PREVALENCE OF CROSSBITE IN ORTHODONTIC PATIENTS

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ABSTRACT

The objective of the present study was to evaluate the prevalence of cross bite in patients reporting for orthodontic treatment. Pretreatment study casts of 100 patients were selected from the model store of the Orthodontics Department, Faculty of Dentistry, The University of Lahore. SPSS (10.0) was used to analyze the data. 24% of the patients had cross bite. Of these 25 % were male patients while 75% were female patients.

Key words: *Prevalence, orthodontic patients, malocclusion, cross bite*

INTRODUCTION

Posterior crossbite is one of the most prevalent malocclusion in the primary and early mixed dentition and is reported to occur in 7.7% to 22% of the cases[1,2,3,4,5]. It is defined as any abnormal buccal-lingual relation between opposing molars, premolars, or both in centric occlusion[4]. The etiology of posterior crossbite can include any combination of skeletal, dental and neuromuscular functional components[1] and may also include prolonged retention or premature loss of deciduous teeth, crowding, palatal cleft, genetic control, arch deficiencies, abnormalities in tooth anatomy or eruption sequence, oral digit habits, oral respiration during critical growth periods, malfunctioning temporomandibular joints.[1, 2, 3, 6, 7].

Status of the primary occlusion affects development of the permanent occlusion. Thus, a posterior crossbite is believed to be transferred from primary to permanent dentition, and the posterior crossbite can have long term effects on growth and development of teeth and jaws[1,2,3]. In most cases crossbite is accompanied by a mandibular shift, which causes midline deviation[1, 2, 3, 8, 9, 10]. This may place strain on orofacial structures, causing adverse effects on temporomandibular joints and the masticatory system[2].

Accurate information on prevalence of crossbite may be needed when planning of orthodontic services is involved. Considering the significance of crossbite in orthodontic treatment planning, importance of accurately determining crossbite status cannot be underestimated.

METHODOLOGY

A total of 100 pretreatment study casts of patients reporting to the Orthodontics Department, Faculty of Dentistry, The University of Lahore were consecutively selected irrespective of gender. Only undamaged, acceptable quality study casts were included in the study.

Cases having previous orthodontic treatment, anterior crossbite/ Angle class III, cleft lip/ palate or other craniofacial syndromes [2, 3] and cases having supernumerary teeth or peg shaped lateral incisors were excluded from the study [11]. Posterior crossbite was defined as a minimum of two teeth in unilateral or bilateral posterior lingual crossbite[3].

Evaluation of selected 100 sets of study casts were done to evaluate crossbite according to the above mentioned definition.

For intraexaminer reliability, 40 sets of study casts were randomly selected from the main sample and were reassessed 30 days after the initial assessment. SPSS (8.0) was used to analyze the data statistically.

RESULTS

The chronological age range of the sample was 6-24 years, with a mean age of 13.9 years (S.D 4.4). Sex

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distribution of the sample is shown in Table 1. The mean age of male patients was 13.5 years and the mean age of female patients was 14.1 years. Distribution of the sample according to their ages, along with their further division into male and female groups is shown in Table 2.

It is clear from Table 3 that 24% of the patients had crossbite. Table 3 also shows that out of 38 male patients, 6 patients (16%) had crossbite, and out of 62 female patients, 18 patients (29 %) showed crossbite

TABLE 1: SEX DISTRIBUTION OF THE SAMPLE

	Frequency	Percent
Male	38	38.0
Female	62	62.0
Total	100	100.0

TABLE 2: AGE DISTRIBUTION OF THE SUBJECTS

		Gender		
		Male	Female	Total
Age in groups	6.00	2	2	4
	7.00		4	4
	8.00	3	2	5
	9.00	3	3	6
	10.00	1	4	5
	11.00	6	3	9
	12.00	4	6	10
	13.00	1	5	6
	14.00	3	4	7
	15.00	2	3	5
	16.00	1	6	7
	17.00	2	3	5
	18.00	6	3	9
	19.00	1	6	7
	20.00	2	4	7
	21.00		1	1
	22.00		2	2
	23.00		1	1
	24.00	1		1
Total		38	62	100

TABLE 3: PREVALENCE OF CROSSBITE

Gender	Normal	Crossbite	Total
Male	32	6	38
Female	44	18	62
Total	76	24	100

DISCUSSION

Considering the impact of transverse dimensions on orthodontic treatment planning, this study was conducted to determine the prevalence of crossbite in a sample of orthodontic patients.

The study was conducted at Orthodontics Department, Faculty Dentistry, The University of Lahore on study casts of patients present in orthodontics department. The number of female patients (62%) compared to the male patients (38%) indicate orthodontic awareness and concerns among female patients. This is similar to the trend found by other studies done elsewhere[12].

It is clear from Table 3 that 24% of patients had crossbite. Of these, 6 were male (25 %), and 18 (75 %) were female patients. This shows greater prevalence of crossbite in female patients. This could be due to the greater number of females in our sample. Similarly if we look into the prevalence of cross bite in both male and female groups, prevalence is higher in female group with 29% of female having cross bite. Prevalence of cross bite in male patients group was 16%.

Keeping in view the small sample size of our study, its findings may serve as a reference for planning orthodontic services in Pakistan.

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