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Type of Deepbite in Orthodontic Treated Patients

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Abstract: Deep bite is a common malocclusion that can occur in both children and adults. It is defined as an excessive vertical overlap of the upper teeth on the labial surface of the lower teeth when the teeth are in centric occlusion. Deep bite can be classified according to its origin (dental or skeletal), function (true or pseudo), and extent (incomplete or complete). The aetiological factors of deep bite include inherent factors (tooth morphology, skeletal pattern, and malocclusion) and acquired factors (muscular habit, change in tooth position, loss of posterior supporting tooth, and lateral tongue thrusting habit). Deep bite is more common in some racial groupings than others, and it is associated with compromising periodontal health of maxillary anteriors and the palatal tissue. This study found that 58% of orthodontic patients had deep bite, and 71% of those had incomplete deep bite. Females were more likely to have deep bite than males.

Keywords: Orthodontics, Deep Bite, Orthodontic treatment

Introduction: Deep bite is one of the most common and most deleterious malocclusion seen in children as well as adults that can occur along with other associated malocclusions[1]. Deepbite is one of the frequently seen malocclusion next to crowding. An unfavorable sequelae of this malocclusion predisposes a patient to periodontal involvement. Abnormal function, improper mastication, excessive stresses, trauma, functional problems, bruxism, clenching and temporomandibular joint disturbance are the sequalae of deep bite.

Deep bite is defined as "vertical overlap of upper teeth on the labial surface of lower teeth in centric occlusion when it exceeds the normal range of 1-2mm."[2]

Deep bite classified according to their origin as dental deep bite and skeletal deep bite, according to their function it can be classified as true deep bite and pseudo deep bite. And depending on the extent of deep bite it can be incomplete deep bite and complete deep bite.

The aetiological factors of deep bite are the inherent factors like tooth morphology, skeletal pattern and malocclusion, condylar growth pattern and acquired factors like muscular habit, change in tooth position, the loss of posterior supporting tooth and lateral tongue thrusting habit.[3]

Deep bite is a frequently seen problem specially patients with Class II malocclusion[4]. A large cross-sectional study in United States reported that 15%-20% of the population had overbite >5mm, depending on the age range of interest[5]. Severe deep bites are more common in some racial groupings than others. For instance, compared to African Americans and Hispanic Americans, Caucasian Americans experience it nearly twice as often.[6]

The prevelance of deep bite is more day by day and that also is associated with compromising periodontal health of maxillary anterriors and the palatal tissue. So aim of this present study is to identify the type of deepbite in orthodontic patients in a Hospital based setup in Bhubaneswar City, Odisha, India.

Material and methods: This Retrospective study has been conducted on pre treatment study models like cephalogram, study cast and extraoral radiographs of 220 patient who attending and seeking orthodontic treatment in a hospital based setup in

bhubaneswar city Odisha, India from 01/02/2023 till 01/08/2023. All patient with permanent dentition has been included. Out of which 34 patients were excluded due to prosthesis and previously orthodontic treated patient.

For the evaluation of deep bite we used the study models and differentiate the type and severity of deep bite.

Results: The age range of the sample was 15-35 yrs, with a mean age of 22.48. fifty eight percent(58%) of the sample were females(108 patients) and fourty one point nine percent (41.9%)were males (78 patients). As per the obeservation from table 1, incomplete deep bite were found in 132 patients (71%) out of 186 patients and 54 patients (29%) out of 186 patients had complete deep bite.

OVERBITE SEVERITY	NUMBER OF SUBJECTS		TOTAL (%)
	MALE (%)	FEMALE (%)	
INCOMPLETE DEEP-BITE	60 (45%)	72 (55%)	132 (71%)
COMPLETE DEEP-BITE	24 (44%)	30 (56%)	54 (29%)
TOTAL	**84 (45%)**	**102 (54%)**	**186 (100%)**

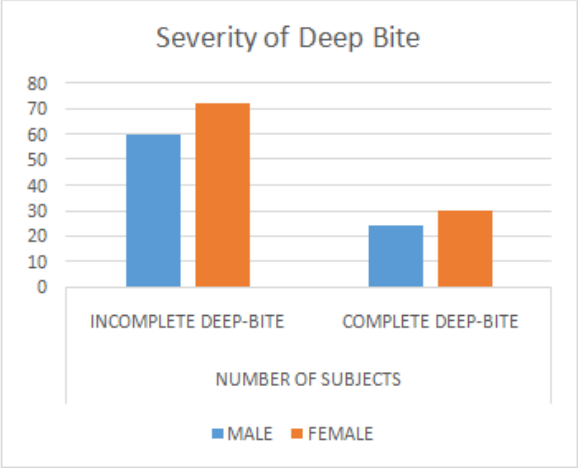

Table 1: Severity of Deep Bite

As far as the type of deep bite in orthodontic treated patient is concerned, it is evident from table 2, that out of 186 patients 138 of them were having dental deep bite (74.19%), and skeletal deep bite was shown by 48 patients (25.80%), 96 (65.21%) were having true deep bite. No pseudo deep bite patients had been reported.

TYPE OF DEEP BITE	PRESENT	PERCENTAGE
DENTAL DEEP BITE	138	74.19%
SKELETAL DEEP BITE	48	25.80%
TRUE DEEP BITE	96	52%
PSEUDO DEEP BITE	0	0%
TOTAL	186	100%

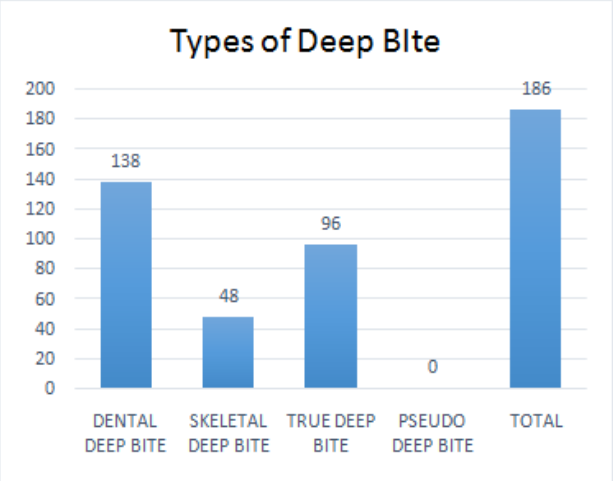

Table 2: Types of Deep Bite

Discussion: This study was performed on study models like study casts, cephalogram, and extra-oral photographs of patients attending and seeking orthodontic treatment at a hospital based setup in bhubaneswar city, Odisha, India. The subjects were not taken from the general population. Patients seeking orthodontic treatment were of both sexes; including preadolescents, adolescents and adults.

The mean age of the studied sample was 22.4 years, this goes in accordance with the finding of the study done by Abuelazayem et al [7] with a mean age of 19.7 years. 108 patients out 186 sample were female (58%) and 78 patients were male (42%) this will show that females were more concerned about their aesthetics than males, this is in agreement with finding of some studies [7],[8].

Out of 186 total sample dental deep bite were 138 (74.19%), skeletal deep bite were 48 (25.80%) and 96 (65.21%) patients were having true deep bite. Out of 186 samples 108 (58%) were female and 78 (41.9%) were male. Regarding the severity of deep bite, out of 186 samples the majority 132 (71%) showed incomplete deep bite and 54 (29%) sample were showed complete deep bite.

Conclusion:

1. Almost 60% of the orthodontic patients were females.
2. More than 70% of the sample were having incomplete deep bite.
3. Deep bite is more common in females (59%) than males (41%).

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