

Agenesis of the Wisdom Tooth -A Short Review

J.Rubika

*Saveetha Dental College and Hospital, No.162, Poonamalle High road, Chennai-600077,
Tamilnadu, India.*

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ABSTRACT

Agenesis of teeth in a patient who also presents with a supernumerary tooth is one of the rare numerical anomalies in human dentition. Agenesis of third molars was found to be related with other missing permanent teeth. A major decision of evolution is that the human jaw has shrunk from its much larger ape size to the smaller modern human size as humans evolved. Wisdom tooth agenesis is connected to the evolution and growth of the human jaw, since it is the last tooth to develop in the human dentition. Alterations in the size, morphology and number of teeth are among the many inherited disorders that have been reported in individuals with Down syndrome.

Key Words: Agenesis, wisdom tooth, impaction, down syndrome, human evolution.

INTRODUCTION

Dental agenesis can be referred to as that one or more teeth are missing as they would have never formed. This is also known as oligodontia, dental aplasia, and congenital absence of teeth or hypodontia. There are two types of agenesis. One is oligodontia and another one is anodontia. The term "OLIGODONTIA" is actually defined as that in some cases in which three or more teeth are missing; But the term "ANODONTIA" is defined as that all the teeth are missing¹. Hypodontia was more prevalent and severe in females. For the past 5000 years in Japan, clinicians, especially orthodontists, they believe that an increase in agenesis of permanent teeth is related to degeneration of dentofacial development⁷.

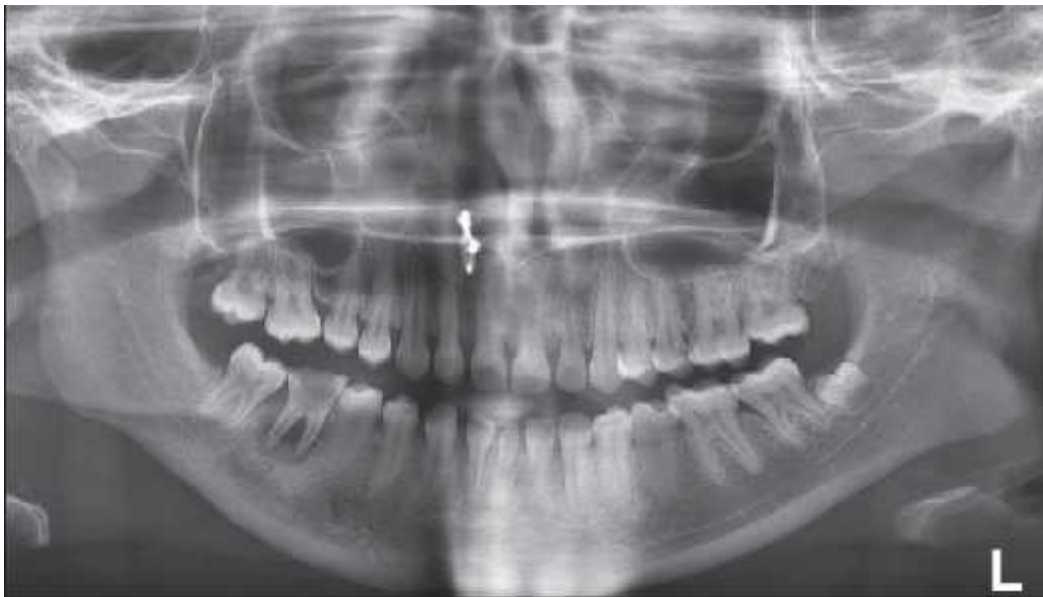
Third Molar: The third molar is otherwise known as wisdom tooth. This wisdom tooth generally appear between the ages of 17 and 25². This tooth is characterized by

- *The variations in the time of its formation,
- * The crown and root morphology is varying,
- *The variations in the presence or absence in the oral cavity³.

Agensis of the third molar tooth is frequent. Agensis of this tooth is associated with dental numeric and structured variations.

Causes For Agensis: There are several causes for congenital absence of teeth. They are

- * Physical obstruction or disruption of the dental lamina,
- *Space limitation,
- *Functional abnormalities of the dental epithelium or failure of initiation of the underlying mesenchyme⁴. And also congenital absence of teeth may be due to genetic factors⁵.



This picture shows agensis of 18, 28, 31, 41, and 48 with mandibular midline supernumerary tooth.

Impacted Third Molar: Once our ancestors had larger jaws, due to this reason there was a space in the human mouth for 32 permanent teeth, including third molars. But nowadays our jaws are smaller. So, there is no space in most of our mouths for 32 teeth. The third molars are the last teeth to erupt and they know what is going to happen to late comers. At first they disturb everybody and then becoming a focus of attention. At this time, they may not find enough space and at last late comers are several times driven out or not allowed to enter. So our third

molar often become impacted, or blocked from erupting. In dental terminology, an "impacted" tooth is defined as a tooth that is failed to fully emerge into the expected position⁶.

Agenesis Of Third Molar: Oligodontia may occur as an isolated nonsyndrome condition or as a syndrome like Down syndrome, Ectodermal dysplasia and Rieger syndrome.¹⁷ For the past few years, several dental anomalies generally seen in patients with Down syndrome has been reported in the literature. Among the normal individuals, these same anomalies have been linked with

a) congenital absence of third molars⁸⁻¹⁰

b) palatal displacement of maxillary canines¹¹⁻¹⁵

c) tooth transposition (ie, a severe disturbance of tooth order and position of eruption) which will occur at any of several specific sites in the mouth.¹⁶

The relation between third molar agensis and reduction in the number of remaining teeth fits the hypothesis of a field of variable intensity, which, in its greatest degree of expression removes the four third molar teeth and a maximum number of remaining teeth.

If a wisdom tooth is absent, the formation and eruption of molars and premolars of the same quadrant are delayed. This one is specially true for the most of the distal tooth. Agensis of the mandibular third molar is related with delayed calcification of the posterior teeth. This agensis is related with crown-size reduction, particularly crown size reduction of the lateral incisors, the second premolars, and 'peg-shaped' lateral incisors. This is more true in the female than the male.

CONCLUSION

The third molars agensis, belong to the essential characteristics of the dentition's status of the given population. Dental developmental anomalies can indicate the degree of genetic load of individuals and relatives. Third molar tooth agensis was most commonly observed in maxilla and less commonly in mandible. The prevalence of patients with one wisdom tooth agensis was the most commonly found type. This review article is an overview of the "Agenesis of the wisdom tooth".

REFERENCES

1. Salinas CF. Gene´ tica craneofacial. Washington, DC: Organizacio´ n Panamericana de la Salud; 1979:256.
2. "Wisdom teeth". American Association of Oral and Mailofacial Surgeons. Retrived 2010-09-28.

3. Gravely JF. A radiographic survey of third molar development. *Br Dent J.* 1965; 119:397–401.
4. Stewart RE, Barber TK, Troutman KC, Wei SH. St. Louis: C.V. Mosby Co; 1982. *Pediatric Dentistry, scientific foundations and clinical practice*; pp. 87–109.
5. Cobourne MT. Familial human hypodontia - is it all in the genes? *Br Dent J.* 2007; 203:203–8. [PubMed]
6. Study of A Relationship Between Agensis & Impacted Third Molar (Wisdom) Teeth. *Int J Res Med.* 2013; 2(1); 38-41 e ISSN: 2320-2742.
7. Asakura M. Relationship of size and form of the remaining teeth to third molar agensis [in Japanese with English abstract]. *Aichi- Gakuin J Dent Sci.* 1975; 13:270–302.
8. Garn SM, Lewis AB. The relationship between third molar agensis and reduction in tooth number. *Angle Orthod.* 1962; 32:14–18.
9. Garn SM, Lewis AB, Vicinus JH. Third molar agensis and reduction in the number of other teeth. *J Dent Res.* 1962; 41:717.
10. Garn SM, Lewis AB, Vicinus JH. Third molar polymorphism and its significance to dental genetics. *J Dent Res.* 1963; 42:1344–1363.
11. Newcomb MR. Recognition and interception of aberrant canine eruption. *Angle Orthod.* 1959; 29:161–168.
12. Becker A. Etiology of maxillary canine impaction. *Am J Orthod.* 1984; 86:437–438.
13. Baccetti T. A controlled study of associated dental anomalies. *Angle Orthod.* 1998; 68:267–274.
14. Peck S, Peck L, Kataja M. Prevalence of tooth agensis and pegshaped maxillary lateral incisor associated with palatally displaced canine (PDC) anomaly. *Am J Orthod Dentofacial Orthop.* 1996; 110:441–443.
15. Pirinen S, Arte S, Apajalahti S. Palatal displacement of canine is genetic and related to congenital absence of teeth. *J Dent Res.* 1996; 75:1742–1746.
16. Peck S, Peck L. Classification of maxillary tooth transpositions. *Am J Orthod Dentofacial Orthop.* 1995; 107:505–517.
17. Kurol J, Thilander B. Infraocclusion of primary molars and the effect on occlusal development, a longitudinal study. *Eur J Orthod.* 1984; 6:277–293.