2. Infrabony defect equal or greater than 4 mm was seen in 32.1 % of cases, and deteriorated in patients aged more than 26 years (20). So, we urge our colleagues to take these side effects into their consideration when extracting M3. Badly damaged M3 or dental caries was 12%. This is similar with many other studies such as Maavita 8% (10), Vander Linden et al. 7.1% (21), and Samsudin and Mason 6.5% (22).

This study showed that 54% of the patients had no pain from the impacted M3, 85% had no pain from the TMJ, 33% of the patients had no flurosis, 26% had mild flurosis, and 41% had obvious flurosis. Other pathological conditions such as mucosal or bony lesions, the percentage was 2%. Concerning the judgment between surgeon and general dental practitioners of the need for extraction of a symptomatic M3. There is a great variation among oral surgeons and general dental practitioners in their judgment on the need for removal of a symptomatic M3. Knutsson found that there was no M3 that all the observers agreed should be extracted. From 36 teeth, the oral surgeons proposed to extract 3-21 teeth (23).

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