



# Radiology II



Sheet

Slide

Hand Out

Lecture No.	9
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# CRC #3:

## Trauma and inflammation

### Case #1:

We have PAs RX for two different patient (upper and lower row).

Looking at the upper row of PAs, is this dentition normal?

You can notice that one of the central is completely calcified while the other central has wide pulp chamber and open apex. This is typical chronic consequence of trauma (we have two different response).

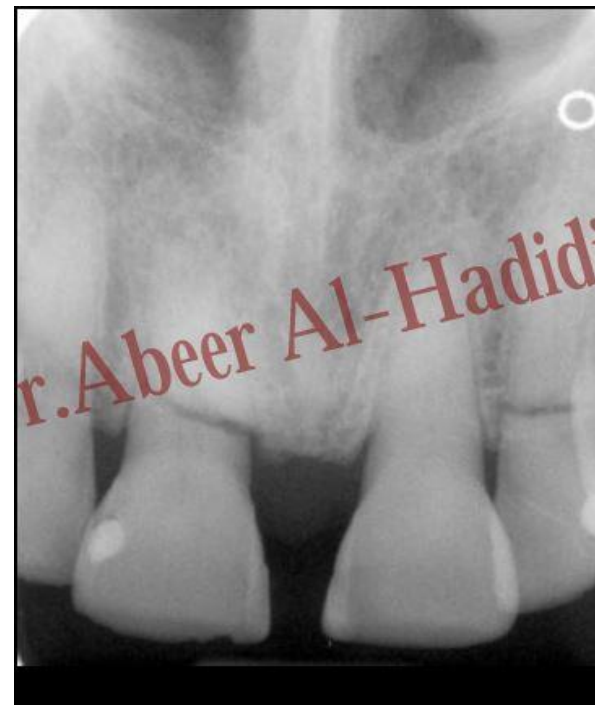


While the lower row of PAs represent a typical picture of acute trauma, we can see the oblique fracture line of the root.

This PA is more of acute stuff. How you would you classify this? Is this a root fracture or this is an alveolar bone fracture? What we need to establish is that the fracture line running across the root and alveolar bone? Or is it confined to the root? For this case, it's confined to the root.

Note: this determination will affect the splinting protocol, if we going to go for splinting.

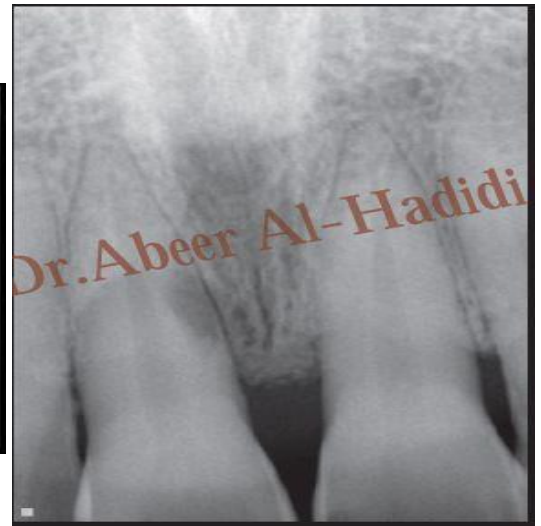
Is there any calcification here? No, because we can see the pulp. In case we have calcification then you have to think about chronic sequel of trauma. In this case, we have acute trauma.



## Case 2:

Usually it's hard to differentiate between internal and external root resorption. From this 2D radiograph, the type of resorption seems to be external. If you remember, we've said before that if you could see an intact pulp chamber on the radiograph, then you could say that there is an external root resorption. On the other hand if the pulp chamber is distorted, then it will be an internal root resorption.

According to the management; the extent of the resorption is one of the most important determinant to decide whether to keep the tooth or take it out, whether to go for surgical endo ttt or not. So some time you need more information and more advanced radiographic imaging tech. so after taking a CBCT Rx, you can see that the external root resorption is more extended than that appear on the PA.



## Case 3:

Here we are talking about a full mouth series that was taken in 2008, in this series there is nothing major to worry about, we can notice multiple fillings, multiple missing teeth, pneumatization of the maxillary sinus, peri-apical lesion a single tooth that needs to be extracted and there are radiopaque structures that are seen bilaterally on the premolar area which are the mandibular tori.

This patient came to the ER on 2.8.2011 complaining from severe pain in the lower right anterior area.

Abnormal findings in this panorama:



You can notice that the bone quality is not that good, and it's become worse when we go for the midline, also you can notice the line below the cortex outside the bone which represent a periosteal reaction, there is a space between periosteum and the bone, so a periosteal reaction happened. In the next panoramic radiograph the periosteal reaction is much more extended and accentuated.

Two main aggressive diseases we should consider whenever we see a periosteal reaction which are; malignancy and osteomyelitis. So the extraction or endo ttt will create more complications, also more communication with the flora will happen. Unfortunately, her dentist decided that the canine is the offended tooth and extracted it (since we have sub gingival restoration).

Since the patient is on bisphosphonates so the type of osteomyelitis would be BRONJ. And this is why the general quality of bone was bad.

#### Case 4:

Full mouth series shows multiple apical radiolucency, moderate bone loss in general, localised vertical bony defect, and apical rarefying osteitis, respectively.



How would you describe what is going on in upper centrals?

Floating teeth? Of course not!!

The physiological definition of floating teeth: an aggressive lesion that is scooping out the bone like in Langerhans cell histiocyte. And this definition doesn't coincide with what we are looking at.

Ghost teeth?? Absolutely not!!

Ghost teeth represent a problem in the tooth itself.

So you have to think about perio-endo lesion.

It may start as endo lesion that extends all the way to crestal bone or it may start as periodontitis (severe one) and extends all the way to the tooth pulp.

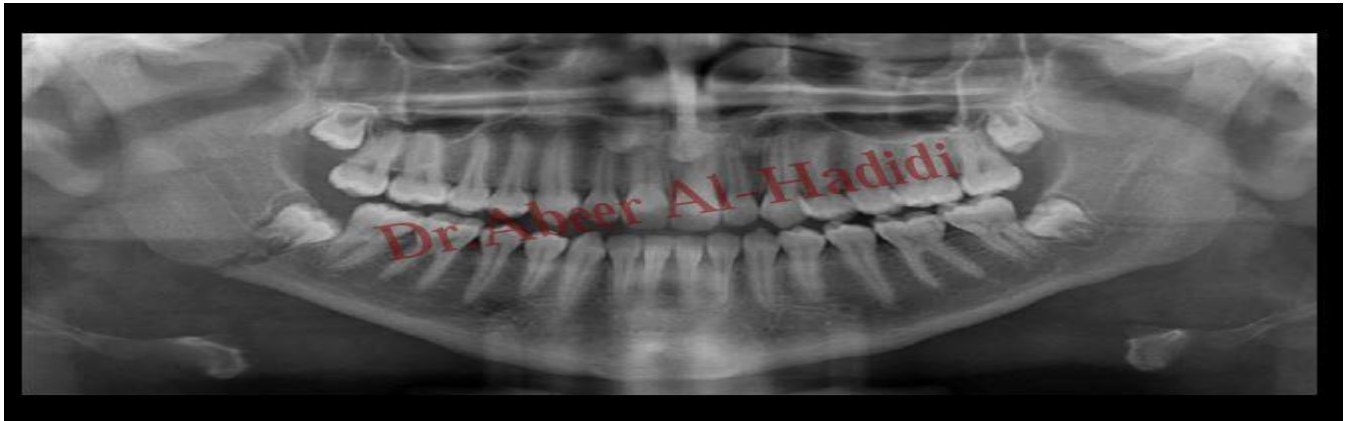
So in this case the Dr. Voted for endo-perio lesion, because we don't have severe periodontitis that would cause loss of tooth vitality. However, you may say that the tooth didn't have any deep caries or restoration that would cause an endo problem, so you have to think about trauma. But in this case we don't have any loss of tooth structure or chipping of enamel!!!

So what is the spot diagnosis?

You have to know that in both cases (perio-endo or endo-perio) the tooth loss its vitality, so you have to do endo ttt for the tooth, if the lesion disappear then it's of an Endo origin, if it's not then it would be of a Perio origin. So the prognosis of endo- perio lesions is better, since they would be healed after endo treatment.

Why we didn't consider the widening of PL space as a manifestation of scleroderma?  
Because here we don't have a generalised widening in all dentition.

### Case 5:

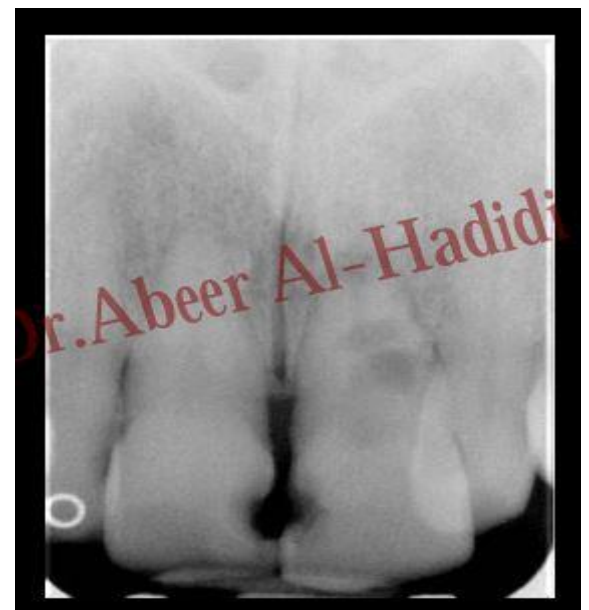


Panoramic radiograph showing a fracture line in the lower right posterior region. This fracture is compound because it's associated with a tooth. We can't consider the radiolucency which is around the lower right 3rd as a pericoronitis since pericoronitis is a soft tissue lesion, so we have to consider it as a follicle because the patient is young and we should follow him up. Soft palate

You should take a second townes view radiograph to rule out any condylar problem. But in general you have to take another radiograph to rule in or out the fracture.

### Case 6:

Periapical radiograph showing the upper centrals, we can notice regarding the upper central that there is internal root resorption and external root resorption as well. There is no doubt that we have an internal root resorption since we can't follow the silhouette of the pulp (the pulp system morphology is disturbed).





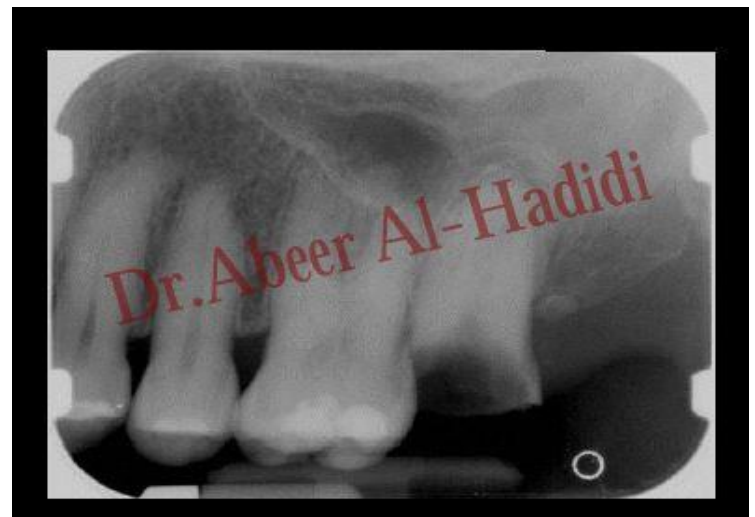
### Case 7:



Panoramic radiograph with fracture in parasymphiseal area that is usually associated with condylar fracture on the contralateral side but in this case the condylar fracture occur in the ipsilateral side, So we have condylar neck fracture, root fracture of lower left four and fracture at the parasymphiseal area. And remember that we need to take a second radiograph in such case.

### Case 8:

In this PA RX we can see halo sign which is remodelling of the floor of the sinus caused by an apical disease around molars, causes it to elevate around the apices of the affected teeth (upper 7 in this case)..



### Case 9:

CBCT, axial, para coronal and cross sectional cuts of the left condyle corresponding to the six green lines on the axial cut, so we will focus on the TMJ which is consist of condylar head and glenoid fossa, the glenoid fossa and condyle looks abnormal because they look flat and deformed, we always check them separately because of that during growth, the glenoid fossa will follow the development of the condyle. So you can know if the disease has been occurred during TMJ growth (like this case) of after its development. The Dr. Mentioned that the cause of this deformity is due to forceps trauma. If the glenoid is will developed, then the condylar deformity will be a result of trauma or inflammation (arthritis).



Note: the radiographic anomalies of the TMJ does not necessarily correlate with the clinical picture. So you can find a patient who doesn't complain from his TMJ but radiographically; the TMJ appears to be abnormal, and vice versa.



Case 10:

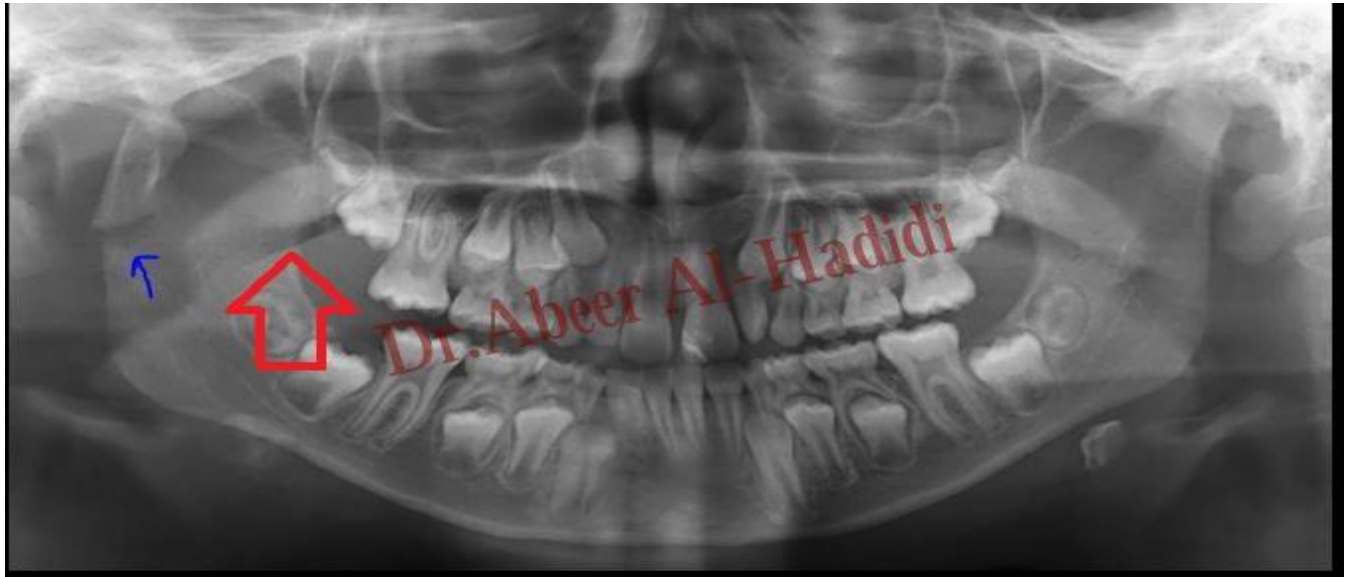


You can notice that the major problem in this panoramic RX is located on the left side , the lower border of the mandible and the trabecular pattern of the left side differ from the right one , these change definitely are preceded by multiple RR, apical disease; granuloma, abscess or a cyst.

Diagnosis: typical presentation of osteomyelitis

This patient definitely have sign and symptoms, so he has to be admitted to the hospital and give him IV antibiotic.

Case 11:



Panoramic radiograph of 7 year old patient showing displaced fracture. Do you expect to see this type of fracture in children? Definitely no!! The bone of children is flexible so green stick fracture will be expected. In this case, the injury was not easy (high velocity).

Red arrow: tongue

Reversed townes view, you can notice the fractured ramus which is pulled medially by the muscle.



## Case 12:

Telescoping over lab (radiopaque), radiolucent gap and step deformity so the patient has an open bite, and these are the typical three signs of fracture.



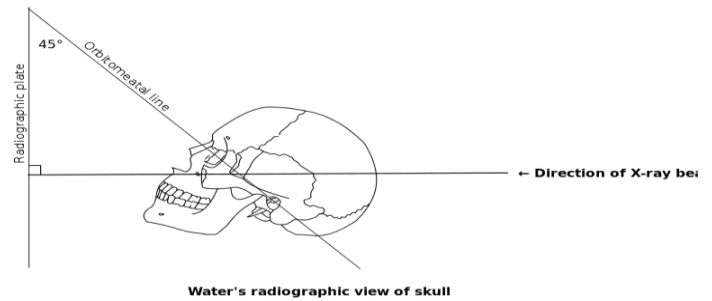
- What does a fracture look like??

- Classical is a black –radio lucent- line represents separation of bone, but it maybe we can see it as a radio-opaque line if we have Telescoping ; depending on muscle pull whether they get the two pieces closer or far away from each other , if closer the mesial and distal fragments overlap at some point → radio-opaque .Both may or may not have **deviation**; the two fragments get away from or get closer to each other but not at the same level; one is higher than the other , and it affects the occlusion .

Reversed townes view, you can notice the two fracture line, so we have 3 fractured parts of mandible.

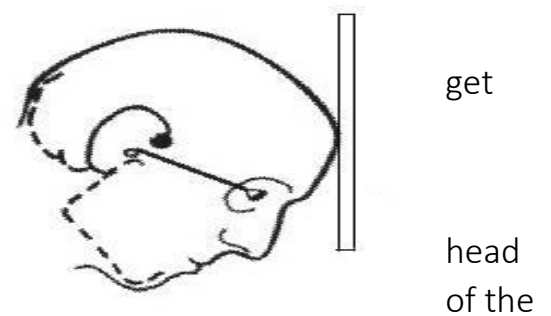


1. **Waters View:** main indication is sinuses fluid level, symmetry, continuity of cortices (wiki: X-ray beam is angled at 45° to orbitomeatal line).

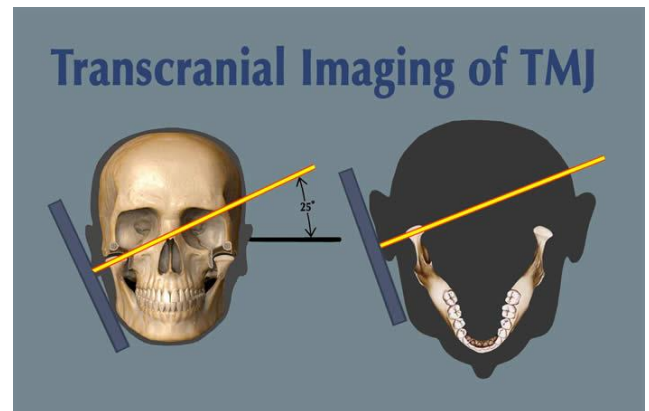


2. **Reverse Towne:** indicated for condyle neck fractures, here the patient opens his mouth to the condyle out of the glenoid fossa.

\*\*\*Note:-In these positions the patient brings his head either up or down to get rid of super-impositions of the cranial base.



3. **Trans-cranial:** general for the TMJ; lateral oblique if I need to focus on one side more than the other.



4. **SMV (SubMentoVertex):** for the body of the mandible, it is contraindicated for cervical spine injury because the patient might get paralyzed.

