



PREVALENCE AND DISTRIBUTION OF SELECTED DEVELOPMENTAL DENTAL ANOMALIES IN AN JAMMU AND KASHMIR POPULATION

Nidhi Khajuria and Rubeena Anjum

Department of Oral Pathology, IGGDC, jammu

ARTICLE INFO

Article History:

Received 15th November, 2018

Received in revised form 7th

December, 2018

Accepted 13th January, 2018

Published online 28th February, 2019

Key words:

Dental anomaly, prevalence, panoramic radiography.

ABSTRACT

Objectives- The aim of the present study was to determine the prevalence of dental anomalies in the jammu & kashmir population.

Method: A retrospective study of 3000 patients and students, who attended the Department of oral pathology, Indira Gandhi Dental College & hospital between april 2017 to january 2019 was done. The ages of the patients ranged from 13 to 38 years with a mean age of 21.8 years. The orthopanto-mographs (OPGs) and dental records were examined for any unusual finding such as congenitally missing teeth, impactions, ectopic eruption, supernumerary teeth, odontoma, dilacerations, taurodontism, dens in dente, germination and fusion, among others.

Results: 900 (33.3%) patients had at least one dental anomaly. The congenitally missing teeth 366 (40.6%) had the highest prevalence, followed by impacted teeth 480 (53.3%), supernumerary teeth 24 (0.26%) and microdontia 15 (0.01%). Other anomalies were found at lower prevalence ranging from transposition 7 (0.007%) to ectopic eruption 8 (0.008%).

Conclusion: The most prevalent anomaly in the jammu & kashmir population was impacted teeth (53.3%), and the second frequent anomaly was congenitally missing teeth (40.6%), whereas, macrodontia, odontoma and transposition were the least frequent anomalies, with a prevalence of 0.01%, 0.08% and 0.07% respectively. While the overall prevalence of these anomalies may be low, the early diagnosis is imperative for the patient management and treatment planning.

Copyright©2019 Nidhi Khajuria and Rubeena Anjum. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

INTRODUCTION

Developmental dental anomalies are an important category of dental symptomatology. Their incidence and degree of expression in different population groups can provide important information for phylogenetic and genetic studies and help the understanding of variations within and between the different populations. The various dental anomalies of the dentition are frequently observed in the dental clinic and hospitals. Even though their incidence and prevalence is relatively less when compared to other oral diseases like dental caries and periodontal diseases, but if left neglected can pose serious problems in the development of the child and also complicates treatment planning. These developmental anomalies represent itself in the form of malocclusion, esthetic, and functional problems, and possible disposition to other oral diseases making their clinical management complicated.¹

Dental anomalies in tooth number, shape, structure, and position may result in problems in arch length and occlusion,

which may greatly influence treatment planning for the dentists. The etiology of these conditions is usually suggested to be either due to genetic factors in addition to some etiological events during the prenatal and postnatal development periods and environmental and pathological factors.²⁻⁴

Hence, this study was undertaken to find the frequency and distribution of dental anomalies along with their differences between gender and various religion in primary dentition in children attending a Indira Gandhi Dental College & Hospital in jammu.

MATERIAL AND METHODS

The clinical diagnosis and review of panoramic radiographs of 3000 patients and students attending the Department of Oral pathology, IGGDC, Jammu between april 2017 to janurary 2019 were examined for the presence of various dental anomalies. The ages of the patients ranged from 13 to 38 years with a mean of 21.8 years. All panoramic radiographs were taken with the Dentsply Gendex Orthoralix 9200 (Dentsply Asia, Milford, US), and the magnification factor was 1.23. All reported measurements were adjusted according to this factor. The panoramic radiographs were examined on standard light

*Corresponding author: Nidhi Khajuria

Department of Oral Pathology, IGGDC, jammu

boxes, under good lighting conditions, standardized screen brightness and resolution to determine the dental anomalies. Patients' dental records and radiographs were examined in order to detect the following dental anomalies: congenitally missing teeth, impactions, ectopic eruption, supernumerary teeth, germination, fusion, dilacerations, taurodontism, dens in dente, microdontia, macrodontia, and any other unusual finding that can be assessed with OPG. After the examination of the patient records, patients who exhibited any pathological conditions, trauma or fracture of the jaw that might have affected the normal growth of permanent dentition or any hereditary diseases or syndromes were excluded from the study.

RESULTS

The study comprised of 1600 males (53.3%) and 1400 females (46.6%) with an age range of 13 to 38 years with a mean age of 21.8 years. 900 (33.3%) patients had at least one dental anomaly. The congenitally missing teeth 366 (40.6%) had the highest prevalence, followed by impacted teeth 480 (53.3%), supernumerary teeth 24 (0.26%) and microdontia 15 (0.01%). Other anomalies were found at lower prevalence ranging from transposition 7 (0.007%) to ectopic eruption 8 (0.008%).

DISCUSSION

Dental anomalies may be expressed with mild developmental delay to the most severe tooth agenesis, dental anomalies may be expressed as microdontia, changes in dental shape, structure and ectopias⁵

The etiology of dental anomalies of number, size, position, as well as timing of development, have been suggested to be genetic and hereditary, as derived from studies in families, monozygotic twins, and from the frequent observation of associations of certain dental anomalies⁶. These dental anomalies can complicate orthodontic treatment if not considered; therefore, their presence should be thoroughly investigated during diagnosis and carefully considered during treatment planning. Many epidemiological surveys have been done in the recent past in different parts of the world to determine the prevalence of dental anomalies.^{7,8}

The results of these studies have shown that variations in the prevalence of dental anomalies could be due to regional and racial differences. The prevalence of some abnormalities such as hypodontia and supernumeraries may have been underestimated in few studies as these studies were conducted without any radiographic assessment. This study was done to detect the prevalence of dental anomalies in the Indian population using the panoramic radiographs of the patients.

The prevalence of dental anomalies reported in this study was quite high due to a large number of the anomalies of the wisdom teeth which had a prevalence of 36.7%. A high prevalence of congenitally missing and impacted third molar teeth is reported in this study similar to the results reported in earlier studies. The present findings showed that the incidence of impaction was found to be 15.5%, which is higher than the findings of the previous studies.^{9,11}

Afify and Zawawi¹ reported a higher prevalence of impacted teeth (21.2%). In this study, canines were the most commonly impacted teeth, excluding third molars with the prevalence of 3.1%, which is much lower than the studies of Fardi et al.¹²

who reported a prevalence of 8.8% in the Greek population. In a similar study, 4898 Saudi patients aged 13 years and older were examined, who showed a prevalence of 3.6% with at least one impacted cuspid¹³

Another study that analyzed 1858 patients of the 11-18 year age group presented for orthodontic treatment, revealed 101 cases of impacted canines with a prevalence of 5.43%¹⁴ Aydin et al¹⁵ and Afify and Zawawi¹ reported. The present study showed that the prevalence of various dental anomalies shows variations from other similar studies. The dissimilarities may be attributed to the sample selection, method of the study and area of patient selection, which suggest racial and genetic differences. Early detection of dental development anomalies is very important, as they may lead to many unseen complications. Whether the prevalence of dental anomaly leads to any orthodontic problem has however, not been fully understood. Diagnosis could be made at the radiological level the earlier the diagnosis, the less risks related to treatment.

While the overall prevalence of each of these anomalies in the dental clinic or population group may be low, their presence may, in some cases create a management problem or complicate treatment options for patients. Careful diagnosis simplifies the treatment plan and reduces complications.

CONCLUSION

Developmental anomalies of teeth are clinically evident abnormalities. They can result in pathologies and also present as esthetic challenges. Meticulous examination and suitable investigations are necessary to diagnose the disturbance and deliver proper management.

References

1. Afify AR, Zawawi KH. The prevalence of dental anomalies in the western region of Saudi Arabia. ISRN Dent. 2012;2012:837270.
2. Basdra EK, Kiokpasoglou M, Stellzig A. The Class II Division 2 craniofacial type is associated with numerous congenital tooth anomalies. Eur J Orthod. 2000;22:529-35.
3. Baydas B, Oktay H, Metin Dagsuyu I. The effect of heritability on Bolton tooth-size discrepancy. Eur J Orthod. 2005;27:98-102.
4. Kotsomitis N, Dunne MP, Freer TJ. A genetic aetiology for some common dental anomalies: a pilot twin study. Aust Orthod J. 1996;14:172-8.
5. Garn SM, Lewis AB, Kerewsky RS. X-linked inheritance of tooth size. J Dent Res. 1965;44:439-41.
6. Mossey PA. The heritability of malocclusion: part 2. The influence of genetics in malocclusion. Br J Orthod. 1999;26:195-203.
7. Salem G. Prevalence of selected dental anomalies in Saudi Children Sfrom Gizan region. Community Dent Oral Epidemiol. 1989;17:162-3
8. Sawyer DR, Taiwo EO, Mosadomi A. Oral anomalies in Nigerian children. Community Dent Oral Epidemiol. 1984;12:269-73.14.
9. Shah RM, Boyd MA, Vakil TF. Studies of permanent tooth anomalies in 7,886 Canadian individuals. I: impacted teeth. Dent J. 1978;44:262-4.
10. Grover PS, Lorton L. The incidence of unerupted permanent teeth and related clinical cases. Oral Surg Oral Med Oral Pathol. 1985;59:420-5

11. Thilander B, Myrberg N. The prevalence of malocclusion in Swedish schoolchildren. *Scand J Dent Res.* 1973;81:12-21
12. Fardi A, Kondylidou-Sidira A, Bachour Z, Parisis N, Tsirlis A. Incidence of impacted and supernumerary teeth- a radiographic study in a North Greek population. *Med Oral Patol Oral Cir Bucal.* 2011;16:e56-61.
13. Zahrani AA. Impacted cuspids in a Saudi population: prevalence, aetiology and complications. *Egypt Dent J.* 1993;39:367-74.
14. Rózsa N, Fábíán G, Szádeczky B, Kaán M, Gábris K, Tarján I. Prevalence of impacted permanent upper canine and its treatment in 11-18-year-old orthodontic patients. *Fogorv Sz.* 2003;96:65-9
15. Aydın U, Yılmaz HH, Yildirim D. Incidence of canine impaction and transmigration in a patient population. *Dentomaxillofac Radiol.* 2004;33:164-9
16. Afify AR, Zawawi KH. The prevalence of dental anomalies in the western region of Saudi Arabia. *ISRN Dent.* 2012;2012:837270.

How to cite this article:

Nidhi Khajuria and Rubeena Anjum (2019) 'Prevalence and Distribution of Selected Developmental Dental Anomalies in an Jammu and Kashmir Population', *International Journal of Current Advanced Research*, 08(02), pp. 17220-17222.
DOI: <http://dx.doi.org/10.24327/ijcar.2019.17222.3218>
