

AGE AND GENDER PREDILECTION OF MESIODENS- A RETROSPECTIVE STUDY

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Running Title: Age and Gender Predilection of mesiodens

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Abstract: *Mesiodens is a supernumerary tooth which is placed in the midline between two central incisors or the position may change according to the individuals. Supernumerary teeth are a developmental disturbance occurring during odontogenesis resulting in the formation of the teeth in the excess of normal numbers. The aim of the study is to assess age and gender predilection of mesiodens among the general population. Retrospective analysis of all cases with a diagnosis of mesiodens. A total of 61 case sheets were reviewed from patient records. Tabulated in excel sheet. Imported to SPSS Version 20.0. Descriptive analyses were reported. The p value is not significant, in spite of the association presence of mesiodens in male population compared to female, hence the study should be done with a larger sample size.*

Keywords: *Mesiodens; Conical; Gender; Age; Shape.*

1. INTRODUCTION

Mesiodens is a supernumerary tooth which is placed in the midline between two central incisors or the position may change according to each individual. Supernumerary teeth are a developmental disturbance occurring during odontogenesis resulting in the formation of the teeth in excess of the normal number (Thangarajet al., 2016; Syed Mustansir Ul Hassnainet al., 2017). They occur both in the deciduous and permanent dentition. Supernumerary teeth can be classified based on the time of appearance, according to the position of arch and according to their shape (Primosch, 1981; Gupta and Ramani, 2016). Supernumerary teeth may be single, multiple unilateral or bilateral, erupted or unerupted and in one or both jaws (C, 2015; Sivaramakrishnan and Ramani, 2015). Among the supernumerary teeth, mesiodens is the most common type. Morphologically mesiodens may have heterogeneous forms. Three common types; namely conical or peg shaped, tuberculate and supplemental (tooth like) have been reported, of which the conical form is the most common type (Rosenzweig and Garbarski, 1965; Hannah et al., 2018). Mesiodens can be diagnosed through clinical and radiographic examination using the maxillary anterior periapical and occlusal radiography. In addition to these, orthopantomography and lateral cephalogram can also aid in the diagnosis (Kokten, Balcioglu and Buyukertan, 2003; Sridharan, Ramani and Patankar, 2017). Usually, mesiodens is associated with eruption disturbances, midline diastema or

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other malocclusions (Taylor, 1972; Shree et al., 2019). The premaxillary region such as rotation or axial inclination of permanent central incisors, resorption of roots of adjacent teeth and sometimes even dentigerous cyst formation (Ravn, 1971; Vivekaet al., 2016).

Hyperactivity of embryonic epithelial cells, tooth germs are equal but some can differentiate into investigations that would result in new dental tissue (Mukhopadhyay, 2011; G. Jayaraj et al., 2015). It can be either from dental lamina being attached to this by the dentis gubernaculum (Lee et al., 2014; Jangidet al., 2015). New tooth buds may originate either by over reactivity of the outer layer sheath of hertwigs or epithelial remains of malassez (VecchioneGurgelet al., 2013; GifrinaJayaraj, Ramani, et al., 2015). The split of the dental follicle, the theory of dichotomy and some factors such as trauma, evolutionary mutations, can cause accidental division into two or more fragments (Shekhar, 2012; Sridharan et al., 2019). According to the theory of atavism it is mesiodens the third incisors primates would be a phylogenetic reversal (Amin et al., 2014; Swathy, Gheena and Varsha, 2015). Supernumerary teeth may be associated with some syndromes such as fabry's syndrome, cherubism, apert syndrome, cleidocranial dysplasia or goazon disease, cleft lip, cleft palate, gardner syndrome and other as hereditary fibromatosis associated with hearing loss and supernumerary teeth (Choi et al., 2011). The appearance of mesiodens can occur in individuals with no syndrome. Management of supernumerary teeth depends on the type and position of the tooth (Gharoteet al., 2011). Immediate removal of mesiodens is usually indicated in the following situation; inhibition or delay of eruption, displacement of the adjacent tooth, interference with orthodontic appliance, presence of pathologic condition or spontaneous eruption of the supernumerary teeth (Sherlinet al., 2015; Zhao et al., 2020)

The aim of the study is to assess age and gender predilection of mesiodens among patients visited saveetha dental college.

2. MATERIALS AND METHOD

The study comprised a retrospective analysis of all cases with a diagnosis of mesiodens. A total of 61 case sheets were retrieved from Dental Information Achieving Software (DIAS) which contains all the patients records from the initial to final visit. The study was carried out in an institutional setting with the advantage of being a wide range of data availability in digital format and the disadvantage being assessment of patients only in a single institution. The approval was granted by the institutional ethics committee. The study involves one guide and two reviewers. The collected data was subjected to photographic and radiographic cross verification. Data retrieved were chronologically recorded.

Parameters assessed and tabulated were: -

- Age
- Gender
- No.of Mesiodens
- Type/shape of mesiodens
- Position
- Complication

The data is imported and variables were coded and imported to SPSS. Using SPSS version 20.0, descriptive statistics were carried out and chi square test was used for inferential statistics, p-value was calculated and graphs were plotted to arrive at final inference.

3. RESULTS AND DISCUSSION

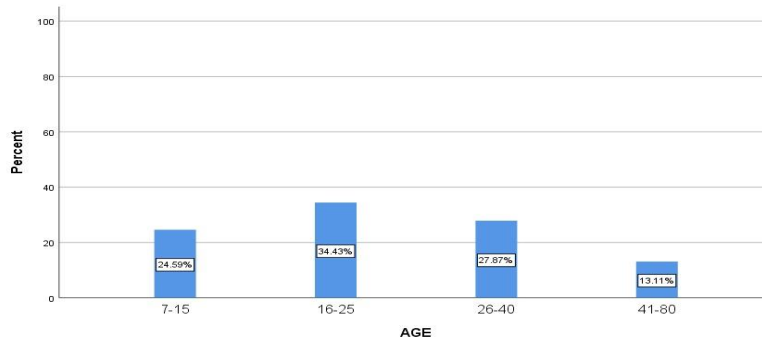


Figure 1: Frequency of patients distributed according to age.

Graph 1- Shows the frequency of patients distributed according to age group from 7-60 years of age for mesiodens. It was seen that 16-25 years of age are highest no. of patients reported with mesiodens.

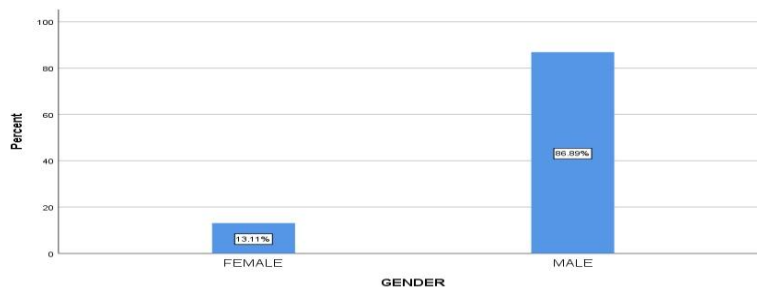


Figure 2- Gender distribution

Figure 2 Shows the frequency of gender distribution of patients visiting the op. It is inferred that males have reported highest in number with presence of mesiodens.

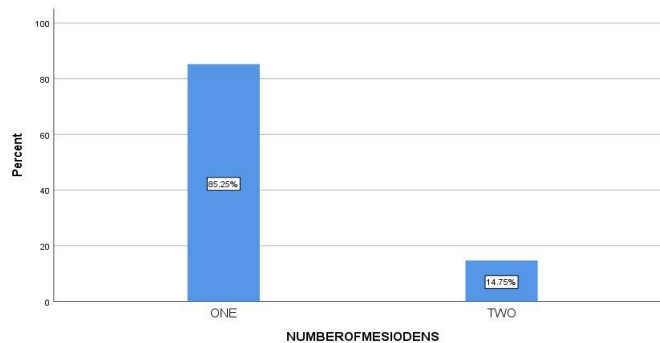


Figure 3- Frequency of number of mesiodens

Figure 3 shows the frequency of no. of mesiodens present in each patient. Most of the patients have reported only with one mesiodens present in the oral cavity.

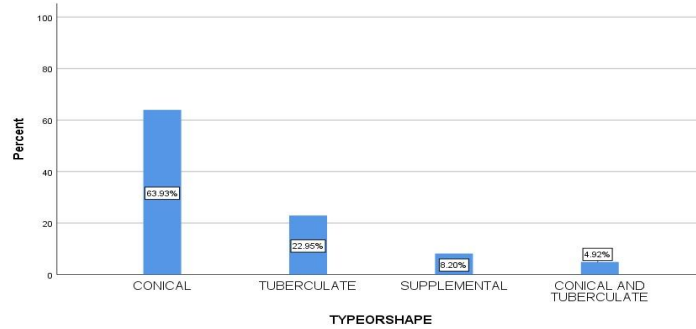


Figure 4- Type/shape of mesiodens

Figure 4 shows the frequency of type and shape of mesiodens. Most of the patients have reported conical shape mesiodens.

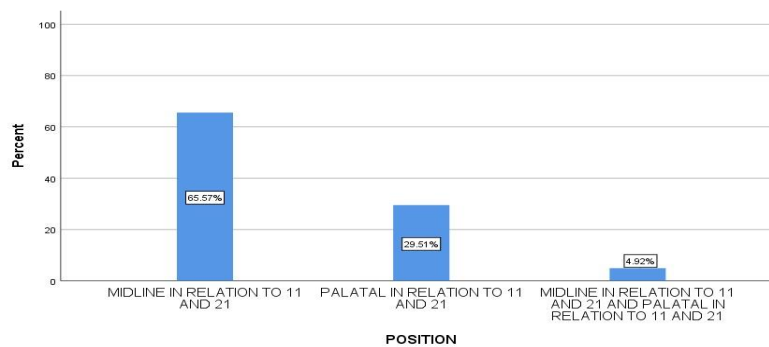


Figure 5- Depicts position of Mesiodens

Figure 5 shows the frequency of position of mesiodens in the oral cavity. Most of the mesiodens are present midline in relation to 11 and 21.

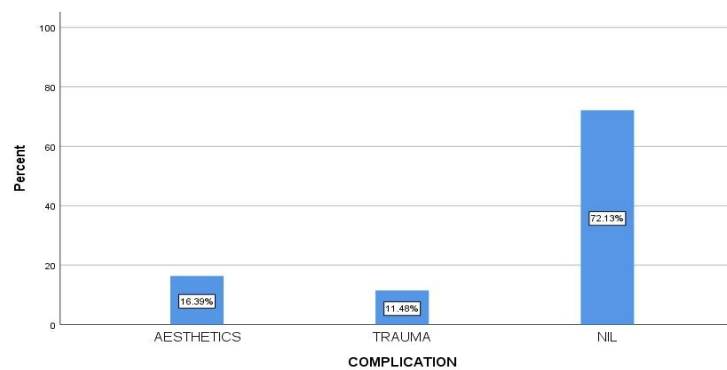
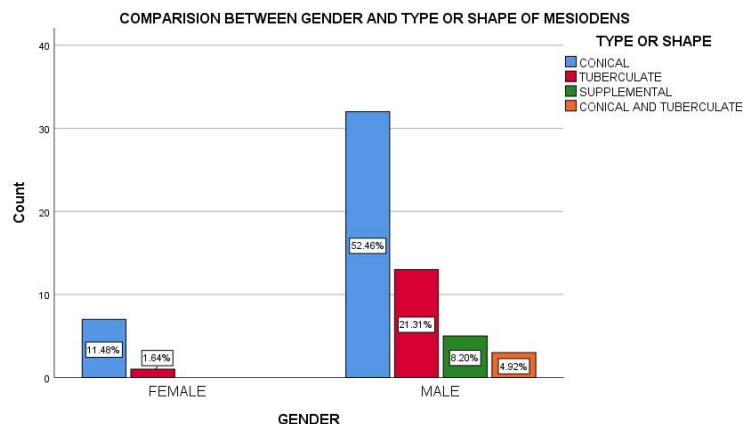


Figure 6- Complication of mesiodens

Figure 6 shows the frequency of complication of the mesiodens. There is no much complication in mesiodens, but there is concern for aesthetics.



Graph 7: Comparison between gender and type or shape mesiodens

Graph 7: Shows the association between the gender and type / shape of mesiodens. It was found to be statistically insignificant, (Chi square test, $P = 0.137$)

According to this study, there were a total of 61 patients in the age criteria of 7-80 years of age who reported to the OP during February 2019- March 2020 of Saveetha Dental College. Out of this, almost 34.6% of the patients belong to the age group of 16-25 years. Males have reported highest in number which is about 86.9% who have significant presence of mesiodens. According to Longo et al., (Longo et al., 2020) There was a significant presence of conical shape mesiodens present more common in male population. According to (Maddalone et al., 2018) most of the supernumerary teeth extracted are mesiodens and there were many cases of impaction of mesiodens which also needed surgical removal for better aesthetics. According to Mevlut Celikoglu et al., (Celikoglu, Kamak and Oktay, 2010; Gheena and Ezhilarasan, 2019). There was a significant presence of conical shape mesiodens present in male population than female, it is also proven males are more significant with presence of mesiodens. According to Shubhabrate et al., (Pal et al., 2019) 68% of the patients had conical shape mesiodens out of which 68% of the population is male. According to (Sejdini and Çerkezi, 2018) there was significant cases of mesiodens in children age group of 7-14 years and most of the mesiodens are conical and shape and the most affected populations are males. According to Devi gopakumar et al., (Nair et al., 2014) sex distribution of M:F equal 2:1 which proves that males have significant prevalence for mesiodens. According to Poornima P et al., (Poornima, Roopa and Shah, 2014; Gifrina Jayaraj, Sherlin, et al., 2015) sex distribution of M:F equal 1:1, in which 61% of the mesiodens are conical in shape. Moreover, to conclude most of the studies compared go to which there is a prevalence of mesiodens in male population significantly higher than the female population and conical shape mesiodens are more prevalent of all other shapes. But still in this study, there is no significant p value to prove that male population is more significant which is due to lack of sample size and minimise sampling bias.

4. CONCLUSION

Within the limitation of the study, the age and gender predilection of mesiodens is more common in males than females. The study should be done on a large scale to get baseline data pertaining to age and gender predilection to the south indian population.

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