4th year Ortho #24

Interceptive treatment Any treatment procedure which eliminate or reduce the severity of developing malocclusion (while the patient is growing or in mixed dentition), that make the treatment in the future much easier or won't need treatment at all.

mixed dentition problems

1. Premature loss of deciduous teeth
2. Retained deciduous teeth
3. Infra-occluded primary molars
4. Dilaceration
5. Impacted first permanent molar
6. **Effects of premature loss :**

1. Loss of space and crowding. 2. Midline shift (mainly C).

These effects depend on which and when tooth is extracted and the pre-existing crowding.

As the degree of crowding increases so does the effect of early loss.

If early loss of C happened in an uncrowded arch these effects won't occur and no need to balance. But if it happened in crowded arch, we will have a midline shift.

The solutions / the interceptive treatment

: 1) Balancing extraction: is the removal of the contralateral tooth to avoid midline shift problems 2) Compensating extraction: is the removal of the equivalent opposing tooth to maintain occlusal relationships between the arches 3) Space maintainers

• Deciduous incisor: premature loss of a deciduous incisor has little impact, no need for balancing or compensating extraction. Rarely, in young children for psychological and speech reasons we might use spoon denture.

• Deciduous canine: unilateral loss of a primary canine in a crowded mouth will lead to a midline shift. To avoid this is necessary to consider balancing extraction of the contralateral tooth. No need for compensating extraction.

* Deciduous first molar: In most cases a balancing extraction is not necessary (it's between E and C). But in severely crowded arch we will have midline shift. So we need balancing extraction. No need for compensating extraction because the amount of space loss is not as severe as in E loss. We don’t have to extract exactly the same contralateral tooth, as if the contralateral C is carious and D is sound we extract the C and keep the D.
* Deciduous second molar: if a 2 nd primary molar is extracted, the 1st permanent molar will drift forwards/severe migration. Balancing extraction won't help me to correct the problem. Of course we won't do compensating extraction leading to another impaction in upper 5 too!, even though the relationship won't stay class 1 but so what, no need to let the patient has another impaction .

So the solution here is space maintainer .

1. **Retained deciduous teeth.**

case (1): retained C and ectopic eruption of canine lingualy . Solution: extraction of C and the canine will come to its place by tongue. case (2): retained A and central incisor erupted palatal so we extract A. case (3): crowding in lower arch, we extract C and B to prevent forward eruption of laterals because they are narrower than lateral incisors.

1. **Infra-occluded primary molars**

Etiology: ankylosis

Infraoccluded tooth: is erupted but below the occlusal level. We called it submerged when the tooth is erupted but under the gingival level

Solution : It depend if there is successor under it or not. So 1st : take periapical x-ray We have to see in x-ray: 1- If there is a successor tooth or not 2- And if it's within the roots of E or not(causing resorption or not).

So basically infra-occlusion delays the eruption rather than preventing it, so we don’t need extraction of E. extraction is not easy due to the ankylosis, we need just observation

we need extraction when: - the 5 is not within the roots of E . - Sever infra-occlusion, it almost reaches the CEJ of the adjacent teeth.(submerged) If there is missing 5 at all what should we do? We build up the E by : - SSC - Porcelain crown(better esthetic) But first we need to do uprighting of adjacent teeth. Sometimes we plan for spontaneous space closure if we have missing permanent tooth, we do extraction for the E to get spontaneous space closure. (orthodontics decision)

1. **Impacted first permanent molars** Its most commonly occur in the upper 6 more than lower 6

etiology:

1. Mesial angle for eruption of 6 2. Small maxilla 3. Retrognathic maxilla

- if the patient is under the age of 8, 60% will have spontaneous eruption within 6 months so just observation. - If patient come after the 6 months or he is above the age of 8, we need to do interception. The interception depends on the amount of overlap: - 0-2 mm (mild), place elastic separator(used nowadays) or brass metal wire separator (old fashioned) - >2 mm, we make dis-impaction appliance (adam clasp on E and palatal finger spring on 6) to distalize and pushing it away from the E so we maintain the space.

**Two factors in order to take the decision of extraction: 1) Radiographic factor 2) Clinical factor**

**1) Radiographic factors : -**

**Should be no hypodontia (no missing 5 or 7), 8 still not calcified yet at that age so we don’t know about it. - Furcation of lower 7 should be just started(not continued or completed) (in upper 7 I don’t care at any age whenever we extract 6 the 7 will take the place of 6 even if the roots of 7 are completed because the upper 7 is erupting in mesial angle . - Angle between lower 6 and 7, should be between (15-30)o if less or more we won't have spontaneous space closure - Overlap between 6 and 7(we should have it).**

**2) Clinical factor:**

**If the patient at age of 10 years with badly destructed lower 6's,we don’t extract them, we temporize them until she reaches 13 years old when she is ready for definitive treatment, now we extract 6's and use its space to correct the overjet. (Because if we extract them at that age we will have spontaneous space closure and when she reaches 13 years old, she will need again another extraction of PM's for the retraction of lower incisors) But if in upper arch we can extract the 6's because we want to push the incisors forward so we don’t need space. The opposite if the patient in class 2 or has crowding.**

If extraction happened in lower 6 we will have over eruption of upper 6, to prevent that we either hold the upper 6 in its place (using wire and composite) or we do compensating extraction. If the extraction happened in upper 6, the lower 6 won't over erupt because it occludes with the upper E. Also the upper 7 drift mesially within bone 1 st then erupt in place of 6. So we don’t do compensating extraction.