PREVALENCE OF ANTERIOR CROSSBITE IN KANPUR ORTHODONTIC POPULATION

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Abstract
Aim: To assess the prevalence of anterior cross bite among Kanpur Orthodontic population.
Material &Methods: A retrospective cross sectional study was conducted on using the records (intraoral photographs, study models) of patients visiting the department of Orthodontics & dent facial Orthopedics.
Results:1. In the present retrospective cross sectional study 833 cases were examined. Out of these 833 cases 187 cases had anterior cross bite. Leading to a prevalence of 22.44% out of 187 cases 86 (45.99%) were males & 101 (54.01%) were females.
2. In our study, out of 187 cases,124 (66.31%)cases had unilateral involvement & 63 (33.69%) cases had bilateral involvement.
3. Class I malocclusion highest number of cross bite cases. (57.21%),followed by Class III (33.17%) .Class II had least number of anterior cross bite cases (9.62%).
4. In the present study mandibular displacement (45.23%), tooth wear (2.25%), gingival recession (24.3%), tooth mobility (8.3%) were associated with anterior crossbite.
Conclusion: In this study prevalence of anterior cross bite in Kanpur Orthodontic population was determined. Such epidemiological studies are helpful in arranging preventive & interceptive Orthodontic services for the general population

Introduction

Crossbite is defined as an abnormal relationship of one or more teeth with its corresponding antagonist tooth so that buccolingual and labiolingual relationship of teeth is opposite.[1]Crossbite is one of the most commonly occurring malocclusions.
Crossbite may occur due to dental, skeletal or functional reasons. It may occur in anterior region, posterior region (unilateral or bilateral)
There are many factors leading to the development of crossbite such as heredity,dental arch length,retained deciduous or supernumerary teeth,thumb sucking habit,skeletal anteroposterior abnormality and cleft lip & palate.[2]
Prevalence of crossbite varies from one race to another.Anterior crossbite among American & Japanese were found to be 3% 10% respectivley.Prevalence of crossbite in Caucasians have been found to be more as compared to Asians and Africans.[3,4,5]
The purpose of the present study was to assess the prevalence of anterior crossbite among Kanpur Orthodontic population.

Material &Methods

A retrospective cross sectional study was conducted on using the records (intraoral photographs, study models) of patients visiting the department of Orthodontics & dentofacial Orthopedics.

Patients who had previous Orthodontic treatment,cleft lip/ palate patients and other craniofacial anomalies were excluded from the study.

Results

A total of 833 cases were examined out of which 187 cases had anterior crossbite. As shown in Table (1) out of 187 cases 86 (45.99%) were males & 101 (54.01%) were females.

Table 1. Distribution of type of crossbite among different genders.

Type of crossbite	Male	Female	Total
Anterior crossbite	86 (45.99%)	101 (54.01%)	187 (100%)

Table (2) shows distribution of according to side affected.Out of 187 cases in which anterior crossbite was detected, 124 were unilateral (57 males & 67 females) & 63 cases were bilateral (24 males & 39 females).

Table.2.Distribution of cross bite according to side affected

Side affected	Male	Female	Total
Unilateral	57	67	124
Bilateral	24	39	63

Table (3) shows distribution of crossbite according to malocclusion.Class I malocclusion highest number of crossbite cases.(57.21%),followed by Class III (33.17%) .Class II had least number of anterior crossbite cases (9.62%)

Table 3.Distribution of crossbite according to malocclusion

Malocclusion	Cases with anterior crossbite	%age
Class I	107	57.21
Class II	18	9.62
Class III	62	33.17

Table.4.Association of anterior crossbite with different features

Mandibular displacement	45.23%
Tooth wear	2.25%
Gingival recession	24.3%
Tooth mobility	8.3%

Table.4. shows the association of anterior crossbite with different features.Anterior crossbite was associated with mandibular displacement in 45.23% cases,with tooth wear 2.25% cases,with gingival recession in 24.3% cases and with tooth mobility in 8.3% cases.

Discussion

In the present retrospective cross sectional study 833 cases were examined. Out of these 833 cases 187 cases had anterior crossbite. Leading to a prevalence of 22.44% out of 187 cases 86 (45.99%) were males & 101 (54.01%) were females. These findings were similar to the findings of Vithanaarachchi & Nawarathna[5] who conducted there study in Peradiniya,Srilanka. These findings were also similar to the findings of Cuc &Cuc[6]. There study was based on mixed dentition on Brazilian population.

In our study,out of 187 cases,124 (66.31%)cases had unilateral involvement & 63 (33.69%) cases had bilateral involvement. These findings were similar to the findings of Vithanaarachchi & Nawarathna[5], who in their study showed that 62% cases had unilateral involvement & 38% cases had bilateral involvement. Dacosta & Utomi[7] also found similar findings in their study.

Class I malocclusion highest number of crossbite cases. (57.21%),followed by Class III (33.17%) .Class II had least number of anterior crossbite cases (9.62%).These findings were consistent with the findings of Vithanaarachchi & Nawarathna[5] and also of Dacosta & Utomi[7]. Hosseini et al[8] in their study on 7-10 year old Iranian children found that anterior crossbite and posterior crossbite was highest in class II malocclusion group than any other malocclusion group

In the present study mandibular displacement (45.23%), tooth wear (2.25%), gingival recession (24.3%),tooth mobility (8.3%) were associated with anterior crossbite. These findings were similar to the findings of Vithanaarachchi & Nawarathna[5].

Conclusion

In this study prevalence of anterior crossbite in Kanpur Orthodontic population was determined.Such epidemiological studies are helpful in arranging preventive & interceptive Orthodontic services for the general population.

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