Impacted canines

**Early management** : the steps that we can do to prevent the impaction of canines\*

 Can only be helpful if the impaction is due to crowding -

For example if the impaction is due to lack of space then if we intervene to creat that space we would prevent the impaction

-This can only be done by having good diagnosis: examination + RGs

- must take place at an early age ( early management)

When should we take an OPG?\*

After the eruption of LI + PMs – 8-9 years old

Early intervention is managed by: 1-GP 2-orthodontists 3-pedodontists

-Some other cases the impaction can't be prevented and must be managed

\*Why do we need to manage impaction?

1-Because the canine is very important in occlusion ( canine guidance)

Aesthetics2-

Dentigerous cyst formation3-

4-Having retained deciduous tooth (C), after a while it will become mobile and needs to be extracted and replaced with implants or Cr+Br but either ways we need to consider the impacted canine first

**Management?**

1-Only follow up

Extraction2-

3-Exposure and aligning, the ultimate goal is to place the canine in its correct position

-Ideally we like to have all teeth present and on function but the the final decision is customized for each case

Examples:

 If a 50 yr old male came to treat dental caries on upper 6, the arch was full ,no spaces, but the canine is missing, we took an OPG and found that the canine is impacted in the bone and on a high position with no associated pathological lesions , here the ideal management is to leave it and follow it up ,**why to follow**? Because there is a chance of developing pathological lesion around it

A 17-30 yr old pt with retained C after taking an OPG it was found that the canine is impacted , best management would be exposing the canine , after consulting the orthodontist because some impacted teeth can't be moved if they are in a high position or between the roots and sometimes the root is dilacerated and others maybe ankylosed

**Extraction is favored when:**

1-the canine is associated with pathology or adjacent tooth

( if we remove the cyst + the canine 🡪 inoculation ,, if we open the cyst to decrease P in it and keep the tooth 🡪 marsupialization) so if we do marsupialization there would be healing of bone and surrounding tissue and no need for extracting the tooth so presence of a cyst doesn’t always mean extraction

2-Occlusion : if the pt is young with good occlusal relations and we fear that eruption of this tooth will disrupt these relations

3-Pt preference: if the pt has retained C, impacted canine in a high position perfect occlusion and the only reason to do ortho Tx is to expose the canine he might choose to extract it

4-Poor prognosis for ortho traction : ankylosis , abnormal anatomy like dilacerated roots , difficult position (very high )

**Location:**

-The most imp thing in planning for extraction is determining the position of the canine

OPG is 2D , so it is not enough to depend on it alone-

Statistically it is more likely to have the canine impacted palataly( 75%) -

-To determine the position we can take CT scan but it has some disadvantages like high radiation exposure dose most dental centers don’t have CT scans because they are expensive) CBCT is faster , les dose , easier to use and we can take the result immediately

Parallex technique ( horizontal or vertical)-

A-horizontal:

 we take 2 RGs with different angulations if we find that the canine looks closer when we take the 2nd angulation then it is palatal but if it becomes more distant then it is buccal

B-vertical:

we take an OPG and a PA at a higher level if we see the canine rising high in the PA then it is palatal if not, buccal

same direction 🡪 palatal ,, different🡪 buccal

 -so to locate the tooth position radiographically we can take:

CBCT most accurate and reliable one ( CT is accurate as well bs not preferred due to its high radiation dose and cost)

 OPG + lateral RG

2 PAs ( horizontally) – parallex tech.

Occlusal RG

Clinical examination – palpation not that reliable

If the crown of the LI is going palatal the impacted canine is Buccal and is pushing the root of LI palatally

So we need to open a flap , remove bone ,sometimes we need to do sectioning of the impacted canine

If the impacted tooth is buccal we need to open a flap, envelope flap is not a good option because usually the level of impaction is high , unless it is near the alveolar crest then an envelope flap is ok to use

Usually we use the 3 sided flap as we mentioned in previous lectures this flap has a vertical cut that is preferably positioned mesial for a good field of vision but in case of the canine ,it is an esthetic area so we tend to make the cut distal although it makes it harder to handle and visualize , we try to extract it as one piece if we couldn’t take it easily we remove some bone or section the tooth ( Cr + root)

 Palatal flap:

We have 2 arteries ; greater palatine and nasopalatine , so we cant make vertical cuts there because 1- it will cause bleeding 2- it will compromise the blood supply of the flap

So there is no releasing incisions on the palatal side

So we go around the palatal cervical margins of the gingiva , for ex. If the impacted tooth was on the right side we make the flap from the 6 of the same side to the 4 of the opposite side and we reflect the whole thickness of the soft tissue so now we are on the bone

If we want to make it bilateral extraction we make the flap from 6 to 6

We cant cut in the mid of the palate because we have the incisive foramen and we might have cross innervation

If the tooth was superficial , then we can make a small window flap and use elevator and forceps but usually it is deeply impacted

Healing of the palatal flaps is very good because they have good blood supply and because suturing is done around the teeth so it is well stabilized

To sum up

Buccal – three sided

Palatal—a. one canine : 4 to 6

 b.two canines: 6 to 6

surgical exposure:

done with coordination with orthodontists

we remove soft tissue and bone covering the canine , sometimes this might be enough ,the canine will erupt passively

or the orthodontist will add a button and engage a ring to it to pull the tooth down

the exposure mustn’t exceed the CEJ otherwise the root will be exposed and when we pull it down it will stay exposed because once it's exposed it becomes contaminated so bone will not form around that exposed part of the root

if it was buccal and in a high position : window flap

if it was buccal and near the crest then we cant use window flap because we will lose the attached gingiva

 we use apical reposition flap which is a 3 sided flap but when it is sutured back we lift the side up in that way the attached gingiva is higher in position

if the position was very high then one option is to do a window flap attach a button –open exposure

another one 3 sided flap , button ring ,close the flap so the button remains under the soft tissue and the retraction is done blindly—closed

 complications:

trauma to adjacent teeth

oro-antral communication

bleeding

nerve injury

fractures