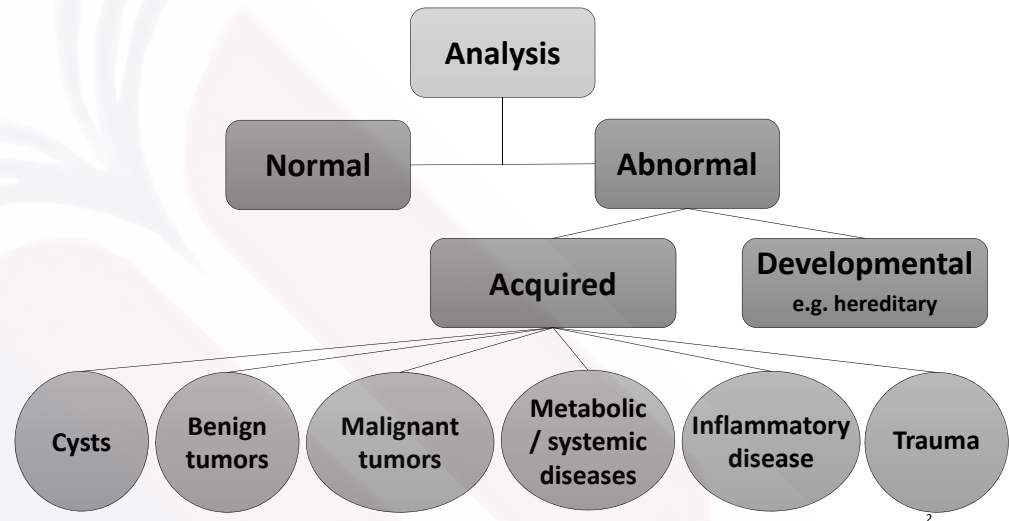


Cystic lesions

Lecture 9



1

IMAD BRINJIKJI

Cystic lesions in the jaws

General rules

- Intraoral and panoramic radiographs in most cases. Generally, large lesions require sectional imaging techniques before surgical intervention.
- No pain unless secondary infected.
- Radiolucency in bone (density in maxillary sinus).

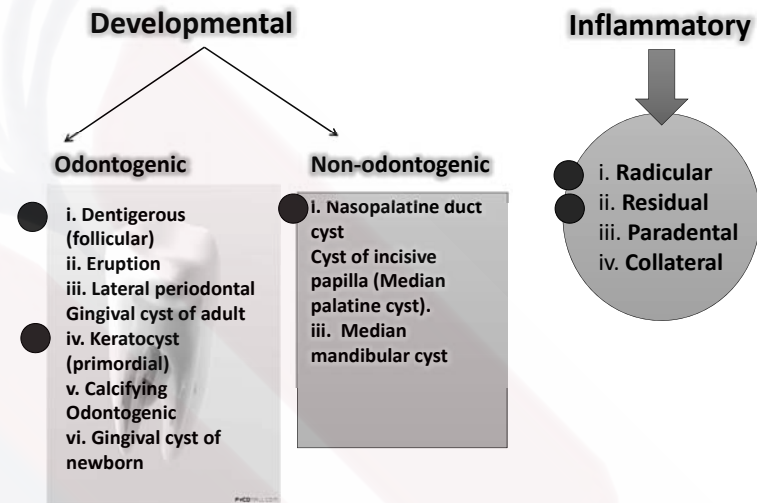
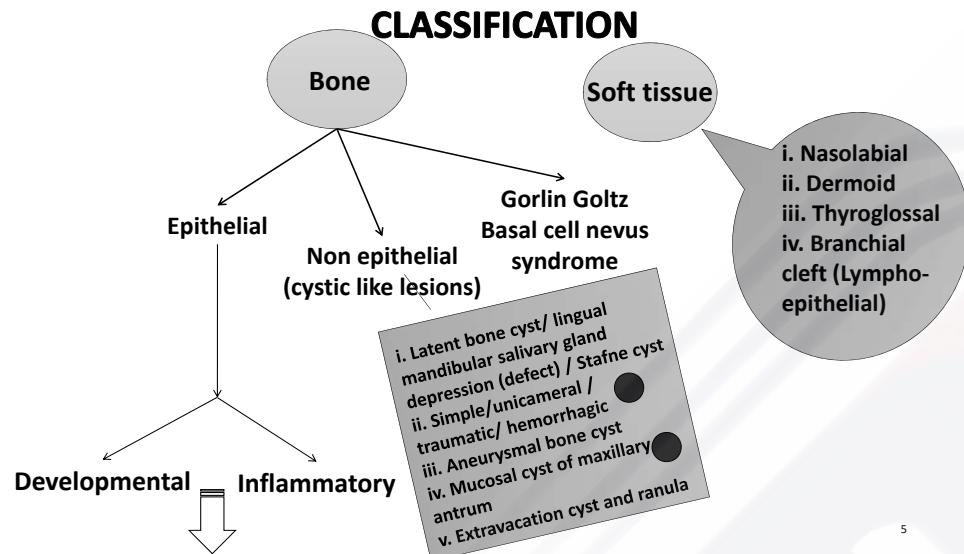
3

Cystic lesions in the jaws

General rules

- Unilocular round, oval or scalloped, or influenced by surrounding structures.
- May displace or resorb teeth.
- When secondarily infected, border may become destroyed or more sclerotic.

4



I. Periapical (radicular) cyst

Radiographic appearance

- Expand the bone in large lesions.
- In x-ray modalities, well-defined thin, uniform, intact and sclerotic border (except the radicular cyst previously mentioned).



Advantages of CBCT



I. Periapical (radicular) cyst

General rules

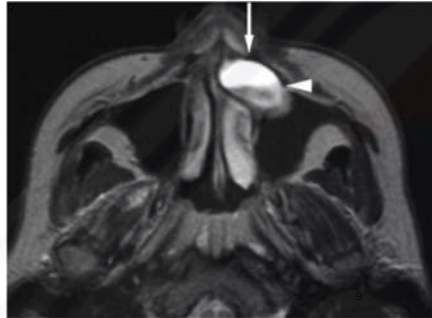
- T1-weighted MRI: homogeneous **intermediate** signal (fluid content).
- Occasionally, homogeneous **high** signal (cholesterol content).



I. Periapical (radicular) cyst

General rules

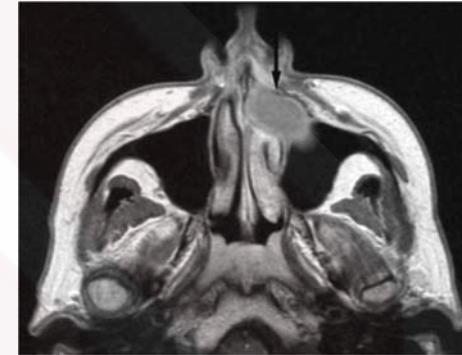
- T2-weighted and STIR MRI: generally homogeneous **high signal**.
- Some cysts may have **heterogeneous** signal (high to intermediate to low), consistent with fluid or semifluid (large molecules, granulation tissue) content.



I. Periapical (radicular) cyst

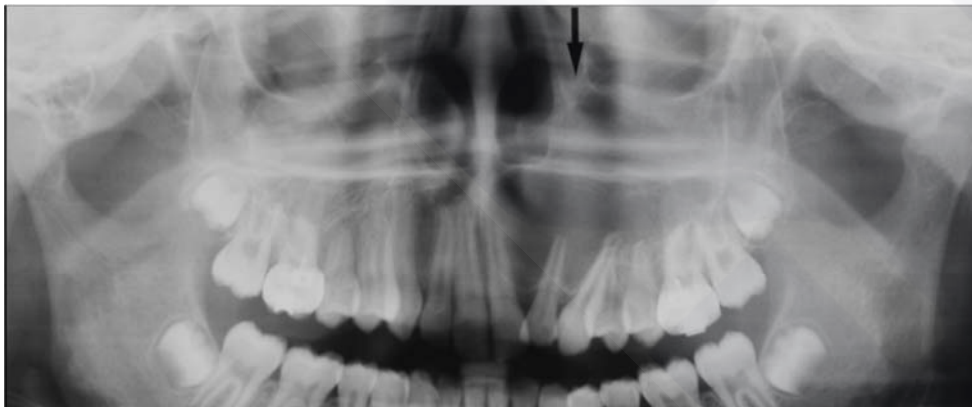
General rules

- T1-weighted post-Gd MRI: NO / peripheral enhancement (rim) [cyst capsule].



10

I. Periapical (radicular) cyst



11

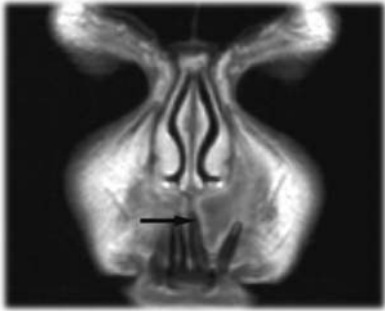
I. Periapical (radicular) cyst

Borders
Expansion



12

I. Periapical (radicular) cyst



Post Gd (peripheral enhancement).

13



I. Periapical (radicular) cyst



T2

14

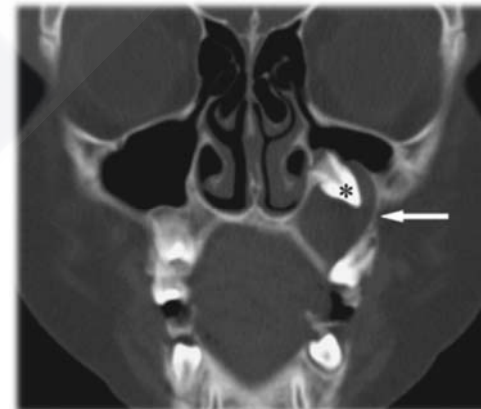
II. Follicular cyst (dentigerous cyst)



15

II. Follicular cyst (dentigerous cyst)

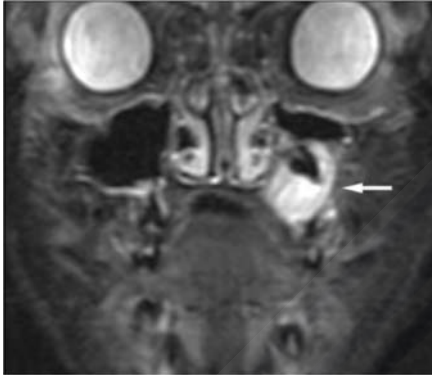
Borders/ The level of conjunction with the tooth.



16

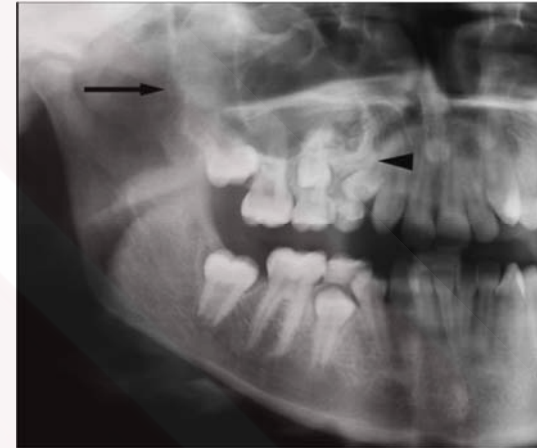
II. Follicular cyst (dentigerous cyst)

T2



17

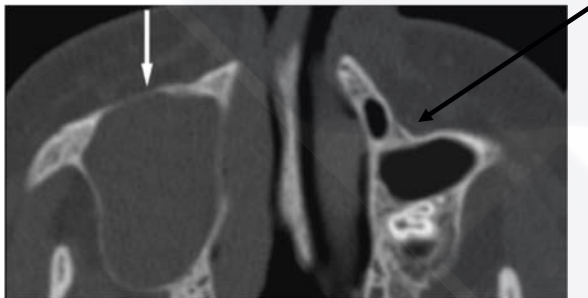
II. Follicular cyst (dentigerous cyst)



18

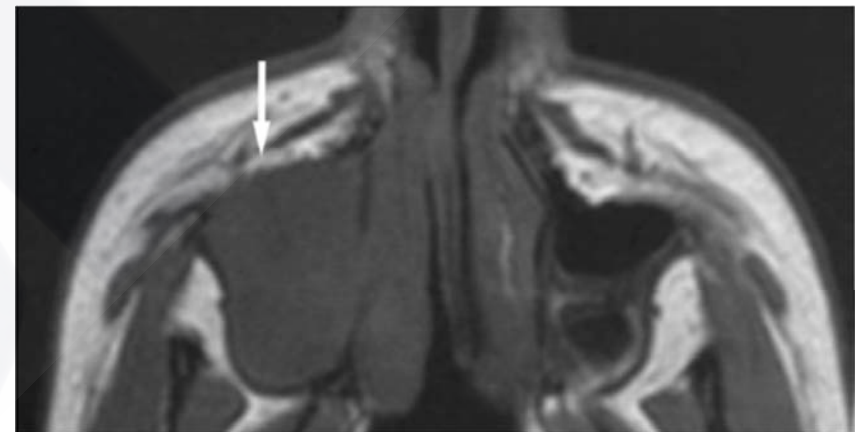
II. Follicular cyst (dentigerous cyst)

Expansion, compare with the left side.



19

II. Follicular cyst (dentigerous cyst)



T1

20

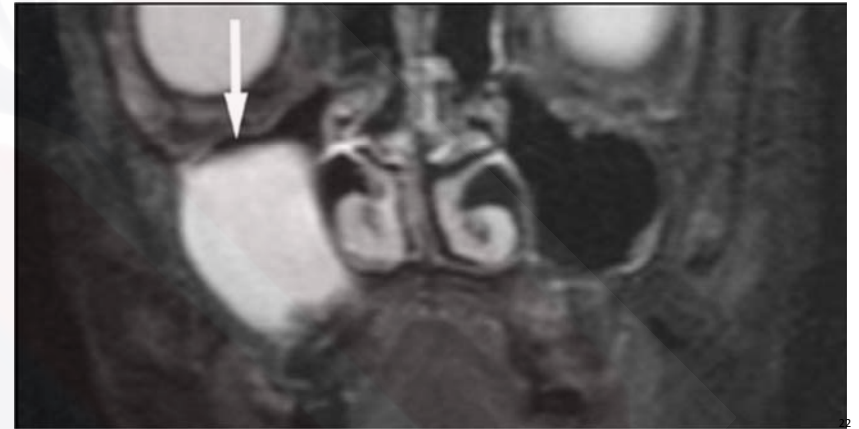
II. Follicular cyst (dentigerous cyst)



T2

21

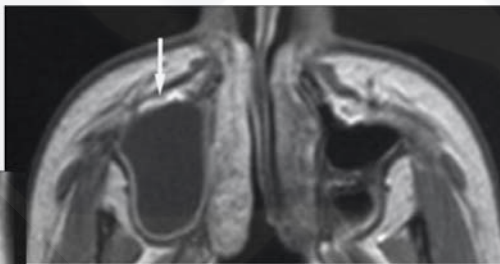
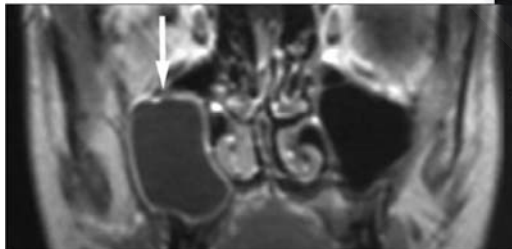
II. Follicular cyst (dentigerous cyst)



STIR

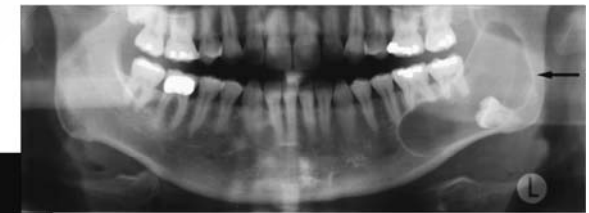
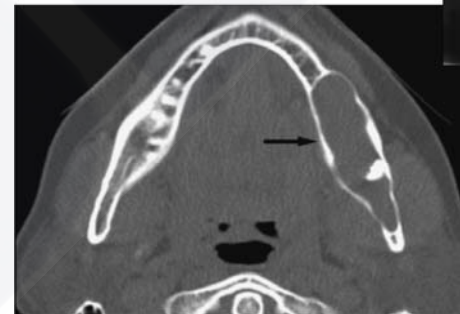
II. Follicular cyst (dentigerous cyst)

Post-Gd
Enhancement.



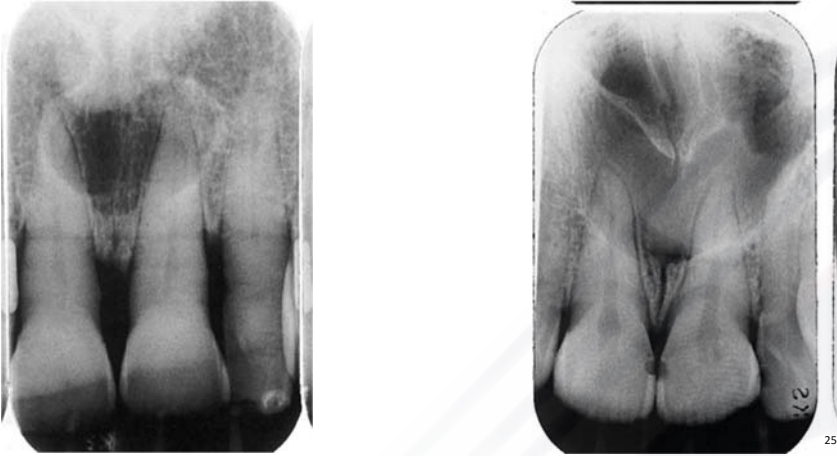
23

II. Follicular cyst (dentigerous cyst)

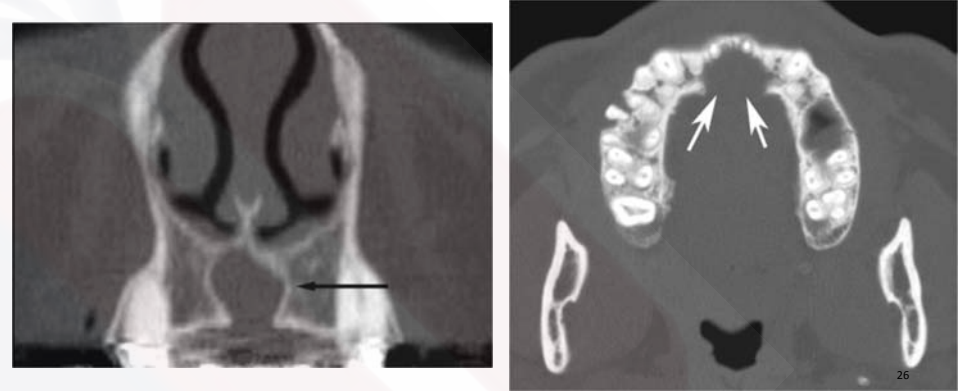


Note the expansion.
Also note the lesion is unilocular.

III. Nasopalatine duct cyst



III. Nasopalatine duct cyst



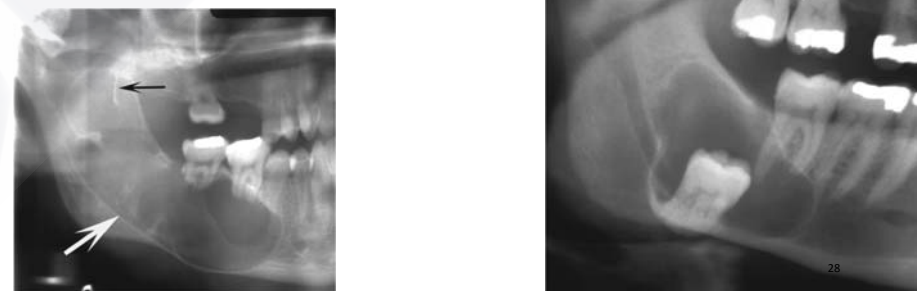
III. Nasopalatine duct cyst

- T1-weighted and T2-weighted MRI: homogeneous high signal reported to be specific for **nasopalatine duct cyst**.



IV. Keratocystic odontogenic tumor (KOT) [keratocyst (primordial cyst)]

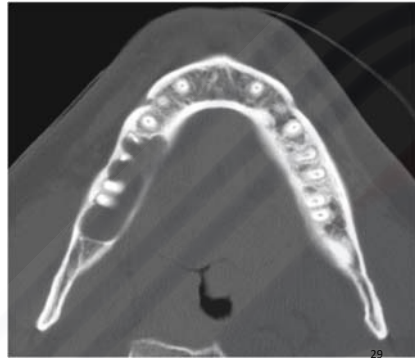
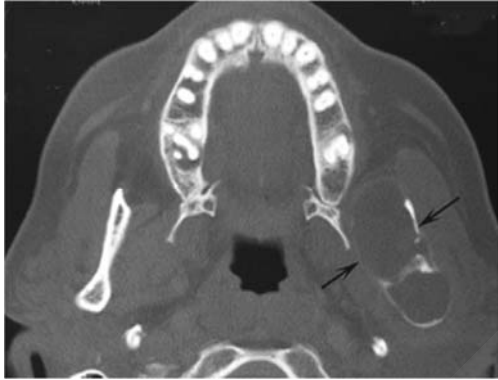
- A unicystic or multicystic tumor.
- Viscous or cheesy material (keratin). This material does not increase the radiographic density.



IV. KOT

Minimal expansion

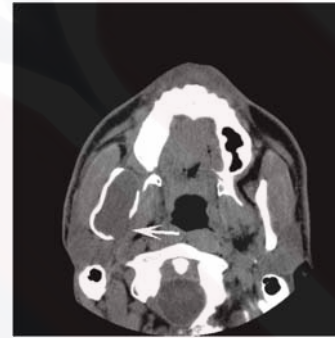
Except for the upper ramus and coronoid process.



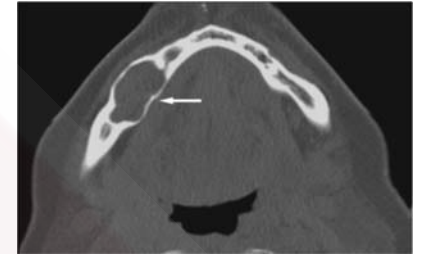
IV. KOT

Imaging features

- In X-ray modalities, corticated border.



Connection with the MPM

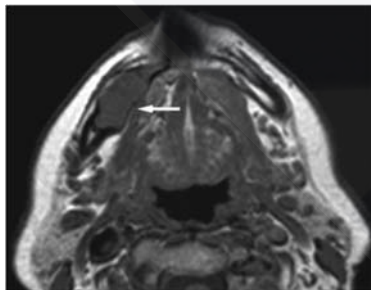


30

IV. KOT

Imaging features

- T1-weighted MRI: homogeneous or heterogeneous intermediate signal.

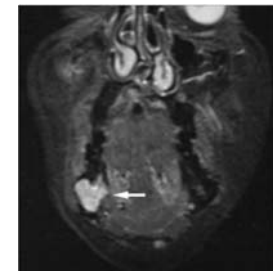
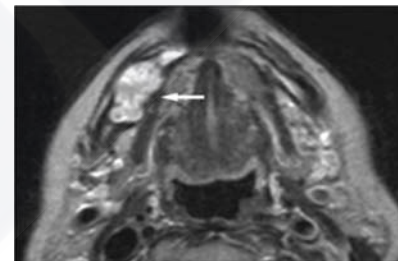


31

IV. KOT

Imaging features

- T2-weighted and STIR MRI: heterogeneous high signal.

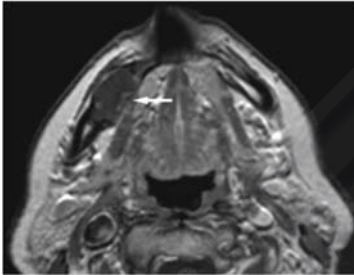


32

IV. KOT

Imaging features

- T1-weighted post-Gd MRI: no enhancement or enhancement of thin peripheral rim.



33

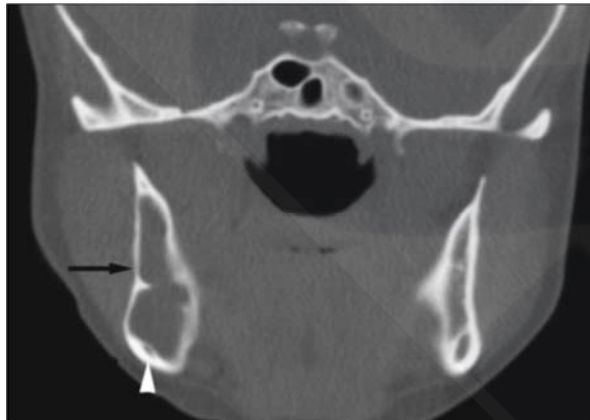
IV. KOT



Level of the attachment with the tooth cannot be determined in this case

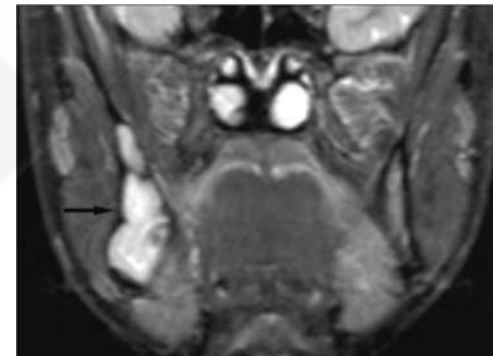
34

IV. KOT



35

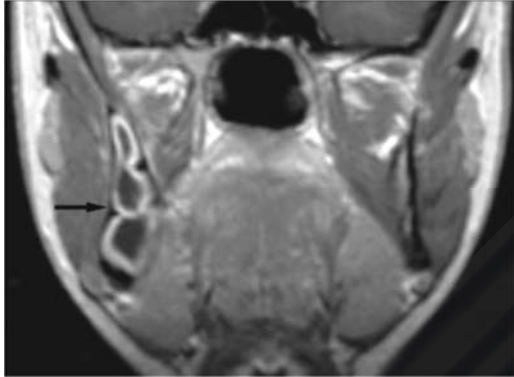
IV. KOT



STIR MRI shows high signal and two compartments.

36

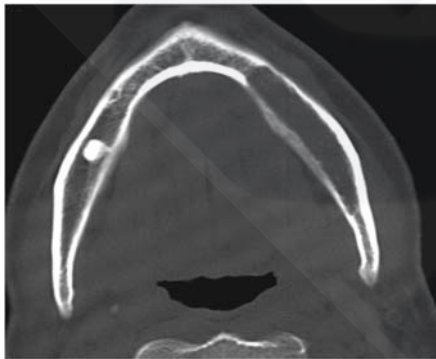
IV. KOT



Coronal T1-weighted post-Gd MRI shows no enhancement except peripheral rim

37

V. Simple bone cyst (Traumatic bone cyst, Hemorrhagic bone cyst)



39

V. Simple bone cyst (Traumatic bone cyst, Hemorrhagic bone cyst)



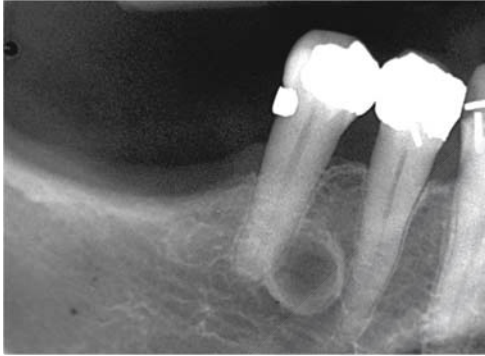
38

Differential diagnosis of cystic lesions

- When you have unusual findings (septa/ False impression of internal septa), move toward 3D imaging techniques.
- Radicular cyst: small (granuloma/ apical scar) Remember: size larger than 1 cm usually indicates a cyst. Generally, the final diagnosis is not critical for the treatment. Lateral periodontal cyst with the radicular cyst at the foramen of a lateral (accessory) pulp canal: the tooth is non-vital in the radicular cyst. The accessory canal may be detected radiographically.
- Residual cyst: Most commonly with KOT; medical history.

40

Lateral periodontal cyst



Differential diagnosis of cystic lesions

Follicular cyst:

- Normal follicle (2-3 mm; never exceeds 5 mm). Tooth displacement or expansion suggest a cyst.
- KOT: Attached more apically/ Does not expand the bone.
- Follicular cyst has no internal structure, KOT may have.

41

42

Nasopalatine duct cyst

- Some normal incisive foramens are up to 6 mm.
- Observation for 0.5-1 year.
- With radicular cyst: consider the lamina dura. Tube-shift technique.

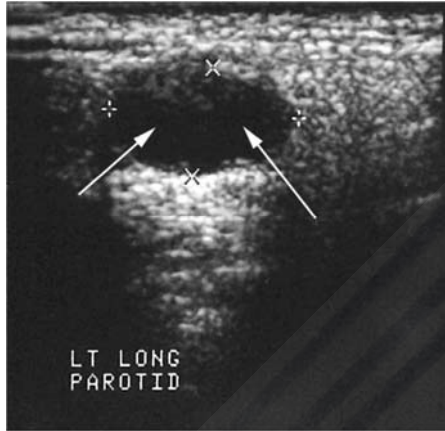
Differential diagnosis of cystic lesions

- Simple bone cyst: with KOT (both with little expansion); the borders in KOT are clearer.
- Simple bone cyst with malignant tumors: Presence of lamina dura of the teeth within the simple bone cyst.

43

44

Echography



The appearance of
cystic lesion on
echography (cysts
within the soft tissue).

The end