

DOI: 10.26693/jmbs07.02.007

UDC 616.314.5-085=111

Jelle Stans

THE OCCURRENCE OF FIFTH AND ADDITIONAL MOLARS

Institute for Globally Distributed Open Research and Education, Beringen, Belgium

The purpose of the study was to summarize the current knowledge available of fifth and additional molars, including their epidemiology, demographics of subjects and management strategies. Additionally, directions for further research are formulated.

Materials and methods. The Medline database (through PubMed) and Web of Science Core Collection were searched using the following keywords: "Supernumerary molar*", "Additional molar*", "Fifth molar", "Five molar*", "Sixth molar*", "Six molar*", "Seventh molar" and "Seven molar*". Additionally, the search engine Google was used using the same keywords. Moreover, the references of the literature identified using the previous methods were searched for other eligible publications. Publications were included if they described at least one fifth or additional molar in a human subject; reported on anatomical, epidemiological, demographic or clinical aspects or the full text could be sourced.

Results and discussion. Fifth and additional molars have been sporadically described in literature, which is summarized in the current review. The age at detection of supernumerary molars ranged from 12 to 33 years (average: 21.8 years). When molars are present beyond a fourth, it usually only concerns fifth molars. Only one case of sixth and seventh molars was identified. Like fourth molars, they occur usually in the maxilla and unilaterally. Most of the reports did not mention any specific symptoms regarding these supernumerary molars. They were usually managed by removal or not at all.

Six case reports reporting on fifth and additional supernumerary molars were included. An additional case series was identified that included three cases of a patient with fifth molars. Only two of the identified publications were published after 2010, while two were published before 1980. No prospective studies studying the entities were identified. It is clear that the body of evidence about supernumerary molars beyond a fourth is very limited in size. Additionally, the available literature is lacking both in internal and external validity.

Conclusion. The body of evidence about fifth and additional molars is very sparse, with only a few case reports having been published. It is however clear that these entities are very rare and share several characteristics with fourth molars. Importantly, it seems that they are often asymptomatic and do not always require dedicated treatment. Further research is needed to better understand the epidemiology of these entities.

Keywords: distomolars, supernumerary molars, fifth molar, sixth molar.

Introduction. Supernumerary teeth can occur in all regions of the dental arches due to an abnormal odontogenesis [1]. These teeth can be part of both deciduous or permanent dentition and can be present in both jaws and unilaterally or bilaterally [2]. Their prevalence has been described as 0.1% - 3.8% in permanent dentition [3]. Complications that are associated with supernumerary teeth include impaction and overcrowding [4]. They can however also be asymptomatic and therefore be identified only by routine radiography [4].

One example of supernumerary teeth are supernumerary molars. These teeth can be subdivided into paramolars and distomolars based on their location. Paramolars are usually found in between the second and third maxillary molars, while distomolars are located distal to the third molar of either jaw bone [2]. The epidemiology and other characteristics of fourth molars, which are usually distomolars, have been investigated in a small number of studies [5-6]. The prevalence of fourth molars was observed to be 0.32% - 2.2% [5-6]. In both studies, they occurred most often in the maxilla and about as often in males and females.

Fifth and additional molars have been sporadically described in literature. However, little is known about their epidemiology, specific complications, management and other aspects. A better understanding of these different aspects could allow for better management when they are identified and could

allow the identification of potential directions for further research.

The purpose of the study was to summarize the current knowledge available of fifth and additional molars, including their epidemiology, demographics of subjects and management strategies. Additionally, directions for further research are formulated.

Search strategy and inclusion. The Medline database (through PubMed) and Web of Science Core Collection were searched using the following keywords: “Supernumerary molar*”, “Additional molar*”, “Fifth molar”, “Five molar*”, “Sixth molar*”, “Six molar*”, “Seventh molar” and “Seven molar*”. Additionally, the search engine Google was used using the same keywords. Moreover, the references of the literature identified using the previous methods were searched for other eligible publications. Publications were included if they (1) described at least one fifth or

additional molar in a human subject and (2) reported on anatomical, epidemiological, demographic or clinical aspects and (3) the full text could be sourced.

Identified literature. Six case reports reporting on fifth and additional supernumerary molars were included [7-12]. An additional case series was identified that included three cases of a patient with fifth molars [13]. Only two of the identified publications were published after 2010 while two were published before 1980. No prospective studies studying the entities were identified. It is clear that the body of evidence about supernumerary molars beyond the fourth is very limited in size. Additionally, the available literature is lacking both in internal and external validity.

Epidemiology and anatomical characteristics. Data regarding the demography of the subjects and anatomical characteristics of the molars was extracted from the case reports and shown in **table 1**.

Table 1: Data extracted from included publications

Reference	Age	Sex	Jaw	Molar #	Laterality	Symptoms / Co-existing problems	Management
Eller & Stein, 1978	19	Male	Mandible	Fifth	Unilateral	None	Not known
Wood, 1978-79	26	Male	Maxilla	Fifth	Unilateral	Acute pericoronal infection	Removal
Menardía-Pejuan et al., 2000	Not known	Not known	Maxilla	Fifth (3 cases)	Unilateral (all 3 cases)	Not known	Not known
Kokten et al., 2003	20	Female	Maxilla	Fifth	Unilateral	Temporomandibular joint disease	Removal
Gündüz, 2006	21	Female	Maxilla	Fifth	Bilateral	None	Not known
Asrani et al., 2016	33	Female	Maxilla	Fifth	Bilateral	Bleeding gums	None
Singhal et al., 2017	12	Female	Mandible	Fifth Sixth Seventh	Unilateral	Swelling	Removal

The age at detection of the supernumerary molars ranged from 12 to 33 years (average: 21.8 years). This suggests that these entities are discovered relatively early in life. This is supported by the observation that they are often identified during routine radiographic examination. In these case reports, two patients were male and four were female. The number of reports is however too small to make any conclusions about the prevalence of fifth and additional molars between sexes.

In eight of the included cases only fifth molars were present, while one additional case report described a fifth, sixth and seventh molar in one subject. This suggests that supernumerary molars beyond fourth molar are very rare. Despite the small number of cases identified, it seems that if molars beyond a fourth are present, usually only a fifth one develops. These case reports do not allow for an estimation of a prevalence for fifth molars. However, based on the very limited number of cases, it is clear that this prevalence is lower than that for fourth molars, which has been estimated at 0.32% [6]. Only one case report was included regarding sixth and seventh molars [12]. Their occurrence seems to be extremely rare.

In seven of the nine subjects, the supernumerary molars were present in the maxilla. This has been described previously within the scope of fourth molars [6]. In the majority of the subjects, the supernumerary

molars occurred unilaterally. This has also been described before for fourth molars [5].

Symptoms and management. In most of the case reports, there was no mentioning of any symptoms specifically caused by the presence of supernumerary molars. This is in line with other literature that states that supernumerary molars are often asymptomatic and discovered during routine radiography [2]. They may, however, eventually lead to other complications [2, 5]. It was, however, clear that the subjects often presented with other problems such as acute peri coronal infection [8] or bleeding gums [11]. These other conditions can require diagnostics that eventually lead to discovery of supernumerary molars. Based on the current information, a potential causative link between these supernumerary molars and these conditions needs to be investigated further.

Management of the supernumerary molars often consisted of removal. In several cases, however, no specific actions were taken.

Conclusion. The body of evidence about fifth and additional molars is very sparse, with only a few case reports having been published. It is, however, clear that these entities are very rare and share several characteristics with fourth molars. Importantly, it seems that they are often asymptomatic and do not always require dedicated treatment.

Prospects for further research. Further research is needed to get further insights into several aspects of fifth and additional molars. A first step could be to stimulate the publication of case reports when these entities are discovered. This will allow

the body of evidence to grow and a better description of various aspects to be established. Furthermore, a multi-centric, retrospective study of patient records could yield better estimates on the prevalence and other epidemiologic characteristics of these entities.

References

1. Vazquez Mosqueyra VM, Espinosa Melendez MT, Hernandez Flores F. Presencia del cuarto molar. Revisión de la literatura. *Rev Odont Mex*. 2018;22(2):104-118.
2. Syriac G, Joseph E, Rupesh S, Philip J, Cherian SA, Mathew J. Prevalence, Characteristics, and Complications of Supernumerary Teeth in Nonsyndromic Pediatric Population of South India: A Clinical and Radiographic Study. *J Pharm Bioallied Sci*. 2017;9(Suppl 1):S231-S236. PMID: 29284970. PMCID: PMC5731020. doi: 10.4103/jpbs.JPBS_154_17
3. Ata-Ali F, Ata-Ali J, Peñarrocha-Oltra D, Peñarrocha-Diago M. Prevalence, etiology, diagnosis, treatment and complications of supernumerary teeth. *J Clin Exp Dent*. 2014;6(4):e414-e418. PMID: 25593666. PMCID: PMC4282911. doi: 10.4317/jced.51499
4. Shahzad KM, Roth LE. Prevalence and management of fourth molars: a retrospective study and literature review. *J Oral Maxillofac Surg*. 2012 Feb;70(2):272-5. PMID: 21802814. doi: 10.1016/j.joms.2011.03.063
5. Bamgbose BO, Okada S, Hisatomi M, Yanagi Y, Takeshita Y, Abdu ZS, et al. Fourth molar: A retrospective study and literature review of a rare clinical entity. *Imaging Sci Dent*. 2019 Mar;49(1):27-34. PMID: 30941285. PMCID: PMC6444009. doi: 10.5624/isd.2019.49.1.27
6. Eller DJ, Stein M. Five molars in a mandibular quadrant. *Oral Surg Oral Med Oral Pathol*. 1978 Mar;45(3):488. PMID: 273197. doi: 10.1016/0030-4220(78)90537-6
7. Wood GD. Maxillary fourth and fifth molars: an unusual radiological finding. *Br J Oral Surg*. 1979 Mar;16(3):275-6. PMID: 285731. doi: 10.1016/0007-117x(79)90036-2
8. Kokten G, Balcioglu H, Buyukertan M. Supernumerary fourth and fifth molars: a report of two cases. *J Contemp Dent Pract*. 2003 Nov 15;4(4):67-76. PMID: 14625596. doi: 10.5005/jcdp-4-4-67
9. Gündüz K. Supernumerary molars. *Br Dent J*. 2006 Dec 9;201(11):688. PMID: 17159933. doi: 10.1038/sj.bdj.4814316
10. Asrani MK, Tarsariya VM, Pathan JM. Bilateral maxillary fourth and fifth molars: An unusual radiographic appearance. *Indian J Dent Res*. 2016 Jan-Feb;27(1):103-5. PMID: 27054870. doi: 10.4103/0970-9290.179840
11. Singhal P, Sah VK, Kumar A, Garg A. Unilateral fourth, fifth, sixth, and seventh molar in a nonsyndromic patient: A rare and unusual case report. *J Indian Soc Pedod Prev Dent*. 2017 Oct-Dec;35(4):374-377. PMID: 28914252. doi: 10.4103/JISPPD.JISPPD_186_16
12. Menardía-Pejuan V, Berini-Aytés L, Gay-Escoda C. Supernumerary molars. A review of 53 cases. *Bull Group Int Rech Sci Stomatol Odontol*. 2000 May-Dec;42(2-3):101-5. PMID: 11799727

УДК 616.314.5-085=111

П'ЯТІ ТА ДОДАТКОВІ МОЛЯРИ У ЛЮДИНИ

Джелле Станс

Резюме. Метою дослідження було узагальнити наявні поточні знання про п'яті та додаткові моляри, включаючи їх епідеміологію, демографію суб'єктів та стратегії управління. Додатково сформульовано напрямки подальших досліджень.

Матеріали та методи. Пошук у базі даних Medline (через PubMed) і Web of Science Core Collection проводився за такими ключовими словами: «Supernumerary molar*», «Additional molar *», «Fifth molar», «Five molar*», «Sixth molar*», «Six molar*», «Seventh molar» і «Seven molar*». Крім того, за тими ж ключовими словами відбувався пошук у системі Google. Також за посиланнями на літературу, визначену за допомогою попередніх методів, було здійснено пошук інших прийнятних публікацій. Публікації включалися, якщо вони описували принаймні один п'ятий або додатковий мольяр у людини; мали інформацію про анатомічні, епідеміологічні, демографічні чи клінічні аспекти або якщо можна було отримати повний текст публікації.

Результати і обговорення. П'яті та додаткові моляри спорадично описані в літературі, що було узагальнено в поточному огляді. Вік на момент виявлення додаткових молярів коливався від 12 до 33 років (середній: 21,8 року). Якщо йдеться про те, що присутній більше ніж четвертий мольяр, це зазвичай стосується лише п'ятих молярів. Було виявлено лише один випадок шостого та сьомого молярів. Як і четверті моляри, вони зустрічаються, як правило, у верхньощелепній кістці та з одного боку. У більшості

джерел не згадують жодних конкретних симптомів щодо цих зайвих молярів. Зазвичай з ними вправлялися шляхом видалення або їх взагалі не чіпали.

Було включено шість повідомлень про випадки з п'ятим та додатковими молярами. Виявлено додаткову серію випадків, яка включала три випадки, коли у пацієнта був п'ятий моляр. Лише дві з зазначених публікацій були опубліковані після 2010 року, а дві були опубліковані до 1980 року. Перспективних досліджень, які б вивчали ці суб'єкти, виявлено не було. Зрозуміло, що сукупність доказів про зайві моляри більше ніж четвертий дуже обмежена за розміром. Крім того, наявній літературі бракує як внутрішньої, так і зовнішньої обґрунтованості.

Висновок. Доказів щодо п'ятого та додаткових молярів дуже мало, і було опубліковано лише кілька повідомлень про випадки такого захворювання. Однак зрозуміло, що ці утворення є дуже рідкісними і мають ряд характеристик, схожих з четвертими молярами. Важливо, що вони часто протікають безсимптомно і не завжди вимагають спеціального лікування. Щоб краще зрозуміти епідеміологію цих утворень, необхідні подальші дослідження.

Ключові слова: дистомоляри, додаткові моляри, п'ятий моляр, шостий моляр.

ORCID and contributionship:

Jelle Stans : 0000-0002-4804-9466 ^{A-F}

A – Work concept and design, B – Data collection and analysis,
C – Responsibility for statistical analysis, D – Writing the article,
E – Critical review, F – Final approval of the article

CORRESPONDING AUTHOR

Jelle Stans

Institute for Globally Distributed Open Research and Education,
Beringen 3583, Belgium
e-mail: jelle.stans@hotmail.be

The authors of this study confirm that the research and publication of the results were not associated with any conflicts regarding commercial or financial relations, relations with organizations and/or individuals who may have been related to the study, and interrelations of coauthors of the article.

Стаття надійшла 12.02.2022 р.

Рекомендована до друку на засіданні редакційної колегії після рецензування