

In the name of GOD



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When we need early treatment?

1. Shifts on closure
2. The constriction is severe enough to significantly reduce space
(1 mm increase in inter premolar width : 0.7 mm increase in arch perimeter)

If comprehensive orthodontics will be needed later,
Treatment can be deferred



Origin of crossbite

1.Skeletal crossbite

2.Dental crossbite

- 1.affect on some of the teeth
- 2.less severe than skeletal crossbite
- 3.occlusal interferences and shift on closure often are present

Treatment is the same in early mixed dentition

Posterior cross bite may related to skeletal maxillary retrusion or mandibular protrusion



Distinction of origin

Full cusp bilateral posterior crossbite has skeletal component

Unilateral posterior crossbite



Displaced teeth

Maxillary & mandibular asymmetry

Advantage of early correction of dental crossbite

1. Eliminate functional shifts
2. Eliminate wear on the erupted permanent teeth
3. Eliminate dentoalveolar asymmetry
4. Increases arch circumference
5. Relapse into crossbite is unlikely
6. Eliminating from the list

Basic approaches to treatment of moderate posterior crossbite

1. Equilibration to eliminate mandibular shift
2. Repositioning of individual teeth
3. Expansion of a constricted maxilla

Equilibration

Interference caused by primary canine



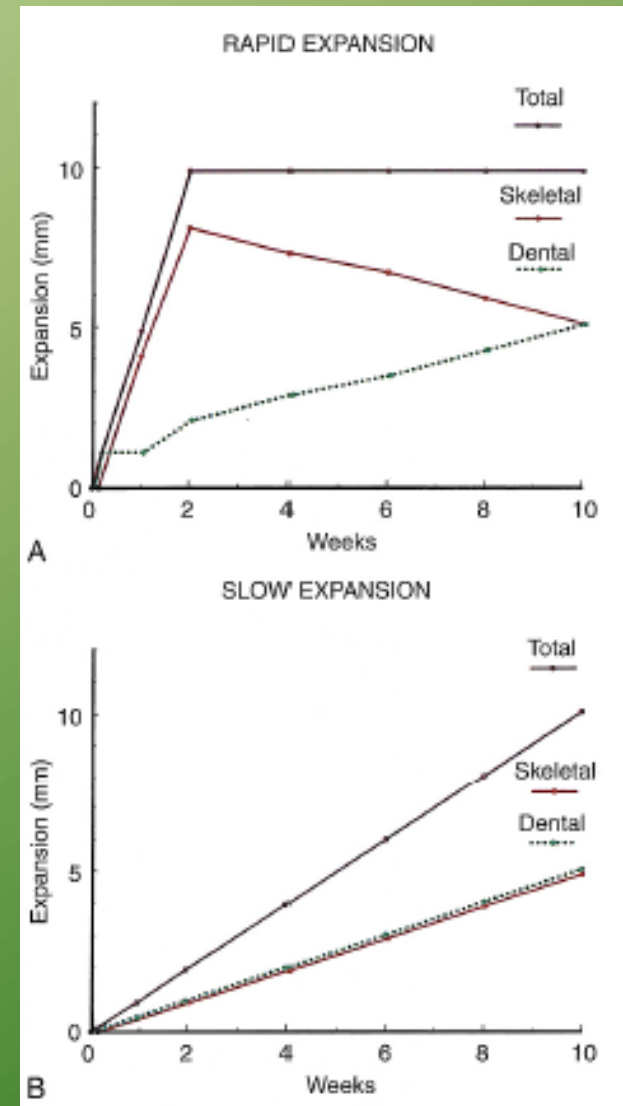
When should we deferred expansion in primary dentition?

When first molars are expected to erupt in less than 6 month

Rapid vs Slow expansion

Rapid palatal expansion : 0.5 to 1 mm /day

Slow palatal expansion : 1 mm /week

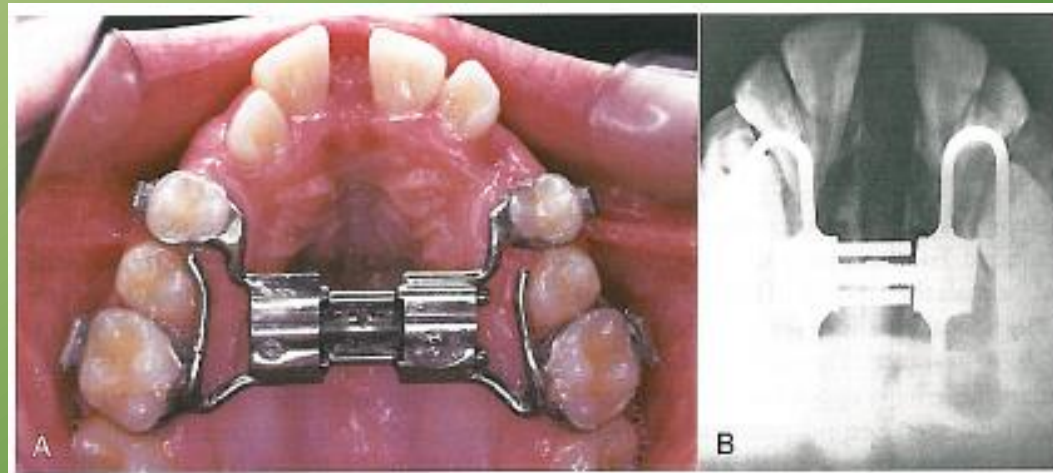


Appliances

Child up to 10 :All device can separate midpalatal suture and move the molar teeth

Adolescent :rigid jackscrew device to separate midpalatal suture

Maxilla opens as a hinge at the base of nose and more anteriorly than posteriorly



Force to open the midpalatal suture

Heavy force in early treatment —————> distortion of the nose

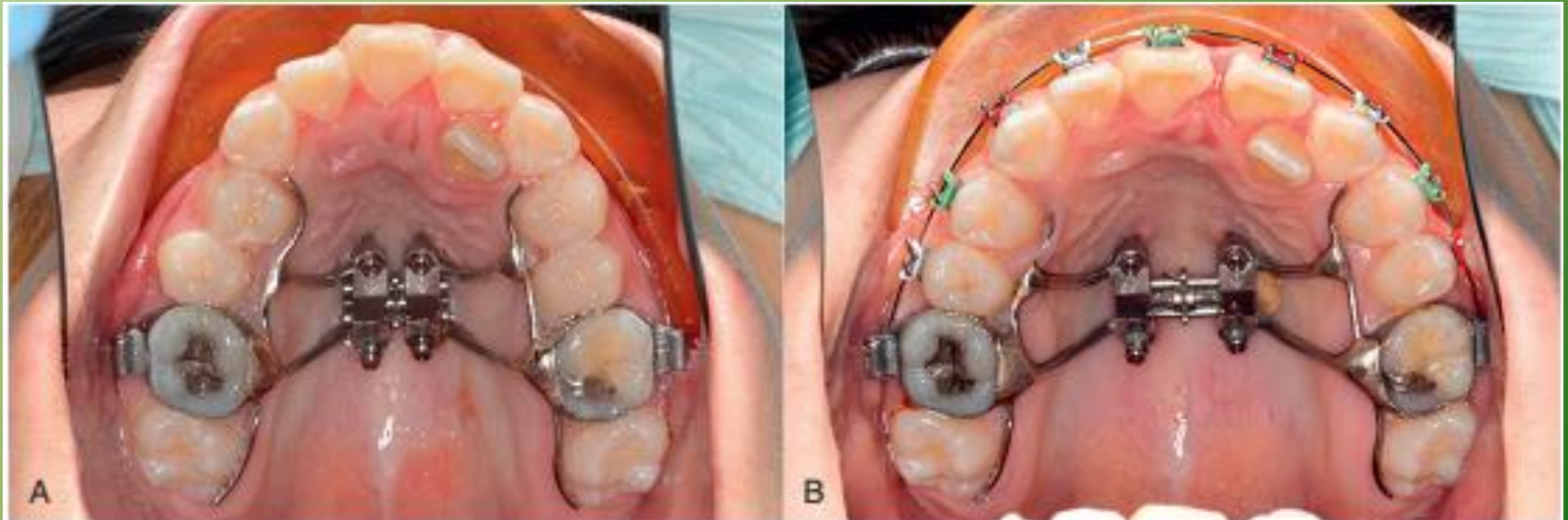


Appliances

Older adolescent :implant supported expansion

The goal is not heavy force as to apply force against the bone

Bone screws in the palate



Appliances

1. Split plate type of removable appliance

Compliance for success
Treatment time is longer
More costly than lingual arch



2. Adjustable Lingual arch (preferred appliance)

Appliances

3.W-arch

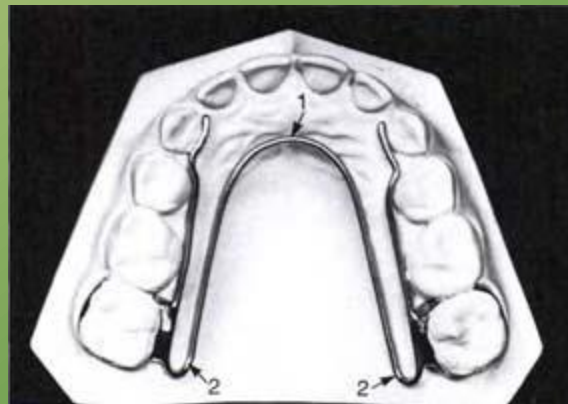
36 mil steel wire

Active by opening the apices of the W

Active to more anterior or posterior expansion

4-6 mm opening to delivers proper force level

Teeth and maxilla often move more on one side than other



Appliances

4. Quad helix

1. More flexible version of W arch
2. Helices in the anterior plate are bulky
can be as reminder to aid in stopping a finger habit
3. Greater range of action than W arch
4. Force are equivalent to W arch
5. Attention to soft tissue irritation
6. Imprint on the tongue (W arch & Quad helix)



Origin of changes

1. Opening of the midpalatal suture in young child
2. Dental expansion

Expansion and retention with lingual arch

1. 2mm per month (1mm each side)
2. Slightly overcorrection (lingual cusps of maxillary teeth occlude on the lingual inclines of the buccal cusps of mandibular molars)
3. Removal and recementation at each active treatment visit
4. 2 to 3 months active treatment
5. 3 months retention



Unilateral maxillary constriction

1. Different length arms on a W arch or quad helix
some bilateral expansion should be expected



Unilateral maxillary constriction

2. Lingual arch in lower arch and use cross elastic

More unilateral expansion
Need cooperation



Unilateral maxillary constriction

3. Removable appliance sectioned asymmetrically

depends on A . Quality of retentive clasps
 B . Patient's cooperation

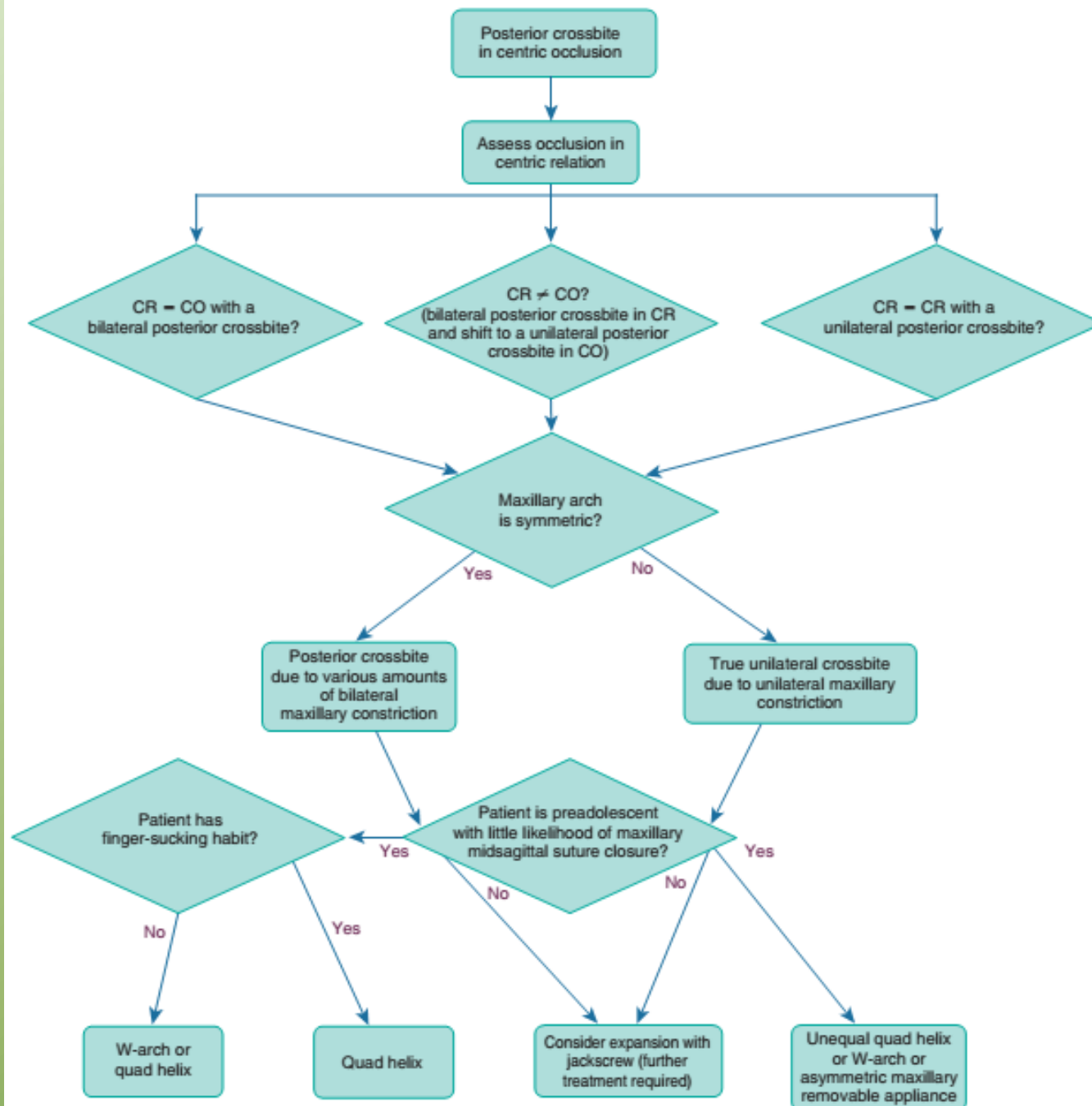
Both arch contribute to the problems

Cross elastic with band & bond of both arches

Force { Vertically
faciolingually

Causation in children with increased lower force height or limited overbite

The most common problem :lack of cooperation



Good luck

