



Original article

Mandibular Wisdom Teeth: Removal of 52 teeth at the Surgical Department of the University Hospital of Odontostomatology in Bamako, Mali

Extractions des dents de sagesse mandibulaires dans le service de chirurgie du Centre Hospitalier Universitaire- Centre National d'OdontoStomatologie de Bamako, Mali : 52 cas

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Résumé

Objectif : Décrire les aspects socio-démographiques, cliniques et thérapeutiques des patients ayant subi une extraction des dents de sagesse mandibulaire.

Matériel et méthode : Nous avons mené une étude prospective descriptive au niveau du service de chirurgie du Centre Hospitalier Universitaire d'odontostomatologie de Bamako, au Mali, sur une période de trois mois. Tous les patients inclus dans l'étude avaient soit une ou plusieurs dents de sagesse mandibulaires enclavées ou incluses. N'était pas inclus dans l'étude tout patient présentant une dent de sagesse mandibulaire non incluse et non enclavée. Les données ont été collectées à partir des dossiers médicaux et analysées avec le logiciel SPSS version 18.0.

Résultats : Le sexe masculin était le plus représenté avec 57,7%, soit un sex-ratio de 1,3. La tranche d'âge 18-27 ans était la plus touchée (50%). L'âge moyen était de 40,5 ans avec des extrêmes allant de 18 à 63 ans. La douleur a été le principal motif de consultation dans 98,1% des cas. Les dents les plus touchées par l'inclusion étaient les troisièmes molaires inférieures gauche (59,6%) et droite

(40,4%). L'enclavement et l'inclusion dentaire étaient présents respectivement dans 90,4% et 9,6% des cas. Selon la position d'angulation de la dent atteinte, la version mésiale était la plus représentée avec (57,7%) des cas. L'extraction dentaire était simple dans 69,2% et chirurgicale dans 30,8%. Des complications tardives ont été observées dans 66,7% des cas.

Conclusion : Les cas de dents de sagesse mandibulaire enclavées ou incluses avec des complications, nécessitant une extraction sont assez courante au CHU-OS, avec la douleur comme principal motif de consultation. Leur prise en charge adéquate demande de la part du praticien la maîtrise des techniques opératoires en plus d'une étroite collaboration entre lui et les patients.

Mots clés : Dent de sagesse, enclavée, incluse, extraction, CHU-CNOS

Abstract

Objective: To describe the socio-demographic, clinical and therapeutic aspects of patients who underwent mandibular wisdom teeth extraction. Material and Method: We conducted a prospective

descriptive study in the Surgical Department of the University Hospital of Odontostomatology in Bamako, Mali, over a period of three months. All included patients had one or more mandibular wisdom teeth clinically and radiologically. Enclosed or included, the extraction indication of which shall be retained. Data were collected from the medical records and analyzed with the SPSS software version 18.0. Results: Male gender was the most represented with 57.7 %, with a sex ratio of 1.3. The age group 18-27 years old was the most affected (50%). The average age was 40.5 years old for extremes of 18 to 63 years old. Toothache was the main reason for consultation with 98.1% of the cases. The most affected teeth were the lower left third molar (59.6%) and right third molar (40.4%). The enclaved and included dental positions were present in 90.4% and 9.6%, respectively. Depending on the angulation of the affected tooth, the mesial version was the most represented with (57.7%) of the cases. Dental extraction was simple in 69.2%, and surgical in 30.8%. Late complications were observed in 66.7%. Conclusion: Cases of mandibular wisdom teeth enclosed or included with complications, requiring extraction are quite common in CHU-OS, with pain as the main reason for consultation. Their adequate management requires the practitioner's mastery of operating techniques in addition to close collaboration between him and the patients.

Keywords: Wisdom tooth, enclosed, included, extraction, U H C- N C O S.

Introduction

An included tooth is a tooth retained in the maxillary or mandibular arch, beyond their eruption date, surrounded by their peri-coronary sac and without communication with the oral cavity [1]. An enclosed tooth is a mature tooth retained in the maxilla beyond the normal date of eruption and whose peri-coronary sac is open in the oral cavity [2].

In Neolithic times, enclaved or included wisdom

teeth rarely posed a problem. The highly abrasive diet resulted in significant attrition of the teeth and thus a reduction in the circumference of the dental arches in the mesio-distal direction. Migration of the teeth in the mesial direction generally provided sufficient space for the eruption of the wisdom teeth [3].

The increase in the proportion of refined foods in the diet and the consequent reduction in masticatory solicitation resulted in a marked increase in the number of enclaved or included wisdom teeth [3].

Avulsion of the mandibular third molars is a preventive or therapeutic procedure frequently performed by dental surgeons, maxillofacial surgeons and oral surgeons [4]. The difficulty of this act varies depending on the level of impaction, angulation of the tooth relative to the body and the branch of the mandible.

The frequency of dental inclusions varies from 8.3 to 37.8% [5, 6] with a prevalence of 22% for the third mandibular molars and 18% of the third maxillary molars. Inclusions of third mandibular molars account for 82.5% of dental inclusions in China [6], 75.7% in India [7], and 74.2% in Mauritania [8]. In France, the frequency of inclusion, retention or isolation of the mandibular third molar of about 58.5% (n=1550) [9]. Orthopantomography makes it possible to objectify the position of the third mandibular molar and possibly to evaluate the operative difficulty.

The purpose of this work was to describe the socio-demographic, clinical, and therapeutic aspects of patients having undergone extraction of mandibular wisdom teeth enclosed or included in the University Hospital Center, National Center of Odontology and Stomatology in Bamako, Mali.

Methodology

Study Design

This prospective descriptive study was conducted in the Oral Surgery Department of the University

Hospital Center, National Center of Odontology and Stomatology in Bamako, Mali, over a period of three months from April to June 2014.

Data Collection

Included in the study was any patient presenting clinically and radiologically one or more mandibular wisdom teeth; enclaved or included, whose indication of extraction was retained. Patients who did not accept medico-surgical management were not included.

All patients benefited from a radiological assessment (orthopantomogram and retro-alveolar) and antibiotic therapy, anti-inflammatory non-steroidal, oral antiseptic in the form of mouthwash and analgesic. Our data were collected from medical records and a questionnaire collected information on socio-demographic characteristics (gender, age), oral hygiene habits and care.

Preoperative and postoperative pain was assessed by one-dimensional measures, such as the Simple Verbal Scale (EVS) and self-assessment of the patient. The treatment with analgesics was assessed according to WHO levels. To classify the wisdom teeth according to their angulation, we took as a reference the classification of Pell and Gregory (Table 1) [10].

Statistical Analysis

We analyzed the data using SPSS version 18 (IBM Corp., Armonk, NY, USA).

Ethical Aspects

Our research protocol was approved by ethical committee at the university Hospital of national center of Odontostomatology in Bamako, Mali. Informed consent was obtained from each participant prior to enrollment into our study.

Results

A total of 52 patients with one or more enclaved or included mandibular wisdom teeth were analyzed. Males represented 57.7%, versus 42.3% females sex, for a sex ratio of 1.36. The age group 18-27

years old was the most affected, with 50 %. The average age was 40.50 years old for extremes of 18 to 63 years old (Table 2).

Narrative result: Patients were seen in outpatient visits for dental algia in 98.1%. The most frequently affected teeth were tooth 38 in 59.6 % tooth 48 in 40.4%.

The isolated dental position was the most represented in 90.4% versus 9.6% in the included position. According to the angulation of the concerned tooth, the mesiale version was the most represented in 57.7 % (Table 2). The locoregional anesthesia of type was the most used in the form of troncular association of the lower alveolodental nerve, the lingual nerve and the oral nerve in 59.6 % (Table 2). The majority of patients benefited from the WHO class I analgesic in 94.2 % and class II in 5.7%. The plan of the section of the mucous membrane and the periosteum was realized in 30.7 %.

The plan of the osteotomy with a strawberry rolls and/or cracks under permanent irrigation, until a total release of the crown of the concerned tooth was realized in 30.7 %.

The division of the concerned tooth was practiced in 15.4% and according to the type of division of the concerned tooth, 13.4 % benefited from a coronary section, and 1.9 % from a radicular section.

Stitches were realized in 50 %. The dental extraction was simple in 69.2 %, and the surgical in 30.7%. Late complications were observed in 66.7 % (Table 3).

All our patients (100%) were seen again one week after the dental avulsion. (table 2).

Table 1: PELL and GREGORY classification

Position	Description
A	The third mandibular molar is for the same level or over the plan of occlusion.
B	Inclusive mandibular molar is below the plan of occlusion but over the cervical line of the second mandibular molar.
C	Inclusive mandibular molar is below the cervical line of the second mandibular molar.

Table 2 : Description of the patients by age group, tooth angulation and type of locoregional anesthesia

Variables	N	%
Age Group		
18 to 27 years old	26	50.0
28 to 37 years old	20	38.5
38 years old and above	6	11.5
Total	52	100
Angulation		
Vertical	5	9.6
Version mesial	30	57.7
Horizontal	17	32.7
Total	52	100
Anesthesia		
Truncal anesthesia	20	38.5
Truncal anesthesia and Bucco-lingual nerve block	31	59.6
Truncal anesthesia and buccal nerve block	1	1.9
Total	52	100

Table 3: Early and late complications after wisdom teeth removal in our cohort

Complications	Frequency	%	
early complications	Coronary fracture of the tooth	4	26.7
	bleeding	1	6.7
	Pain after extraction	3	20.0
	Trismus	1	6.7
Late Complications	Tumefaction	1	6.7
	Tumefaction + Trismus	2	13.3
	Pain after extraction+trismus	2	13.3
	Bleeding	1	6.7
Total	52	100.0	

Table 4: Weekly postoperative follow-up of our patients.

Follow up	Frequency	%
One week	52	100
Two weeks	28	53.8
Three weeks	5	9.6
Lost to view	18	34.6

Discussion

We found that 47 patients had enclosed teeth in 90.4 % (47/52), and 5 inclusive teeth in 9.6 % (5/52). Previous studies on dental panoramic radiographies reported inclusive, reserved or enclosed tooth in 15.1% (n=11,598) among which third mandibular molars represented 55.9% [11] and 73.3% (n=2,569) of enclosed teeth [12].

We found a male predominance with (57.7 %). This result corroborated 54.1 % [13] and 64.5% [12] of males. A female predominance with 58% was reported from a study [14]. Previous research that analyzed the difficulties of avulsion of the third mandibular molar included in Dakar, found equal's sex ratio is so much man as women in a sample of 62 patients [15]. This high frequency could give some explanation by the presence of the factor by girths him tendinous ptérygoïdien musculo conditioning the orientation of growth of the alveolar bone which would more be stressed at the patient's.

Our study was mainly constituted by young subjects (18 - 27 years old with a mean age of 40. 50 years old for extremes from 18 to 63 years old. Our result was similar to 71.05% in the age group 18-28 years old in Morocco [12], 45.21% in the age group 18 to 27 years old in Mali [13], 67, 30 % (n=110) in the age group 20 to 30 years old in Burkina Faso [16], 57% in the age group 15 to 25 years old in Senegal [15], 71 % in the age group 18 to 28 years old in Brazil [14]. This shall be explained by the fact that the physiological process of the radicular construction of these concerned teeth would be made in the age bracket from 18 to 25 years old, and consequently the probability of inclusion of the same concerned teeth would be situated then in the same age bracket.

In our sample, algia with (98.1 %), was the first motive for consultation, similar to 65.06% in Mali. [13] and 59.10 % in Burkina Faso [16].

The highest frequency of extraction concerned wisdom teeth enclosed in 90.4 %. This was higher

than 36, 4% of the enclosed wisdom teeth from a previous study in Mali [13]].

In our study, the most frequently concerned tooth was tooth 38 in 59.6 % of the cases, which is higher than 51.1 % notified in a previous study in Mali [13].

According to the angulation of the concerned tooth, the mesial version was the most represented in 57.7 %, followed by the horizontal angulation in 32.7 %. We notified no case of distal angulation in Senegal [15], horizontal angulation was found in 44 %, followed by the mesio-angular angulation (in 35 %) and vertical line (in 21 %). Mesio-angular angulation rate was higher in Morocco with 47 % [12], and in Mauritania 58 % [8].

A study (n=110) in Burkina Faso [16] reported 8.8 % of mesio-angular angulation, 4.4 % of horizontal angulation and 3.8 % of angulation vertical line.

Inclusive teeth and concerning the enclosed teeth found in 56.6 % of mesio-angular, angulation, 9.3 % of horizontal angulation and 13.2 % of vertical line angulation. However they found in their series 2.2 % of disto angular angulation.

This would give some explanation by the fact that the second and third molars migrate in vertical in contact with the distal face of the previous molar, what does that they make their eruption realizing everything the curve of Capdepon.

The loco-regional anesthesia was the most used in the form of troncular association of the lower alveolo-dental nerve, lingual nerve and the oral nerve in (59.6 %) of the Burkina Faso [16]. In their study, they realized local anesthetic in 62 cases (56.4%) and under general anesthesia in 48 cases (43.6 %).

The plan of the section of the mucous membrane and the periosteum was realized in (30.7 %).

The plan of the osteotomy with a strawberry rolls and/or cracks under permanent irrigation, until a total release of the crown of the concerned tooth was realized in 30.7 %.

The division of the concerned tooth was practiced in

15.4 % and according to the type of division of the concerned tooth, 13.4 % benefited from a coronary section, and 1.9% a radicular section. Stitches were realized in 50 %.

The dental extraction was simple in 69.2 %, and surgical in 30.7 %. In our study, complications were observed in 28.8 % of our patients, and in this prize, the complications comment operating represented 66.7%. Our results are different from 12.6 % in a study in France [17] and 32.20 % in a study in Mali [13].

The most common clinical symptom in these postoperative complications was posttreatment pain in 20%. This rate was lower than the results of the study conducted in Burkina Faso [16], in which infectious accidents (82.7%) and nerve injuries (55.5%) were the most frequently encountered. In France [18], authors reported alveolitis in 9.5%, trismus in 7.6%, the lower alveolar nerve damage in 3.4%, and lingual nerve in 2.7%.

Conclusion

Extractions of the inclusive or enclosed wisdom teeth and its complications were prevalent in Mali, by a qualified and experimented practitioner should guide the decision-making for the patients for a win-win collaboration.

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References

- [1] Haroun A. HAS recommendations on the avulsion of third molars. *Bull Un Nat Int Ortho Dento-Fac* 2008 ; 37 :22-37.
- [2] Korbendau JM, Korbendau X. The extraction of the wisdom tooth. Ed. *Quint Int*, Paris, 2001, p 48.
- [3] Jeannine Arrigoni et J. Thomas Lambrecht. Complications during and after surgical avulsion of wisdom teeth. *Rev Mens Suisse Odontostomatol*, Vol 114 : 12/2004.
- [4] Mathieu Gunepin, Florence Derache, Benoît Bedrune. *Focus oral medicine oral surgery* 2008,14, 4 ; 193-203.
- [5] Dachi SF, Howell FV. A survey of 3,874 routine full-mouth radiographs. I. A study of retained roots and teeth. *Oral Surg Oral Med Oral Pathol*. 1961 ; 14 :916-24.
- [6] Chu FC, LI TK, Lui VK, Newsome PR, Chow RL, Cheung LK. Prevalence of impacted teeth and associated pathologies a radiographic study of the Hong Kong Chinese population. *Hong Kong Med J*. 2003; 9(3) :158-63.
- [7] Sandhu SS, Kapila BK. Incidence of impacted third molars. *J Indian Dent Assoc* 1982 ; 54 :441-444.
- [8] Ould Mohameden A. Study of the inclusions and enclaves of the third molars in a Mauritanian population. *Thèse Chir Dent Dakar* : 2008, n° 6.
- [9] Buisson G. Treatment of included teeth (other than wisdom teeth and upper canines). *Encycl. Méd. Chir - Chirurgie bucco-dentaire* 22096; F10, 1968.
- [10] Pell GJ and Gregory GT. Impacted third mandibular molars: Classification and Modified techniques for removal. *The dental digest* 1933;39(9):330-338. of PELL and GREGORY
- [11] Stanley HR, Alattar M, Collett WK, Stringfellow HR. Pathological sequelae of "neglected" impacted third molars. *J Oral Pathol* 1988 ; 17 : 113-117.

[12] Raslan F. Surgical Techniques for removal of included or enclaved mandibular wisdom. Thèse Chir Dent. Dakar : 1998, n° 10

[13] Drissa M. D. Removal of 123 included or enclaved wisdom teeth at the department of stomatology and maxillo-facial surgery in the University Hospital of the national center of odontostomatology in Bamako, Mali. Thèse Chir Dent. Bamako : 2013

[14] Marzola C, Comparin E, Toledo FJL. Third molars classifications prevalence in the cities of Cunha Pora, Maravilha and Palmitos in the Northwest of Santa Catarina state In Brazil. *Revista Odontol Crecia* 2006 ; 21(51):55-66.

[15] Tamba B, Soukeye Dia Tine, Abdou Ba et AL. Difficulties of impacted lower third molar extraction: the role of the orthopantomogram *Med Buccale Chir Buccale* 2015 ; 21 :127-135.

[16] Guiguimde W. P. L., M. Millogo, Tarcissus K., Ouedraogo D. Accidents due to the development of the bottom wisdom tooth in the odonto-stomatology and maxillofacial surgery department at the teaching hospital Yalgado Ouedraogo. *Med Buccale Chir Buccale* 2015 ; 21 :5-9.

[17] Christiaens I, Reychler H. Christiaens et al. Complications after third molar extractions: retrospective analysis of 1213 teeth. *Rev. Stomatol. Chir. Maxillo-facial.* 2002; 103(5), 5, :269-274. ; Masson, Paris, 2002.

[18] Guillaume L., Christophe P., Erwan H., Ludovic Benichou Suer Bt, Kocyigit Id, Iatrogenic displacement of impacted mandibular third molar into the pterygomandibular space: a case report. *Oral Health Dent Manag* 2014; 13(2):179-182.

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