

Original Research

Evaluation of prevalence of midline diastema among known population

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ABSTRACT

Background: To evaluate the prevalence of midline diastema among the population.

Materials & methods: A total of 200 subjects were enrolled. Out of which 110 were males and 90 were females. The age of patients enrolled in the study was between 15 to 35 years.

Results: Location of midline diastema was also considered showing 91.5% in the maxilla. The highest prevalence was for more than 30 years of age of the patients (46.7%). The prevalence of midline diastema was 35%. There was significantly higher prevalence among the females (44.4%) than the males (27.2%).

Conclusion: The prevalence of midline diastema is more in maxilla and amongst the females as compared to the males.

Introduction:

Facial attractiveness is one of the components that determine overall attractiveness of an individual. Amongst the components of the face; the eyes and the mouth have been found to be the major determinates of its attractiveness. ^(1,2) In the mouth, the teeth; their color, shape and size and arrangement, plays a major role in defining the attractiveness of a smile. A beautiful smile is said to be determined by the overall attractiveness of an individual's teeth. In various cultures, certain aspects of the teeth such as color and arrangements especially in women are factors in determining the level of beauty. ⁽³⁾

Diastema in Greek means interval, gap or space between two or more adjacent teeth. It has been defined as a natural spacing between the central incisors occurring more frequently on the upper teeth. ⁽⁴⁾ Improve facial aesthetics is one of the main reasons why patients are addressing the orthodontist, facial symmetry having a determining importance in facial aesthetics. Face symmetry and midline coordination are essential criteria for achieving harmony and facial balance.

A dental midline diastema is characterized by a space between two central incisors commonly seen in the maxillary arch while rarely in the mandibular arch. ⁽⁵⁾ The diastemas are not witnessed in dentition with tight contacts. ⁽⁶⁾ In a growing child, a midline diastema is also observed in the "ugly duckling" stage, which is part of the development of the dentition. This stage is the transitional phase indicating the space available for the erupting permanent dentition. ⁽⁷⁾ The present study is conducted to evaluate the prevalence of midline diastema among the population.

Materials & methods:

A total of 200 subjects were enrolled. Out of which 110 were males and 90 were females. The age of patients enrolled in the study was between 15 to 35 years. The complete examination including the patient's history, radiographs and photographs were taken. Data was collected and analysed with SPSS software.

Results:

Out of total 200 subjects, 70 had the positive findings. 40 were the females and 30 were the males. The subjects were distributed according to the age groups and gender. Location of midline diastema was also considered

showing 91.5% in the maxilla. The highest prevalence was for more than 30 years of age of the patients (46.7%). The prevalence of midline diastema was 35%. There was significantly higher prevalence among the females (44.4%) than the males (27.2%).

Age (years)	Number Total= 200	%
<15	40	20
15-24	110	55
25-29	35	17.5
>30	15	7.5
Gender		
Male	110	55
Female	90	45

Table 1: Distribution by age and gender

Location	Number	%
Maxilla	64	91.5
Mandible	2	2.9
Both	4	5.6
Total	70	

Table 2: Location of midline diastema

Age	Number Total= 70	%	P- value
<15	15	37.5	<0.001
15-24	38	34.5	
25-29	10	28.5	
>30	7	46.7	
Gender			0.03
Male	30	27.2	
Female	40	44.4	

Table 3: Prevalence of midline diastema

Discussion:

Various methods had have been used for the diagnosis of midline diastema by different authors. All the authors have given priority to clinical records; some of them included radiographs to diagnose midline diastema. ⁽⁸⁾ Some studies used the direct visual method under natural light for the diagnosis, while the other study used the dental aesthetics index. ^(9,10) Some used clinical records and radiographic records, including panoramic and CBCT images; others used only CBCT images and panoramic radiographs for the diagnosis. Clinical records and radiographic records (anterior occlusal radiographs and panoramic radiographs) were used for the diagnosis of midline diastema in the rest of the studies. ⁽¹¹⁾ In our study, Out of total 200 subjects, 70 had the positive findings. 40 were the females and 30 were the males. The subjects were distributed according to the age groups and gender. Location of midline diastema was also considered showing 91.5% in the maxilla.

A study showed orthodontic patients sample of (EX: 1021orthodontic patients (537 males and 484 females) were randomly selected from. The prevalence of midline diastema was 23.2%. located in the maxilla (97%), in mandible (1.3%) and in both was (1.7%). The prevalence of midline diastema differs significantly between the age groups ($p < 0.001$). The highest prevalence (55.8%) was

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among patients aged ≥ 30 years, and it was also high (37.7%) among those aged < 15 years. The prevalence among females (26.4%) was significantly higher than the prevalence (20.3%) among males ($P = 0.020$). The main causes of midline diastema in females was thumb sucking and missing lateral incisors (14.1% and 12.5% respectively) and in males was high labial frenum and super numerally teeth (39.4% and 30.3% respectively). ⁽¹²⁾ In our study, the highest prevalence was for more than 30 years of age of the patients (46.7%). The prevalence of midline diastema was 35%. There was significantly higher prevalence among the females (44.4%) than the males (27.2%).

Another study conducted a study with 1355 newborn children to 6 years of age with complete primary dentition involved in observing labial frenum characteristics and the presence of midline diastema. ⁽¹³⁾ They performed a cross-sectional study using a sample of 138 Brazilian school children of 4 to 5 years of age. ⁽¹⁴⁾ The etiology of midline diastema is multi-factorial, and an appropriate diagnosis and timely management are very crucial. Management of midline diastema includes observation and follow-up, orthodontic treatment, frenectomy, space closure, restorative treatment, and removal of the supernumerary tooth.

Conclusion:

The prevalence of midline diastema is more in maxilla and amongst the females as compared to the males.

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