

Management of Cross Bite

BY

Dr. Pratibha Sharma

Index

- Defination.
- Classifiction
- Etiology
- Anterior Cross Bite
- Posterior Cross Bite
- Skeletal Cross Bite
- Dental Cross Bite
- Functional Cross Bite
- Treatment

Definition

According to Graber, *Crossbite is a condition where one or more teeth maybe abnormally malposed buccally or lingually or labially with reference to the opposing tooth or teeth.*

Classification

Based on location -

a) Anterior cross bite :

Single tooth
Segmental

b) Posterior cross bite :

Unilateral
Bilateral

Based on nature -

a) Skeletal cross bite

b) Dental cross bite

c) Functional cross bite

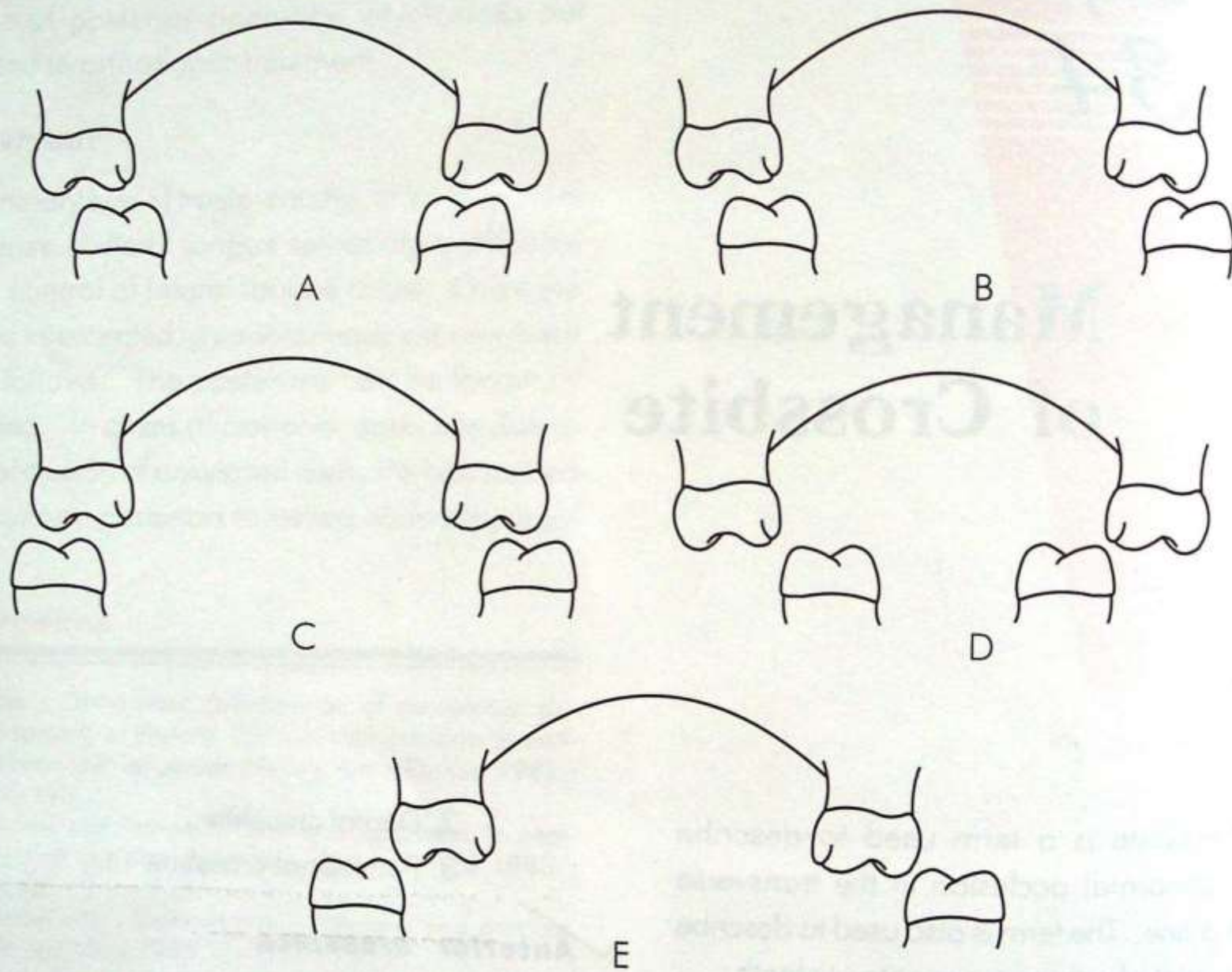


Fig. 1. Crossbite.

Etiology of Cross Bite

- Persistence of permanent tooth – single tooth cross bite.
- Crowding and abnormal displacement of one or more teeth – dental cross bite.
- Presence of habits such as thumb sucking and mouth breathing can cause lower tongue position – posterior cross bite.
- Retarded development of maxilla in sagittal as well as transverse direction – anterior or posterior cross bite.

- Narrow upper arch resulting from decreased growth stimulation in the midpalatal suture.
- Collapse of maxillary arch as seen in congenital defects such as clefts of the palate.
- Sagittal discrepancies of the jaw such as a forwardly placed mandible.
- Unilateral hypo or hyper plastic growth of any of the jaws can cause cross bite.

Anterior Cross Bite

- Malocclusion resulting from the lingual position of the maxillary anterior teeth in relationship with the mandibular anterior teeth.
- Characterized by reverse over jet
- May involve a single tooth or an entire segment of the arch.

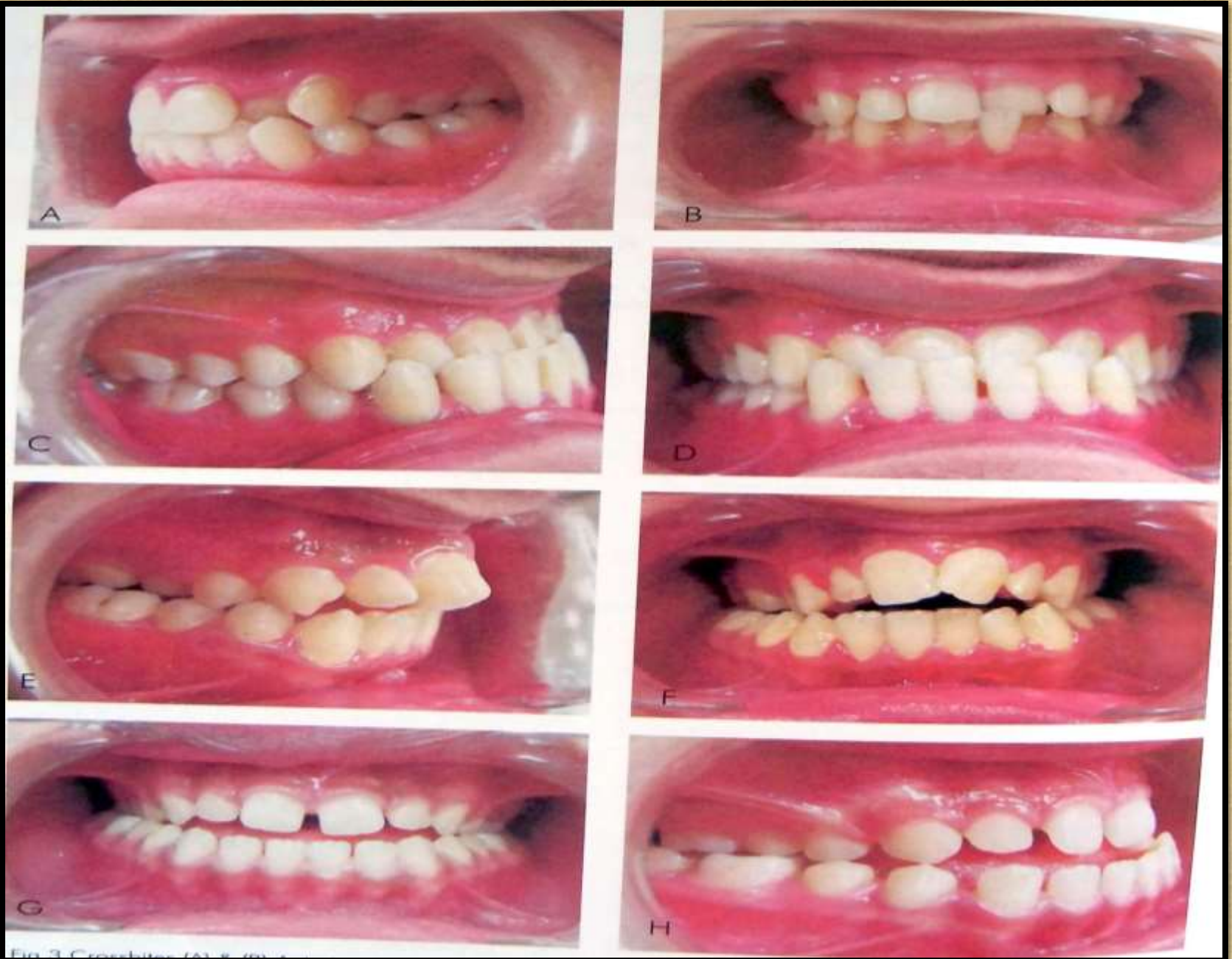


Fig. 3. Crossbite. (A) & (B).

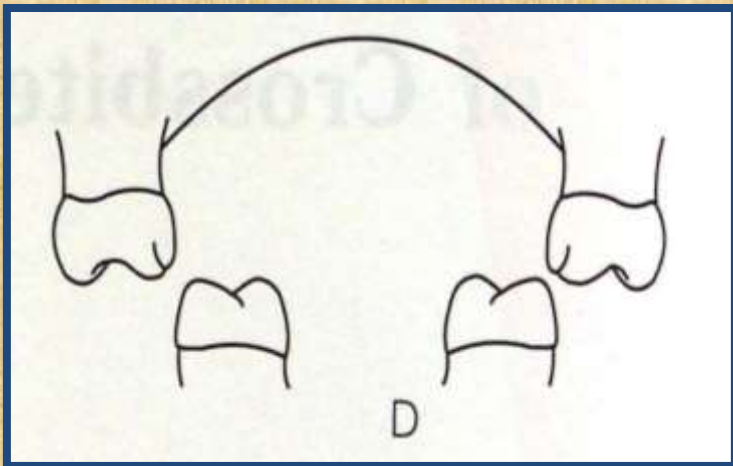
Posterior Cross Bite

- Characterized by abnormal transverse relationship between the upper and lower posterior teeth.
- In this, instead of the mandibular buccal cusp occluding in the central fossae of the maxillary posterior teeth, they occlude buccal to the maxillary buccal cusps.
- Can be unilateral or bilateral

Posterior cross bite

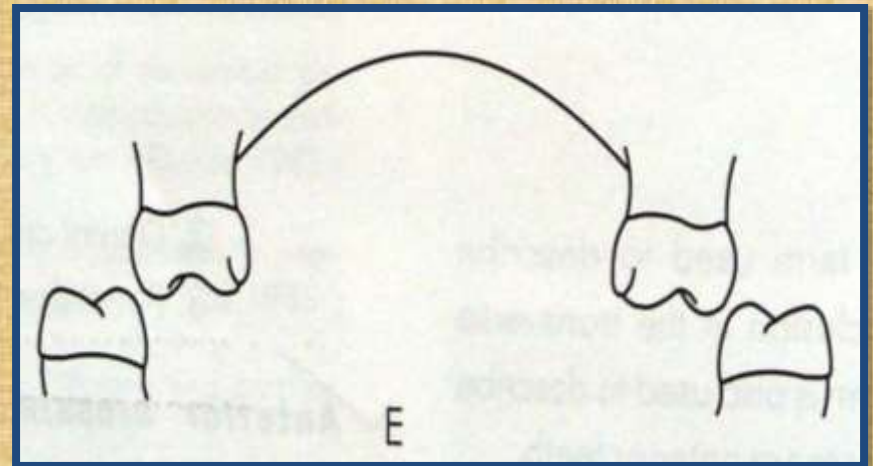
Buccal non occlusion

-maxillary posteriors occlude entirely on the buccal aspect of the mandibular posteriors.



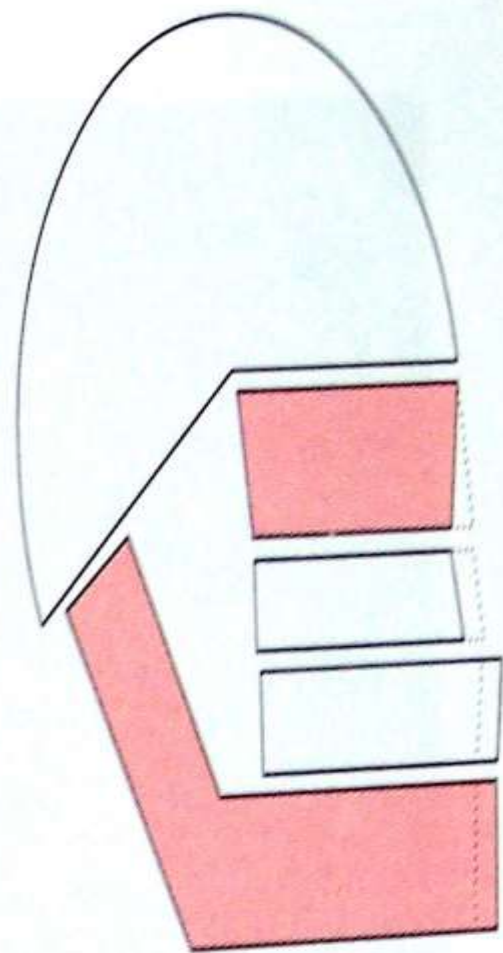
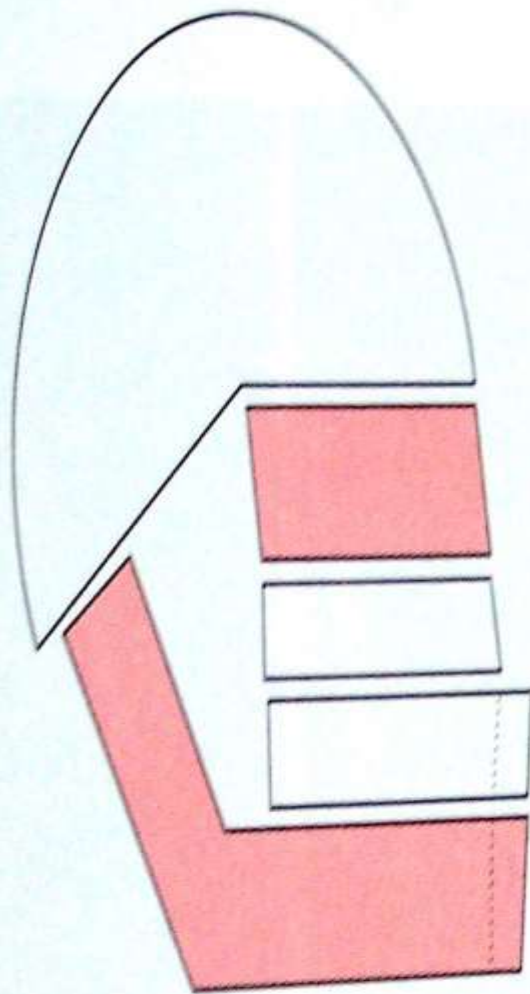
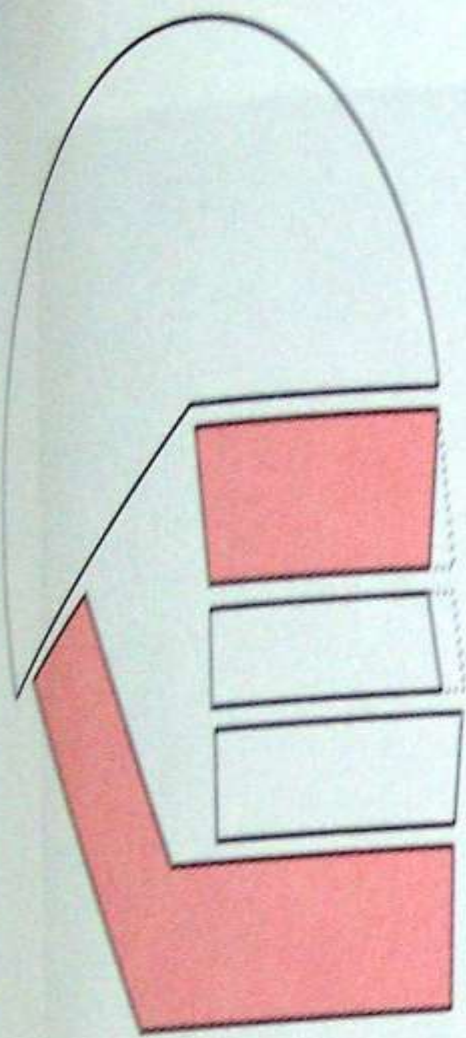
Lingual non occlusion

- maxillary posteriors occlude entirely on the lingual aspect of the mandibular posteriors.



Skeletal Cross Bite

- Occur as a result of malposition or malformation of the jaws.
- Usually inherited or result from defective embryological development.
- Occur also as a result of excessive mandibular growth.
- Skeletal posterior cross bite are usually characterized by a narrow upper arch.



A

B

C

Dental Cross Bite

Localized condition where one or more teeth are abnormally related to that of the opposing arch.

A no. of factors maybe responsible –

- a) Lingual eruption path of the maxillary anteriors
- b) Trauma to the deciduous dentition
- c) Delayed eruption of the deciduous dentition
- d) Supernumerary teeth
- e) Tooth material – arch length discrepancies

Functional Cross Bite

- Presence of occlusal interferences can result in deviation of mandible during jaw closure, resulting in unilateral posterior cross bite.
- Habitual forward positioning of the mandible (pseudo Class III) may lead to an anterior cross bite.

Treatment

Anterior
Cross Bite



Posterior
Cross Bite

Treatment of Anterior Cross Bite

Tongue Blade



Double
Cantilever Spring



Catlan's
appliance

Tongue Blades

Developing cross bites recognized early can be successfully by this form of therapy.

Used in case there is sufficient space for the tooth to be brought out.

The tongue blade, resembling an ice cream stick is placed inside the mouth contacting the palatal aspect of the mouth and is made to rest on the mandibular tooth in crossbite that acts as a fulcrum. The pt is then asked to rotate the oral part of the blade upwards and forward.

This is done for 1-2 hrs for 2 weeks.

Catlan's appliance

- ***Also known as Lower Anterior Inclined Plane.***
- ***They are constructed on the lower anterior teeth to treat the maxillary teeth in cross bite.***
- ***The inclined plane is designed to have a 45° angulation, which forces the maxillary teeth in crossbite to a more labial position.***
- ***Indicated when adequate space exists in the arch for the alignment of the palatally displaced teeth.***

The Catlan's appliance has a no. of disadvantages –

- I. The pt encounters problems in speech during therapy.
- II. The pt has to put up with dietary restrictions.
- III. If the appliance is used for more than 6 weeks it can result in anterior open bite. Due to the supra eruption of the posteriors.
- IV. The appliance may need frequent recementations.

Double Cantilever Spring

- Used to treat one or more maxillary teeth in cross bite.
- Used when there is adequate space for labialization of teeth.
- In case of deep overbite, the spring should be given with a posterior bite plane to help in jumping the bite.

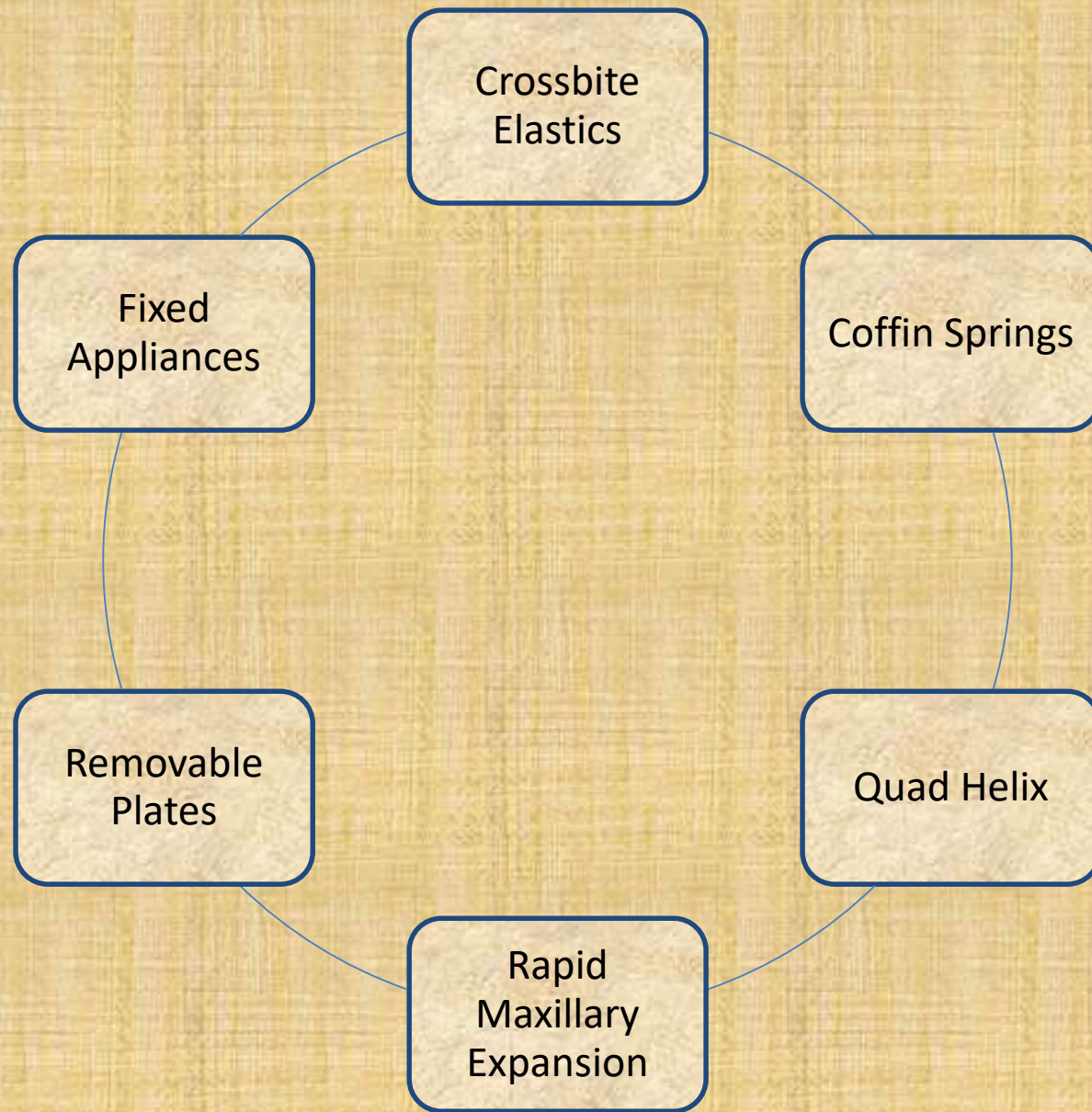
Treatment of skeletal anterior cross bite during growth period

- Skeletal anterior cross bite that occurs as a result of a retro positioned maxilla should be treated before termination of growth by using a protraction mask.
- Excessive mandibular growth leading to skeletal anterior cross bites should be intercepted by the use of chin cap.

Fixed appliance for treatment of anterior cross bite

- Dental anterior cross bite involving one or more teeth can be treated with fixed appliance using multi looped arch wires.

Treatment of Posterior Cross Bite



Crossbite Elastics

- Single tooth cross bite involving the molars are treated using elastics that are stretched between maxillary palatal surface and mandibular buccal surface.
- Indicated only if sufficient space exists.
- These elastics are to be worn day and night.
- Treatment should not be continued for more than six weeks as it extrudes the teeth.

Coffin Spring

- Removable appliance that consists of an omega shaped wire placed in the mid palatal region.
- Brings about dento-alveolar expansion.

Quad Helix

It is a spring that consists of 4 helices.
It is capable of dento-alveolar expansion
of the posterior region.
It brings about skeletal expansion in
young patients.

Rapid Maxillary Expansion

- Bilateral skeletal cross bite characterized by deep palate, nasal obstruction and narrow maxilla can be treated by rapid maxillary expansion.
- In this, the mid palatal suture is split.
- It is done using appliances that incorporate screws that are to be activated at regular intervals.

Removable Plates

- Used to treat unilateral crossbites.
- The appliance consists of a split acrylic plate, a jack screw and a Adam's clasps in which a labial bow can also be incorporated.

Fixed appliance

- Also used to treat Unilateral Cross Bites.
- Asymmetrically expanded archwires can bring about correction of cross bite.

Thank you....