ORIGINAL ARTICLE

Impact of Hypodontia on Social Well-Being and Quality of Life of Children

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ABSTRACT

Background and Objective: The congenital absence of one or more deciduous or permanent teeth is called hypodontia. It is the most common congenital dental anomaly. Hypodontia could be caused by a number of genetic and environmental factors. The aim of the current study was to find out the impact of hypodontia on the social well-being and quality of life of children.

Methods: A cross sectional comparative study was carried out on 40 patients suffering from hypodontia and 40 healthy controls in the outpatient Department at Nishtar Institute of Dentistry, Multan. Patients and healthy controls were selected by non-probability convenient sampling technique without any gender discrimination. Age of the selected patients and controls was 11 – 14 years. Urdu proformas were used for better understanding of children.

Results: Mean age of the patients suffering from hypodontia was 11.8 (± 0.90) years and mean age of healthy controls was 11.9 (± 0.98). Most common missing tooth was maxillary lateral incisor. Out of n = 40 patients, 85% and 82.5% used to avoid smile and urge with other people respectively. Almost 85% children were teased by other children and also were repetitively asked questions about their anomaly.

Conclusion: Hypodontia has substantial impact on the social well-being and quality of life of the children. Patients were socially disturbed and had a poor quality of life.

KEYWORDS: Hypodontia, Children, Social well-being, Quality of life, Oral health.

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INTRODUCTION

Hypodontia is defined as "the congenital absence of one or more primary or secondary teeth." If six or more teeth are missing, it is called oligodontia. Hypodontia is the most widely reported congenital dental abnormality and occurs as a complicated clinical disease. Absence of deciduous tooth is usually associated with agenesis of succeeding permanent tooth.[1] Hypodontia may occur individually, in association with a disease or with other dental abnormalities. If all teeth are missing, it is called exodontia. It usually occurs in

hypohidrotic ectodermal dysplasia.[2]In children and adolescents, lower quality of life is associated with the domain of functional limitations in the absence of posterior teeth while missing anterior teeth exhibit reduced quality of life on the social and emotional well-being domain.[3]

The prevalence of hypodontia in general population is 4.6% with no gender predilection.[4] Hypodontia is more common in maxillary teeth than in the mandibular teeth.[5] The most frequently missing tooth is maxillary lateral incisor (excluding third molar) exhibiting a prevalence of 2.1% in general population.Second premolar is absent in 1.9% people.[6] Most of the patients exhibit mild hypodontia with one or two missing teeth. About 10% patients have four or more missing teeth which is also categorized as mild hypodontia. While less than 1% have six or more teeth missing which is considered as severe form of hypodontia.[7]

Hereditary and environmental factors are included in the etiology of hypodontia. It occurs due to limited space in the dental arches, physical barriers, destruction of the dental lamina, functional anomalies of the odontogenic epithelium or the inability of mesenchyme to initiate the process.[8,9] Hypodontia may be inherited as an autosomal dominant, recessive or x-linked pattern. Different home box genes are involved in the etiology of hypodontia include Msx1, Msx2 and Pax9.[10] The environmental factors included in the etiology of hypodontia are infections, drugs, metabolic or hormonal disturbances and irradiations.[11]

All over the world, many investigations have been carried out about the effects of hypodontia on the quality of life of patients. The World Health Organization (WHO) defined the quality of life as "individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns". Quality of life is complex and multidimensional and has been shown to be related to oral health.[12] Oral health has been defined as the standard of oral and related tissues that allows individuals to eat, speak and socialize without active disease, discomfort or embarrassment and contributes to general well-being.[13] Oral health related quality of life covers different domains including life and safety of the dentition, absence of pain and discomfort, appropriate physical functioning, absence of disease or symptoms, emotional functioning related to smile, social functioning, satisfaction with oral health and no social or cultural disadvantages due to oral status.[14]

Quality of life instruments helps to assess both the physical and psychosocial impact of the disease. Evaluating the impact of disease on a person can promote communication among patients, parents and the dental experts. It offers an insight to the consequences of adverse oral health conditions on lives ofchildren and their families and provides information about the problem for the patient on daily basis.[14]

METHODS

A cross sectional comparative study was carried out on 40 patients suffering from hypodontia and 40 healthy controls in the outpatient Department of Nishtar Institute of Dentistry, Multan from July, 2015 to January 2016. Patients and controls were selected by non-probability convenient sampling technique without any gender discrimination. Age range of the patients was from 11 – 14 years. Patients with other chronic ailments, dento-facial anomalies and mental disorders were excluded from the study. A written informed consent was signed by the participants. Urdu proformas were used for better understanding of children. A perception questionnaire consisting of four domains concerningavoid to smile, arguing with others, teasing and asking questions by children was given to complete. Sufficient time was allocated and it was reassured that the results would remain confidential. The research work was approved by Institutional Ethical Review Committee vide Letter No: 214/ERC/NID/2018.

STATISTICAL ANALYSIS

Data was entered and analysed usingStatistical Package for Social Sciences (SPSS) version 20. Mean and standard deviation (SD) was given for quantitative variables like age, number of missing teethand scores of child perceptions questionnaire (CPQ) questionnaire. Accordingly, student's t-test was used to determine the mean difference in four domains of CPQ scorebetween hypodontia and

control groups. A P-*value ≤ 0.05* was considered as statistically significant.

RESULTS

Mean age of the patients suffering from hypodontia was 11.8 (± 0.90) years and mean age of healthy controls was 11.9 (± 0.98) with an age range of 11 – 14 years. Most common missing teeth were maxillary lateral incisor (Fig.1).

Perception about four domains including avoid to smile, arguing with others, teasing and asking questions by children was compared between patients and healthy controls (Table-1).

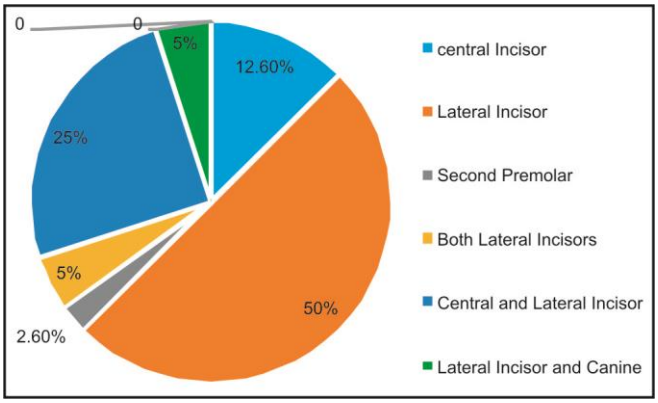

Fig.1: This pie chart shows the distribution of missing teeth in experimental and control groups.

Table-1: Comparison of Child Perception Questionnaire (CPQ) between patients suffering with hypodontia and healthy controls.

Group	Never	Sometimes	Often	Every Day	Total	*P-value*
CPQ avoid smiling						
Patients suffering with hypodontia	0 (0%)	0 (0%)	34 (85%)	6 (15%)	40 (100%)	< 0.001
Healthy controls	40 (100%)	0 (0%)	0 (0%)	0 (0%)	40 (100%)	
CPQ argued with others						
Patients suffering with hypodontia	0 (0%)	1 (2.5%)	33 (82.5%)	6 (15%)	40 (100%)	< 0.001
Healthy controls	40 (100%)	0 (0%)	0 (0%)	0 (0%)	40 (100%)	
CPQ children teased you						
Patients suffering with hypodontia	0 (0%)	0 (0%)	34 (85%)	6 (15%)	40 (100%)	< 0.001
Healthy controls	40 (100%)	0 (0%)	0 (0%)	0 (0%)	40 (100%)	
CPQ children asked you question						
Patients suffering with hypodontia	0 (0%)	0 (0%)	34 (85%)	6 (15%)	40 (100%)	< 0.001
Healthy controls	40 (100%)	0 (0%)	0 (0%)	0 (0%)	40 (100%)	

DISCUSSION

Congenital absence of one or more primary or secondary teeth is called hypodontia. This cross-sectional study was conducted to investigate the impact of hypodontia on social well-being and quality of life in children between ages 11 – 14 years. Sheena Kotecha[11] reported a mean age of 12.6 years with a range of 11 to 14 years which is quite comparable to findings of current study. Turner and his colleagues[15]also reported the mean age of 13 years in their study. The present study found a statistically significant impact of hypodontia on the social well-being and quality of life between the hypodontia group and control group.

A study was performed in Pakistan by Ahmed et al.[16] showing similar results to current study. According to their results, patients with hypodontia showed positive family history, poor quality of life, greater dissatisfaction with their facial appearance and lower self-esteem. These genetic dental disorders are not associated with significant mortality; however, there is significant morbidity. The effects on individuals and families should not be underestimated.[16]

Laing et al.[17] showed different results from current study. According to their study, hypodontia did not appear to affect the psychosocial status of the patients though causesdifficulty in chewing.[17] Study performed by Alsumait et al.[18] showed

similar results to present study. According to their study, about 45% children with more than four missing teeth experienced social stress.[18]

CONCLUSION

Hypodontia adversely affects the social well-being of the children. Patients suffering from hypodontia were dissatisfied with their appearance and had a poor quality of life as compared to normal individuals. Therefore, early management of hypodontia is recommended to improve the quality of life of patients.

LIMITATIONS OF STUDY

The limitations of this study are that this is a single centered study with small sample size. A series of future studies are recommended with larger sample size.

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CONFLICT OF INTEREST

None to declare.

FINANCIAL DISCLOSURE

None to disclose.

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Author's Contribution

FQ: Acquisition of data and drafting of manuscript.

JU: Conception of work, interpretation of data, drafting the manuscript.

MM: Revising the work critically for important intellectual content.

DW: Acquisition and analysis of data.