ANTERIOR CROSS BITE in primary and mixed dentition
INTRODUCTION

• DEFINITION

According to Graber:

Cross bite is a condition where one or more teeth may be abnormally malposed buccally or lingually or labially with reference to opposing teeth.
Etiology of anterior cross bite in primary and mixed dentition
classification Based on the Etiologic Factor

ANTERIOR Cross bite
  - Dental Cross bite
  - Skeletal Cross bite
  - Functional Cross bite
Causes of anterior cross bite

- Dental causes
- Skeletal causes
- Causes of Functional cross bite
Dental causes

1. Traumatic injury to primary dentition causes lingual displacement of permanent tooth bud
   - Persistence of a deciduous tooth
     - Palatal deflection of its erupting successor
       - Single tooth anterior cross bite.
2. supernumerary tooth.
3. Habit of biting upper lip.
4. Cleft lip repair cases.
5. Arch length inadequacy.

Causing lingual deflection of permanent tooth during eruption.
Skeletal causes

1. Genetic.
2. Due to deficient anterior growth of maxilla.
3. Excessive abnormal mandibular growth in anterior region.
4. Combination of both 2 and 3.
Causes of functional cross bite

1. Habitual forward positioning of the mandible to obtain maximum intercuspation may lead to an anterior cross bite.

2. Pseudo class III.
1. Anterior cross bite due to maxillary retrognathism.

2. Anterior cross bite due to mandibular prognathism.

3. Anterior cross bite due to maxillary retrognathism and mandibular prognathism.
Types of anterior cross bite

- Ectopic incisors
- Skeletal class III malocclusion
- Pseudo class III malocclusion
Ectopic incisors

# An incisor may erupt ectopically either palatally in the maxilla or labially in the mandible to a cross bite relationship in centric occlusion. This may occur in the child with a balanced skeletal relationship.

# Early treatment is only necessary, if there is a deviation on opening and or closing or if there is a traumatic occlusion or periodontal concern.
# An anterior cross bite may be associated with a skeletal class III discrepancy such that, although the incisors are positioned correctly within the alveolar ridges, they are in negative overjet on closing into centric occlusion with no deviation of mandibular closure.
# This pattern occurs where there is a habitual mandibular closure pattern such that the mandible goes into a protrusive bite and thus cross bite of incisors avoiding traumatic occlusion with lingual position of one or more maxillary incisors. Thus anterior shift of the mandible can affect the growth of both the maxilla and the mandible with undesirable muscle adaptation.
Single tooth anterior cross bite

Segmental anterior cross bite
Management of anterior cross bite in primary and mixed dentition
IN PRIMARY DENTITION

Elimination of the factors that may lead to the anterior cross bite

E.g.

- Removal of occlusal prematurities.

- Extraction of supernumerary tooth, before they cause displacement of other tooth.

- Habit breaking appliance.
II] IN MIXED DENTITION:

(In pre-adolescent age group)

Anterior cross bite should be treated at an early stage.

Because

1. If a cross bite present in the deciduous dentition, it may manifest in the mixed & permanent dentition as well.
2. If simple anterior cross bite is not treated in early stage it may progress into skeletal malocclusion that later needs complicated orthodontic or surgical treatments.
Indications

- Used when a cross bite is seen at the time the permanent teeth are making an appearance in the oral cavity.
- It is placed inside the mouth contacting the palatal aspect of the maxillary teeth.

Upon slight closure of jaw the opposing side of the stick come in contact with the labial aspect of the opposing mandibular tooth acts as a fulcrum.

This is continued for 1–2 hours for about 2 weeks.
Drawbacks of using tongue blade

- Only effective till the clinical crown not completely erupted in the oral cavity.
- Used only if sufficient space is available for the correction.
- Patients cooperation is required.
Catlan’s appliance or lower anterior inclined plane

Indications

- Used only in those cases where the cross bite is due to a palataly placed max incisors. 
(constructed at 45 degree angulations on the lower anterior teeth by acrylic or cast metal).
Disadvantages of Catlan's Appliance

1) Difficulty in speech & chewing

2) Patient cooperation required

3) Require frequent recementation

4) Catlance appliance also as a anterior bite plane
   Prevent the posterior teeth from coming into contact
   If prolonged use,
   Supra eruption of posterior teeth
   causes Anterior open bite.

5) Can not be given if Mandibular incisors are malaligned
   and are periodontally compromised.
Indication

Used when anterior cross bite involving 1 or 2 max. anterior teeth.

Disadvantage

Effective only when there is enough space for aligning the teeth.

Pre-treatment

During treatment

Post-treatment
(4) Screw appliance

**Micro screw**
- Used on individual tooth
- Multiple micro screw can be used to correct individual tooth in segmental cross bite

**Mini screw**
- Capable of moving up to 2 teeth
Medium screw
Used to correct segmental cross bite

3-D screw
(3-dimensional screw)
Capable of correcting posterior as well as anterior cross bite
**Indications**

Used to correct skeletal anterior cross bite (Anterior cross bite due to actual skeletal deficiency of the maxilla)

Protraction face mask or Reverse head gear

If maxilla is narrow

RME screw also used for transverse expansion.
[6] Chin cap appliance

- Used to correct or prevent the anterior cross bite due to a prominent mandible.
- Chin cap appliance rotate mandible backward and downward.
Frankel III appliance used to correct skeletal class III Malocclusion.
As the incidence of cross bite in primary & mixed dentition increases patients having functional & esthetic problems are becoming more common in dental practice.

These patients require special attention with regard to functional & cosmetic problems in the primary stage because if they are ignored, later they may require more complicated treatment.

In addition to good oral health promotion there is increased need for collaboration between dental & cosmetic professionals to provide safe and appropriate dental care for these patients.
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