



Distribution of Cross-Bite in A Sample of Iraqi Student in Baghdad City

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Abstract

Cross-bite is one of important numerical anomalies of teeth . So that many studies have been carried out in different parts of world to find the prevalence of cross-bite.

This study was conducted to assess cross-bite in a sample of Iraqi student. Which is essential for planning dental health services? The examination was carried out on 2210 subjects 1080 male and 1130 female, the age rang was (13-17 years) .

The assessment procedures of cross-bit were carried out via intra-oral examination.

The analysis of results showed that

- The total percentage of cross-bite was recorded 18.8% .
- The posterior cross-bite 10.4% while anterior cross-bite 8.5% .
- The percentage of cross-bite in female 20.9% while in male 16.6% .
- The percentage of unilateral cross-bite 7.3% while bilateral cross-bite 3% .

Introduction

Cross-bite also used to describe reverse over jet of one or more incisor teeth .⁽⁵⁾

Kinaan⁽⁶⁾ define cross – bite as (a deviation of one tooth or more from proper bucco-lingual relationship are either anterior or posterior) . Anterior when one or more of the upper incisors or canine occlude lingual to the lower anterior incisor teeth while the posterior when one or more of the upper premolar or molars deviate bucco-lingually greater than half of cusp so that the cusps had passed one another.

When a transverse problem does exist it is much more likely to be relative narrowing of the maxillary arch (lingual cross bite) than buccal cross bite resulting from a relatively wide maxilla ⁽⁷⁾.

According to the Malcolm L. Jones and Richard Goliver etiological

factors of cross – bite may attribute to the following.

1-Skeletal origin: - The maxilla is narrow in relation to the mandible and this reflected in the arch widths.

2-Soft tissue factor: - If swallowing habitually takes place without occlusion of teeth, pressure from cheeks may equalize the widths of the arches. Similarly, with habits such as persistent digit sucking,. Forces from cheeks whilst the teeth are not in occlusion may narrow the maxillary arch, so that unilateral cross bite with mandibular displacement occurs.

3-Pathological factor for example unilateral cleft palate, unilateral condylar Hyperplasia.

Wood,⁽²⁾ reported some suggested etiological factors in cross-bite include , prolonged retention of deciduous

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teeth, crowding , premature loss of deciduous teeth , palatal cleft , thumb sucking , arch deficiencies , the lingual position of permanent bud , the interference of teeth and habit of protrude the mandible (this habit may cause a complete anterior –cross– bite).

Day and foster,⁽⁸⁾ have shown that unilateral cross-bite is significantly associated with class . III skeletal relationship , thumb sucking , adaptive swallowing behavior and the presence of an instanding incisor ⁽⁹⁾ .

Cross-bite can classified in to

I- Anterior cross-bite

a. One tooth cross-bite (In standing upper incisor) .

b. group of teeth cross-bite

1. True class III

2. False class III

II- Posterior cross - bite

a. Unilateral cross-bite and this may be:

1. Unilateral cross-bite with displacement.

2. Unilateral cross-bite without displacement.

III- Bilateral cross – bite.

IV- Anterio - posterior cross –bite.

Unilateral and lingual cross–bite in mixed or primary dentition regarded as an urgent orthodontic treatment due to effect of cross-bite on the growth of jaw at this stage.

Material and Methods

The sample was selected from (8) intermediate and secondary school in different parts of Baghdad city. The sample consist from 2210 student (1130f, 1080 m) the age rang was (13-17 years) we clinically surveyed for this study.

The cross-bite was divided to its position in the dental arch in to anterior and posterior cross bite.

1- Distribution according to the number of teeth affected.

2- According to segment affected.

3- According to the sex.

Results and Discussion:

From table number (1) which represents the distribution of cross – bite according to the number of tooth or teeth affected, we find 5.2% from the sample affect one tooth, 4.9% affect two teeth, 1.7% affects three teeth 1.3% cross bite affect four teeth and 5.7% more than four teeth affected.

The total number of tooth affected 417 with percentage of 18.8%.

Table number (2) represents the distribution of cross-bite according to the position of cross bite.

2.5% affect four incisors teeth

3% affect the upper left incisors

2.5% affect the upper right incisors

3.9% affect the upper left posterior teeth

3.3% affect the upper right posterior teeth

3.% affect the upper left and right posterior teeth

Also from this table we show anterior cross-bite with percentage of 8.5% and 10.4% cross bite for posterior teeth. This results is the same as result of Almulla and Al. Bashir⁽¹⁰⁾ they found posterior cross-bite 10.4% and 8.2% Anterior cross bite . While Batayine⁽¹¹⁾ found the anterior cross bite 4.7% and posterior cross - bite 8.16% . Also from table number 2 we found unilateral cross-bite 7.3% while bilateral cross-bite 3%.

Foster and Day⁽¹²⁾ found unilateral cross-bite 9% while Bilateral cross-bite 4.1%. Ingervall⁽¹³⁾ found unilateral cross-bite 13.6% and bilateral cross-bite 5.3% . Al-Dailami⁽⁴⁾ found unilateral cross-bite 5.5% and bilateral cross bite 1% .

Table number (3) represents the distribution of cross-bite according to the sex. From this table found 4.8% one tooth cross bite for male while

5.6% one tooth cross-bite for female.

4.4% two teeth cross bite for male and 5.5% two teeth cross-bite for female.

1.5% three teeth cross-bite for male while 1.8% three teeth cross bite for female.

1.6% four teeth cross bite for male and 1.5 four teeth cross bite for female.

4.6% more than four teeth cross-bite for male and 6.7% cross-bite for female.

Total cross bite for male 16.6 while 20.9% cross bite for female.

Helm⁽¹⁴⁾ found 9.4% for male and 14% cross-bite for female. Kutin and Hawes⁽¹⁵⁾ found cross-bite in male

8.8% and 7.8% cross bite for female. lavelle⁽¹⁶⁾ found cross-bite in male 13.6% and 23% cross-bite for female.

Conclusion

From this survey we note the following:

- 1-The total percentage of cross-bite 18.8%.
- 2-Posterior cross-bite represent 10.4% while Anterior Cross bite represent 8.5%.
- 3-The number of females affected with cross bite which represent 20.9% is more than male which represent 16.6%.
- 4-In female cross bite of more than 4 teeth is more than one and two teeth while in male cross bite of one , two and more than 4 teeth is nearly equal .

الخلاصة :-

الأطباق العكسي يعتبر من المواضيع المهمة لأن له تأثير مباشر على الناحية الجمالية والوظيفية للأسنان ، لهذه الأسباب ظهرت العديد من الدراسات حول موضوع الأطباق العكسي لما لهذه الخاصية من أهمية من التخطيط لخدمات صحة اللقم والأسنان .

أجريت هذه الدراسة على عينة من طلبة المدارس المتوسطة والثانوية من مناطق مختلفة من بغداد وكانت العينة مؤلفة من (٢٢١٠) طالب وطالبة (١١٣٠ طالبة) و (١٠٨٠ طالب) وأعمارهم ما بين ١٣-١٧ سنة تم الفحص السريري للطلبة في مدارسهم وبعد تحليل البيانات اتضحت النتائج التالية :-

- نسبة الأطباق العكسي للعينة كانت ١٨,٨ % .
- نسبة الأطباق العكسي للأسنان الخلفية ١٠,٤ % .
- نسبة الأطباق العكسي للأسنان الأمامية ٨,٥ % .
- نسبة الأطباق العكسي من الإناث ٢٠,٩ % .
- نسبة الأطباق العكسي من الذكور ١٦,٦ % .
- نسبة الأطباق العكسي في جانب واحد من الفك ٧,٣ % .
- نسبة الأطباق العكسي من جانبي الفك ٣ % .

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Table No (1): Distribution of cross bite According to the number of teeth affected

Total Sample	One tooth	Two teeth	Three teeth	Four teeth	More than four teeth
2210	115	110	37	29	126
percent age	5.2%	4.9%	1.7%	1.3%	5.7%

Total Number of affected teeth 417 with percentage of 18.8%

Table No (2) : distribution of cross bite According to position of cross bite

Anterior cross bite			Posterior cross bite		
All incisors			Unilateral		Bilateral
	Left	Right	Left	Right	
55	68	65	86	75	68
2.5 %	3 %	2.5 %	3.9 %	3.3 %	3 %
	188		229		
	8.5 %		10.4 %		

Unilateral cross bite 161 with percentage of 7.3% while bilateral cross bite 3%

Table No (3) : Distribution of cross bite According to sex

Sample	Male					Sample	Female				
	One tooth	Two teeth	Three teeth	Four teeth	More than four teeth		One tooth	Two teeth	Three teeth	Four teeth	More than four teeth
1080	52 4.8 %	48 4.4 %	17 1.5 %	13 1.6 %	50 4.6 %	1130	63 5.6 %	62 5.5%	20 1.8%	16 1.5%	76 6.7%
			Total 180 16.6%						Total 237 20.9%		