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Frequency of mesiodens among school children in Multan, southern Punjab.

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ABSTRACT… Objective: To know the frequency of mesiodens among school children in Multan, Southern Punjab. **Study Design:** Cross Sectional Descriptive study. **Setting:** In Two Private Schools and Two Public Schools. **Period:** December 2019 to March 2020. **Material & Methods:** In this study 340 students were equally selected from private and government schools for study and were selected on the basis of inclusion and exclusion criteria. Informed consent of the patient/guardian was taken. Medical and dental history of the patient was taken. Every child was examined by two expert dentists with mirror, probes and tweezers. **Results:** In this study out of 340 individuals 29 individuals showed the presence of mesiodens. Out of these 29 individuals 20 were males and 9 were female. **Conclusion:** Mesiodens are quite common and is more common in male. Early identification and management is necessary to prevent complications and tooth loss.

Key words: Mesiodens, Mesiodantes, Supernumerary, Southern Punjab, School Children.

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Mesiodens a developmental anomaly, where there is an extra tooth in addition to normal number of teeth. Mesiodens are supernumerary teeth which occur between two central incisors.[1,2] These are the most frequent type of supernumerary teeth. Other types are distomolar, paramolar, and others.[3,4] Mesiodens occur in parmaxillary region and may be erupted or not, single or multiple (termed as mesiodantes).[5,6,7,11,12]

Mesiodens may occur in primary teeth or secondary teeth but are more common in permanent teeth.[7,8] These supernumerary teeth can cause many complications like retention delayed eruption, rotation, root resorption, ectopic eruption and pulp necrosis.[9,10] Because of these complications surgical intervention may be needed.[13,14,15,16,17,18,19]

The prevalence of mesiodens varies in different regions of World. One study conducted in Spain showed the prevalence of the mesiodens 0.3% to 3.8%, in Hungary it was reported to be 1.53%. In India it was reported to be 0.9% to 0.29%, in Nepalits 2.1%. Local studies have shown its prevalence 3.9%.[3,4,17] So the aim of the current study was to know the frequency of mesiodens in public and private schools children in souther Punjab settings.

MATERIAL & METHODS

It was a cross sectional descriptive study, which was conducted in public and private schools of Multan those who had given consent to participate. 340 students, 170 from each school were taken. Sampling technique was non probability convenient sampling. Students were selected by lottery system, who met our inclusion criteria which was male and female students aged 6-17 years. Exclusion criteria was children with history of extraction, tooth loss due to any reason, history of trauma and children with any syndrome. Every child was examined by two expert dentists with mirror, probes and tweezers. Ethical permission was taken from the institutional ethical review committee (IRB/IEC-2-1219).

Data was collected on a predesigned proforma

including age, sex, number of mesiodens. Data was entered in SPSS20. Qualitative variables were analysed by using frequency percentage and quantitative variables were expressed by mean± standard deviation. P value of <0.05 was considered significant.

RESULTS

Study population included 340 school children, 170 form private school and 170 from government school. Children were between the ages of 6-17 years of mean age of 9±3. They were grouped in two age groups as shown in Table-I.

Variable		Mesiodens Present	Mesiodens Absent	Total
Age	6 to 10 years	20 (10%)	181 (90%)	201
	11 to 17 years	9 (6.5%)	130 (93.5%)	139
Total		29	311	340

Table-I. Age groups with frequency of mesiodens in two groups.

Gender distribution in cases with mesiodens positive cases are shown Figure-1 below.

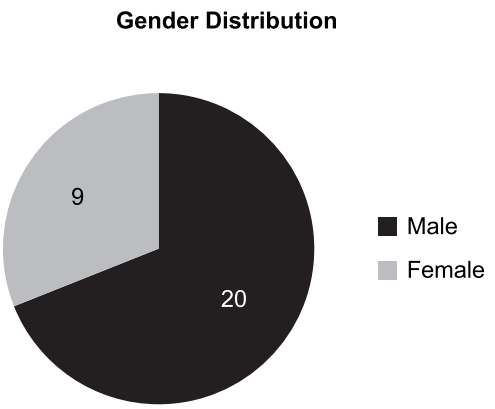

Figure-1. Gender distribution in cases with mesiodens positive cases.

One variable of the study was number of mesiodens which is shown in Figure-2 as shown below.

Data regarding frequency of mesiodens in public and private schools and gender distribution of participants is shown in Table-II which shows slight predominance in government school children.

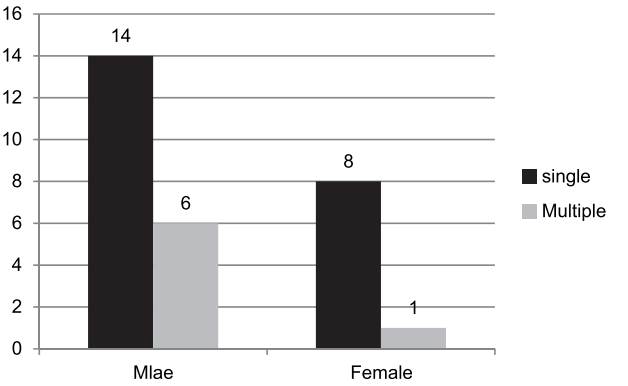

Figure-2. Number of mesiodens with respect to gender in positive cases.

Variable		Mesiodens Present	Mesiodens Absent	Total
Gender	Male	20 (8.3%)	220 (91.7%)	240
	Female	9 (9%)	91 (91%)	100
School	Govern-ment	14 (8.2%)	156 (91.8%)	170
	Private	15 (8.8%)	155 (91.2%)	170

Table-II. Frequency of Mesiodens in Public and Private Schools and gender distribution.

DISCUSSION

Mesiodens are developmental anomaly, affecting both primary and permanent teeth and if not timely managed can cause many complication. The present study showed the frequency of mesiodens in study population was 8.5%. Local studies conducted previously have shown the prevalence of 3.5% by Farhat et al. Prevalence of mesiodens in the surrounding countries like India is reported as 3.5% by Sruthi et al and 0.69% by Pal et al. Its prevalence in China and Nepal is reported as 5.2% and 2.1% respectively. International data regarding prevalence of mesiodens have shown to be 0.5% to 3.8%in permanent teeth and 0.35 to 0.6% in primary teeth in Spain by Furnandez et al, 0.1% in Turkish children by Aren et al and Saruhanoglu reported that it varies between 0.45% to 3% in Turkish Population.[2,3,4,5,6,13,15,16]

In the present study male to female ratio of study

population was 2.4:1 and it was 2.22:1 in children with mesiodens. Results of present study indicate that mesiodens are more common in males which is in conformity with the published literature internationally and nationally. In Nepal it was found to be 3:1 while in Turkey it was 3.5:1. One study in Pakistan by Farhat et al reported it to be reverse that it is more common in females.[3,5,6,16,17]

In the current study it was observed that out of 29 children with mesiodens 9(24.13%) have multiple mesiodens called mesiodantes. Literature has shown the presence of mesiodantes. A study conducted in Nepal showed that 30%of the children with mesiodens have mesiodantes, an observation which is close to our study.[3] Multiplicity is also more frequent in males as in current study 6 males have multiple mesiodens compared to only one female.

From government school children 8.2% have mesiodens and 8.8% children of private school have mesiodens. There was no significant statistical difference between two groups. Studies have shown that most frequent type of supernumerary teeth is mesiodens. In current study all children have mesiodens, so it is in accordance with previous studies.[1,2,3,6,14,15, 20]

It is essential to identify and manage mesiodens as if not treated timely, they can cause many complications like dental mal-position, diastoma, formation of cavity, pulp necrosis and cyst formation.[1,3,18,19] So it is necessary to identify and manage these to prevent these complications. This study has shown that mesiodens are not rare in our population and is more common in males which can cause many potential complications. In country like Pakistan where routine health examination is not a usual practice, it is necessary to identify these and manage. Dentists should know about it frequency and potential complications, so that these can be addressed properly and timely.

CONCLUSION

This study has shown that mesiodens are not rare in our population and is more common in males and in government school children which can cause many potential complications.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Rabia Zafar	Study design, data collection, writing the manuscript, formulation of tables statistical analysis reviewed and approved.	Rabia Zafar
2	Talha Ashar	Study design, statistical analysis, result interpretation, manuscript writing and revising it critically for important intellectual content.	Talha Ashar
3	Asma Shakoor	Data collection, formulation of tables reviewed and approved the manuscript.	Asma Shakoor
4	Javed Iqbal	Statistical analysis, interpretation of resutls, Reviewed and approved the manuscript. Study design, data collection, writing the manuscript, formulation of tables reviewed and approved.	Javed Iqbal