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Prevalence of Hypodontia, Supernumerary Teeth and Dens Evaginatus in Children of Jaipur District: An Observational Study

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Abstract: ***Aim: This study investigated the prevalence of developmental dental anomalies among children in the Jaipur district of Rajasthan, India. Materials & Methods: A cross - sectional study was conducted on a sample of 5000 children aged 6 - 14 years. Clinical examinations and radiographic analyses were performed to identify various dental anomalies. Statistical Analysis used: Data were analyzed using SPSS software (version 25.0). Descriptive statistics were calculated, and the chi - square test was employed to assess associations between dental anomalies and gender. A p - value of <0.05 was considered statistically significant. Results: The prevalence of hypodontia being the most common (1.22%), followed by supernumerary teeth (0.38%) and dens evaginatus (0.02%). Conclusions: The findings emphasize the importance of early detection and intervention in pediatric dental care.***

Keywords: dental anomalies, hypodontia, supernumerary teeth, dens evaginatus

1. Introduction

Developmental dental anomalies are deviations from the normal appearance of teeth that occur during tooth formation. These anomalies can affect tooth number, size, shape, and structure, potentially leading to functional and aesthetic issues. Early identification of such anomalies is crucial for proper diagnosis, treatment planning, and prevention of associated complications.1 The prevalence of dental anomalies varies across different populations and geographic regions. While several studies have reported on the occurrence of these anomalies in various parts of India, limited data is available for the Jaipur district. This study aims to address this knowledge gap by investigating the prevalence of developmental dental anomalies among children in Jaipur.2

2. Methods

Study design and population: A cross - sectional study was conducted on 5000 children aged 6 - 16 years, randomly selected from schools in the Jaipur district. Ethical approval was obtained from the institutional review board, and informed consent was acquired from parents or guardians.

Data collection: Clinical examinations were performed by calibrated dentists using standard dental chairs, mirrors, and probes. Panoramic radiographs were obtained for each participant to aid in the diagnosis of dental anomalies. The following anomalies were recorded: hypodontia, hyperdontia (supernumerary teeth), microdontia, macrodontia, fusion, gemination, dens invaginatus, dens evaginatus, and talon cusp.

Statistical analysis: Data were analyzed using SPSS software (version 25.0). Descriptive statistics were calculated, and the chi - square test was employed to assess associations between dental anomalies and gender. A p - value of <0.05 was considered statistically significant.

3. Results

Of the 5000 children examined, the distribution of anomalies were of hypodontia being the most common (1.22%), followed by supernumerary teeth (0.38%) and dens evaginatus (0.02%). No statistically significant difference was observed in the prevalence of dental anomalies between boys and girls ($p > 0.05$).

4. Discussion

Some variations were observed in the frequency of specific anomalies. Hypodontia was the most prevalent anomaly, affecting 1.22 % of the sample population. This finding is consistent with previous studies conducted in different parts of India, which reported prevalence rates ranging from 4.19% to 6.9%.3, 4 The high occurrence of hypodontia underscores the need for early detection and appropriate management to prevent potential complications such as malocclusion and aesthetic concerns.

Supernumerary teeth were identified in 0.38 % of the children. King et al. in their study on 936 children aged 5 years reported a prevalence of 2.8%.5 Osuji et al. reported that in 1878 children, there is no mention of the mean age group, but the prevalence of ST in primary dentition was 0.58%.6 This discrepancy may be attributed to genetic factors or environmental influences specific to the Jaipur region.

Dens evaginatus, observed in 0.02 % of the sample, was more prevalent compared to previous studies in India.[7, 8, 9] This finding highlights the importance of educating patients and parents about this condition, as it can lead to pulpal involvement if left untreated.

The absence of significant gender differences in the prevalence of dental anomalies is consistent with most previous studies[10], suggesting that genetic and environmental factors play a more crucial role than gender in the development of these anomalies.

5. Conclusion

This study provides valuable data on the prevalence of developmental dental anomalies among children in the Jaipur district. The findings underscore the importance of thorough clinical and radiographic examinations in pediatric dental care for early detection and management of these anomalies.

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