Subject : Radiology

 Sheet number : 10

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Cystic and cystic-like lesion

 Cyst: pathological cavity that is lined with epithelium .

radiolucent lesion : if they are inflammatory , they could associated with non vitality.

Sometimes they associated with un erupted tooth or could be even not related to tooth.

 # you could see it involved jaws in tooth bearing area . if they are in odontogenic , it could be expand into the sinus .

# most of them are well defined and corticated .

- they will lose their corticated border if they get super infected.

#NOTE :- not only being inflammatory lesion >> mean it lose their corticated border ; they lose it just if it get super infected.

# very important feature of the cyst : is they get expand by hydrostatic pressure ( hydrostatic expansion ). مثل واحد بينفخ بالون

 Expansion will be equal in all dimension .

 There will not be an undulating border or irregular border.

\* All things above distinguish cystic lesion from benign tumor .( the fact of hydrostatic pressure and unilocular ).

# most of the cystic lesion are radiolucent unless they get dystrophic calcification >> they displace and expand .

cyst either :

 1) odontogenic

2) non odontogenic

Odntodgenic cyst :

1- Radicular cyst :

 common

-Is a cyst around an apex of a non vital tooth.

-We distinguish it from granuloma by size and margin ( well defined , corticated )

 - Come out from **cell rests** of **Malassez**. .

 May be asymptomatic , may be flare up .-

2- Residual cyst :

- when we extract the tooth and cyst still present .

- same shape of radicular cyst , same expansion pattern , same internal structure , same every thing .

- also it can expand as other cyst .

- it can remodel bone .

- it can displace teeth .

 **3- Dentigerous cyst :**

**-location is important : surround the crown of an impacted tooth around CEJ >> because it is cystic degeneration of the dental follicle .**

**(( benign tumor surrounds the whole crown))**

**\*NOTE: if it is above 1 cm and do displacement , impact surround structure >> it is probably cystic lesion.**

**- it does expand**

**- it does displaced**

**- it is radiolucent**

**-it is well defined**

**- it has corticated border .**

**- radiolucent lesion , well defined , unilocular around crown is on of three:**

**D.D :**

 **1- normal ameloblastoma**

**2- keratocyst odntogenic tumor**

**3- dentigerous cyst .**

 4- Buccal bifurcation cyst :

 -Typical par dental cyst that is associated with both lower sixes bilaterally .

 -Cystic degeneration of the follicle of the buccal side of both sixes , push the root lingualy and push the crown labialy , so it is well defined lesion bilaterally .

 Kids and young less than 20 years .-

-This lesion is different from the others because it is bilateral >> related to both sexes in young indivual , also it does very typical tipping of the sixes .

- cause : cystic lesion rational follicle

- it can expand , and those teeth are vital .

5- Lateral periodontal cyst :

 -Very nice and cute cyst .

- Asymptomatic

-Typical in premolar area and mandible .

-Typical small

- usually we try to differentiate between it (vital tooth) and lateral radicular cyst (non vital tooth) by doing endodontic treatment and follow up .

- lateral periodontal is the nicest variant of another more aggressive one that is called botryoid ( it is from the same origin rest cell of serres , but those are multilocoluar , so it is a bit more aggressive (( rare variant )) of lateral periodontal cyst . non inflammatory .

6- Glandular odontogenic :

 - They are cyst because histopathology it is a cavity that is filled with fluid and lined with epithelium , but it behave more aggressively .

- it is very typically in lower anterior mandible

- multilocular

- high recurrence rate

- we treat it in clinic as benign tumor not cyst because in cyst >> we can not do any thing except **Enucleation . but in benign tumor we remove a bit more .**

**- we call it glandular >> because it is salivary gland related .**

**- it is rare as well**

**- it is easy if we don’t call it cyst .**

**- glandular behaves more like a benign odontogenic tumor with multilocular with fair expansion with radiolucent border .**

7- KCOT (keratocystic odontogenic tumor ):

-the WHO ( world health organization ) has classified this lesion into a tumor based on tumor like characteristics of the lining epithelium, then they reclassified as a cystic lesion , now there is a Heated debate about it ,

-Dr Abeer prefer to change it from a cystic category into a tumor category because its more sense depending on characteristic feature of the cystic lesion :

- its not a ballooning ,not very undulant , has high recurrent rate .

 KCOT:

1-border expansion anteroposterior much more than bucculingual ( not like a balloon) ,it expanse one access more than other .

2- recurrent rate much higher than any typical regular cyst because of small satellite cysts or fragment of epithelium left behind after surgical removal of the cyst.

\*radiographic features:

1- not ballooning

2-not simple unilocular , its uni or multilocular

3-mostly corticated ,not corticated all the way

4-it expand anteroposteriorly , this specific characteristic is differentiate KCOT from any other odontogenic tumor e.g. ameloblastoma which has extensive expansion.

 5- most commonly in the body and ramus of he mandible .

\*clinical feature :

1-no symptoms

2-swelling may occur later on , some time there is a drainage comes from secondary infection .

3- the surgeon share with you there experience on this lesion , it actually has enough keratin that can be aspirated ( cheesy material ) and take a biopsy .

\*treatment :always treated as a tumor

- note :

You cant never be 100% sure about the diagnosis based only one the radiograph , it give u 2-3 names as differential diagnosis especially in tumor and cystic lesion , so u need histopathologist .

8- Multi KCOT:

-mostly associated with basal cell naveus syndrome (gorlin –goltz syndrome )

 which is characteristic by :

1-basal cell carcinoma on the skin

2-KCOT more aggressive in this syndrome than a regular KCOT .

3-affect younger kids unlike regular KCOT which affect middle age 30-50 y .

4-very high recurrent rate .

5- this pt need very close monitoring with panorama and periapical radiograph , when the operator doubt then take Cone beam ,, some time the recurrent occur in new area as anterior area ,

\_u can imagine how measure of an effect of that has been on the growth of the kids i.e when u have remove part of maxilla or mandible to remove the lesion u distributing the normal pattern of growth so pt will need orthoganthic and so one .

9- CCOT (calcified cystic odontogenictumer ):-

-mixed density

-rare

-has two peak of age :

 1-for children .

2-for elderly

-no predilection for male or female or for maxilla and mandible .

-ghost cell under the microscope .

- associated with impacted tooth .

non-odontogenic tumor

1- nasopalatine duct cyst :-

 -it’s a cystic degradation of nasopalatine duct ,(nasopalatine canal usually contains a remnants of nasopalatine duct ).

We differentiate it from excessive foramen by:-

1-size :

2-shape : when it enlarge , it will be super impose on anterior nasal spin ,giving a heart shape .

3- effect on surrounding structure , if it’s a cystic it will displace the teeth .

4- sign and symptoms , the cyst has palatal swelling with a taste and some time if its super infected ,it will cause pain .

\*Dr said all the pictures from our book .

2- nasolabial cyst :-

-it’s a soft tissue cyst .

 u cant see it on a typical radiograph , u just see a saucer and remodeling for the bone beneath it , so u need MRI or some soft tissue enhanced CT.

3- dermoid cyst :

-u may see it in the neck or in the floor of the mouth .

-it’s a cystic dermatome i.e it has a deferent layers from embryology ,it may has a skin or skin appendage according to dermoid or epidermoid.

- it’s a soft tissue cyst so it need MRI or CT .

Cystic- like lesion :

1- traumatic bone cyst :

-actually not a cyst because there is no epithelial lining ,it just an empty cavity ..

-in theory '' trauma then disintegration to the clot ,the result will be an empty space .

-dose not expand , dose not displace .

Treatment :

-some say don’t do any thing with it .

- other say u have to interfere to exclude KOCT or anything else so open it and if its empty u will get:

 1- definitive diagnosis

2-treatment ,because once u induce bleeding ,it actually cover up and heal by itself.

2- Aneurysmal bone cyst :

-affect young pt .30-40y

- one of the gaint cell and reactive lesion .

-under microscope we can see gaint cell and huge vascular tissue in the bone .

-not lined by epithelium

- huge and rapid expansion so its painful .

-mostly in the ramus and body of the mandible .

-highly vascular lesion but not vascularized i.e there is no feeding vessels but it contain blood .

-u take it out with cushion ,it usually dose not come back .

- radiographic feature :

1-ill defined septa .

2-extem expansion .

3-unilateral

## bilateral lesion until now are:

1-cherpism

2-buccal bifurcation

3-keratocyst in gorlin syndrome

3- mucus retention phenomena :

It just a cystic like lesion , not pathological , it’s a dome of mucous retention in the epithelial lining of the sinus .

- dos not affect any structure of the sinus .

- may appear due to allergy or different rate of humidity .

- disappear by it self , no treatment needed .

 The only reasons would affect the dentist :

1-when we do sinus left during implant surgery ,, so if it’s a large it may obstruct the drainage pathway of the sinus .

2- to exclude if the origin is from the tooth or from the sinus by :

a- lamina dura is intact .

b- if the floor of the sinus is in its place i.e this lesion still inside the sinus cavity that is because the lining floor of the sinus is smooth and intact so every thing that happen intra sinus tissues and this is a typical for mucous retention ;

 ,but if the line of the floor of the sinus is on the top of the

lesion then the lesion will be an odontogenic .