



ORIGINAL ARTICLE

Complications of Third Molar Eruption in the Emergency Dental Clinic of Quivicán Municipality

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ABSTRACT

Introduction: the eruption of third molars has been the subject of multiple studies and has been considered a controversial topic. Complications that occur during this process cause discomfort and pain.

Objective: to describe the complications of third molar eruption in young people aged 18 to 25 years who attended an emergency department in the municipality of Quivicán.

Methodology: a descriptive, cross-sectional study was conducted from October 2020 to March 2022. The study population consisted of 217 young people, who underwent clinical and radiographic examinations. Both demographic and clinical variables were evaluated, including age group, sex, location of the third molar, and anatomical position according to the Winter Classification.

Results: 24,42 % of young people presented complications related to third molar eruption. A total of 673 third molars were evaluated, of which 26,89 % were upper and 73,11 % were lower. Complications occurred in 19,17 % of the molars, with the latter being more common in lower molars. The most common type of molar was the upright position, at 55,81 %.

Conclusions: it is evident that complications associated with third molar eruption in the municipality of Quivicán are predominant in the 18-19 age group and in females. These findings highlight the importance of early clinical and radiographic surveillance to prevent and promptly manage complications that can negatively impact patients' oral health and quality of life.

Keywords: Anatomy; Tooth Eruption; Oral Medicine; Molar, Third; Complications.

INTRODUCTION

The third molar tends to erupt relatively late and slowly, often presenting various alterations in its eruption and position. International data indicate that 25 % of the population lacks at least one third molar and that 10 % never develop wisdom teeth.⁽¹⁾ Studies conducted in Venezuela and Ecuador have reported a high prevalence of third molar impaction—17,5 % and 33 %, respectively.^(2,3)

Several investigations have identified numerous complications associated with third molars, such as pain, dental caries, moderate to high surgical difficulty, tooth impaction, and infectious processes such as pericoronitis, among others.^(4,5)

It has been reported that 60,8 % of third molars are extracted due to limited eruption space or barriers along their eruption pathway, which displace the tooth from its physiological trajectory. Extraction is one of the most frequent procedures, often performed due to the need to create space for proper dental alignment.⁽⁶⁾

In the municipality of Quivicán, the increased occurrence of complications during third molar eruption has become a matter of concern for dental professionals, due to both its frequency and the recurrent need for antimicrobial therapy and preventive extraction of third molars among young patients presenting at emergency dental services. The lack of local data motivated this study, aiming to define the magnitude of the problem.

Objective to describe the complications of third molar eruption in young adults aged 18–25 years attending emergency dental clinics in Quivicán municipality.

METHODS

A descriptive, cross-sectional study was conducted at the Quivicán Dental Clinic “Centenario Protesta de Baraguá” from October 2020 to March 2022.

The study population consisted of 217 young adults who attended the emergency dental services in Quivicán.

Inclusion Criteria

- Young adults aged 18–25 years who provided informed consent to participate.
- Attendance at the Quivicán emergency dental service during the study period.

Exclusion Criteria

- Individuals not meeting at least one inclusion criterion.

Data Collection, participants were interviewed and clinically examined upon arrival at the emergency clinic. The presence of complications related to third molar eruption was determined, and those affected were scheduled for follow-up at the outpatient clinic, where an individual dental record and radiographic study of third molars were completed.

Variables Studied:

- Age group: 18–19, 20–21, 22–23, 24–25 years.
- Sex: Female or Male.
- Presence of complications: Yes/No.
- Molar location: Maxillary (teeth 18, 28) and Mandibular (teeth 38, 48).
- Winter's Classification: Distoangular, Mesioangular, Vertical, or Horizontal.

Data were recorded using a structured collection form and subsequently entered into an Excel 2016 database. Statistical analysis was performed using percentage distributions as summary measures. The most relevant results were presented in tables.

Ethical Considerations

This research strictly adhered to the bioethical principles governing scientific research and the Declaration of Helsinki. Appropriate institutional authorizations were obtained, and all participants were informed about the study's nature and objectives. The study was approved by the Institutional Ethics Committee (Approval No. 2341).

RESULTS

Among all participants attending the emergency dental service, 24,42 % presented complications related to third molar eruption. The 18–19 age group showed the highest prevalence (9,68 % of the total sample) (Table 1).

Table 1. Distribution of participants by age and presence of third molar eruption complications.

Age group	Complications Present		No Complications		Total	
	No.	%	No.	%	No.	%
18–19 years	21	9,68	55	25,34	76	35,02
20–21 years	15	6,91	38	17,51	53	24,42
22–23 years	11	5,07	30	13,82	41	18,89
24–25 years	6	2,80	41	18,89	47	21,66
Total	53	24,42	164	75,58	217	100

Among females, 16,10 % experienced complications, showing a predominance of the female sex (61,70 %) (Table 2).

Table 2. Distribution by sex and presence of third molar eruption complications.

Sex	Complications				Total	
	Present		No Complications			
	No.	%	No.	%	No.	%
Female	35	16,10	99	45,60	134	61,70
Male	18	8,30	65	30,00	83	38,20
Total	53	24,40	164	75,60	217	100

Out of 673 third molars examined, 26,89 % were maxillary and 73,11 % mandibular. Complications were observed in 19,17 %, with a predominance in mandibular molars (13,52 %) (Table 3).

Table 3. Distribution of examined third molars and presence of complications.

Molar Location		Complications				Total	
		Present		No Complications			
		No.	%	No.	%	No.	%
Superiors	18	17	2,53	71	10,55	88	13,07
	28	21	3,12	72	10,70	93	13,82
	Total	38	5,65	143	21,25	181	26,89
Inferiors	38	47	6,98	196	29,12	243	36,11
	48	44	6,54	205	30,46	249	37,00
	Total	91	13,52	401	59,58	492	73,11

According to Winter's Classification, 70,54 % of the 129 molars with complications were mandibular. The vertical position was the most frequent (55,81 %), followed by disto- or mesioangular positions (28,68 %) (Table 4).

Table 4. Distribution of third molars with complications according to Winter's Classification.

Third molars examined		Winter's Classification						Total	
		Disto- / Mesioangular		Vertical		Horizontal			
		No.	%	No.	%	No.	%	No.	%
Superiors	18	5	3,87	11	8,53	1	0,77	17	13,18
	28	6	4,65	15	11,63	0	0	21	16,28
	Total	11	8,52	26	20,16	1	0,77	38	29,46
Inferiors	38	7	5,43	29	22,48	11	8,53	47	36,43
	48	19	14,73	17	13,18	8	6,20	44	34,11
	Total	26	20,16	46	35,66	19	14,73	91	70,54
Total molars		37	28,68	72	55,81	20	15,50	129	100

DISCUSSION

Both international and national studies consistently report that complications associated with third molar eruption are more frequent among young adults aged 18–25 years, as demonstrated in research from Peru, Santiago de Cuba, and Mexico^(7,8,9,10) This trend may be attributed to delayed eruption and the progressive reduction of space in the dental arches, which favor complications in this age group.

Regarding sex distribution, studies conducted in Chile's Hospital Urbano Base de Valdivia⁽¹¹⁾ report a predominance among women (62,6 %); whereas research in Ecuador⁽¹²⁾ found no significant differences. In this study, conducted in Mayabeque Province, the higher female prevalence may relate to both delayed third molar development in women and greater health awareness leading to earlier professional consultation.

Consistent with regional and international findings, the current study in Quivicán revealed a greater frequency of complications in mandibular third molars compared to maxillary ones. Studies from Nicaragua,⁽¹³⁾ Colombia,⁽¹⁴⁾ and Cuban provinces such as Ciego de Ávila⁽¹⁵⁾ and Pinar del Río⁽¹⁶⁾ report similar results, with prevalence ranging between 16 % and 63 %.

Regarding anatomical position, both this study and others conducted in Ecuador,^(17,18) Argentina,⁽¹⁹⁾ and Camagüey, Cuba,⁽²⁰⁾ found that the vertical position was the most frequent, followed by mesioangular, with reported ranges between 26 % and 69 %. These findings reinforce the regional trend of vertical positioning being the most common presentation among complicated third molars.

Researchers also highlight the high cost of surgical extraction and the associated inconveniences, including the use of antimicrobials, which may discourage patients from seeking specialized care despite experiencing pain or swelling.

The increased frequency of mesioangular positions may be related to bone-tooth alignment changes resulting from decreased mandibular angles. Dietary evolution—less fibrous and more processed foods—has reduced masticatory muscle activity, influencing bone development.⁽²⁰⁾

A key contribution of this research is its updated and context-specific characterization of third molar eruption complications in a population where epidemiological data were previously scarce. The study provides valuable evidence for clinical decision-making in dentistry, emphasizing early detection and management of complications to improve patient quality of life and optimize resource use in emergency dental care.

Limitations

The study was limited to patients who attended the emergency dental service in Quivicán, which may reduce the generalizability of the findings. Additionally, the cross-sectional design precludes causal inferences. Future studies should further characterize the clinical types of complications and explore individual risk factors influencing their occurrence.

CONCLUSIONS

Complications associated with third molar eruption in young adults aged 18–25 years in Quivicán municipality were most prevalent among females and in the 18–19 age group. These findings underscore the need for early clinical and radiographic monitoring, especially in young women and mandibular third molars, to enable timely prevention and management of complications that can adversely affect oral health and quality of life.

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