This lecture will be about CYSTIC LESIONS. We’ll be talking about the pathology, types and causes of cystic lesions but concentrate on the surgical terms and management.

* What’s **the surgical goal** behind cystic procedures?
1. Eradication of pathological condition where it’s something abnormal that need treatment.
2. Functional rehabilitation of the patient ; because once we do the where doing a surgical incision, losing part of the movement structures so the patients function may be affected. We have to keep in mind that the patient has to return back to normal.
* **CYST:** an epithelial lined sac filled with fluid or soft material.

Appears as a radiolucent area in the x-ray meaning that there is bone resorption.

We’ll have to know whether it’s (types):

1. Odontogenic (inflammatory (radicular cyst is the most common) or noninflammatory)
2. Nonodontogenic.

So it’s something abnormal that could be inflammatory or inherited…etc, which lead to a space lined by epithelium

* **Does it grow quickly or slowly?**

Slowly, were benign lesions and cysts in general grow slowly which leads to bone resorption.

Since we have a lesion, we’ll have to think of a treatment.

* **Surgical treatment modalities:**
1. Enucleation; the mostly used
2. Marsupialization
3. The stage of combination between the two procedures (marsupialization folled by enucleation)
4. Enucleation with curretage

***Note:*** *When we say excision we mean removal of the lesion with part of the adjacent normal tissue.*

*It’s done with tumors and with certain types of cysts (keratocysts)*

*As long as it’s benign then we’re conservative in its removal without touching the normal adjacent tissue.*

**ENUCLEATION**

 The process by which the total removal of the cystic lesion is achieved.

We remove the whole cyst by enucleation and take out the cyst as it is, including its capsule, without removing any of the surrounding structures meaning shelling out the entire cystic lesion without rupture.

Cystic lesions could be infected making it harder to remove without rupturing so we have to be careful as much as possible.

A panoramic x-ray was shown with :

1. A well-defined cystic lesion due to slow growth (it hasn’t got to do with capsule).

Because of it being growing slowly the body tries to defend itself by compensating the bone around the cyst trying to prevent it from growing quickly, so the lesion will be condensed on the borders.

1. Radiolucent
2. Not causing root resorption
3. Unilocular
4. Around 1\*1 cm dimension in the lower left posterior mandible.
5. Related to the roots of the 47 and 45 (were 47 is nonvital because it has an endodontic lesion)

Lesions in this site, size, nonvital tooth most probably are diagnosed as a radicular cyst.

The treatment of choice for a radicular cyst is enucleation (not excision).

**Q: Wouldn’t it be enough to treat the tooth for the cystic lesion to disappear?**

No, because a lesion would respond to an endodontic treatment or to the extraction of the tooth before it becomes a cyst. Once it becomes a cyst and lining appears this means it’s a new pathological stage that is only treated surgically.

* **Enucleation procedure:**
1. Mucoperiosteal flap ( 3 or 4 sided for good exposure)
2. Reflect the mucosa with the periosteum (bone is exposed)

In the picture that was shown the cystic lesion had caused resorption of the buccal plate, it doesn’t happen all the time, but it’s common to the radicular cyst that resorption occurs leading to expansion.

1. The bone is resorbed so we can see the capsule of the cystic lesion clearly.

Because our diagnosis is most probably a radicular cut we suffice with the enucleation of the cyst.

We go to the bone by enucleation using a currete or periosteal elevator between the cyst and the bone separating the capsule slowly and pulling the cyst out. Once it’s pulled out its sent to the histoptholgist.

In the picture shown the inferior alveolar nerve was showing, we didn’t have to touch it in this case, but due to pressure the patient will feel paresthesia a few months after the surgery and then he’ll go back to normal.

If dealing with a tumor such as ameloblastoma excision will be done with a safety margin (at least 0.5-1 cm) causing nerve dissection.

* **Advantages for enucleation:**
1. Preserves the adjacent structures
2. Conservative
3. The whole lesion can be taken out as one piece and sent to the histopathologic lab, so that the histopathologist could clearly diagnose the case.
4. Considered an excisional biopsy.
* **Disadvantages:**
1. Risk of fracture in cases of very big lesions
2. The cyst being close to vital structures

**MARSEPULIZATION**

The cyst grows from the inside, containing fluid that isn’t released which leads to its growth.

The idea of marsupialization is creating a surgical window to evacuate the contents of the cyst, where it would shrink.

If it was close to a vital structure, once it shrinks might move away.

If there was a risk of fracture once shrinkage occurs and bond bone forms this would lead to a stronger jaw.

Marsupialization, also called decompression, partsch operation refers to creating a window and going inside the space (lesion) and we stich the capsule of the cyst with the mucosa (biseero mucosa w capsule mashbookeen m3 ba3ad).

* **Advantages:**

It could spare the vital structures from damage.

* **Disadvantages:**
1. Space inside the jaw (oral cavity) which could be lead to food impaction or be contaminated.
2. Needs a regular follow-up is very important in such a case. Irrigation and dressings are also important.
3. We’re only sending part of the lesion to the histopathologist, so there could be misdiagnosis (incisional biopsy).

Once it shrinks in size, we can either wait until it completely heals and no signs are left, or until shrinkage reaches a specific size and go back to enucleation.

If we have an impacted canine that’s surrounded by a dentigerous cyst of a good size, and the canine needs to continue its eruption, in this case marsupialization is done to reduce the pressure from the cyst, causing its shrinkage and new bone formation and having bone in the space of the cyst then the canine can start moving from its place and this could be with the help of orthodontics.

If it was a dentigerous cyst and an impacted canine and we chose to go for enucleation we’ll have to remove the impacted tooth.

**So, having an impacted tooth, I would have 2 choices:**

1. Enucleation of the cyst associated with the removal of the tooth (e.g: having the cyst around the lower 8 because it’s not that important to keep)
2. Marsipulization if the impacted tooth was deep
* **Indications:**
1. Assistance in the teeth eruption
2. Reducing the size of the cyst
3. Size of the cyst; if it were large it could cause fracture using enucleation.
4. The patient might not be medically fit to perform a big surgical procedure
5. Surgical access
6. Amount of tissue injury; proximity of the cyst to the vital structures.
* **Example 1:**

Panoramic x-ray:

Well-defined radiolucency area in the right body of the mandible surrounding an impacted tooth under the E (impacted lower right 5).

 In this case we have 3 reasons to go for marsupialization:

1. We don’t want to extract the tooth
2. The size and site of the cyst
3. The strategic tooth that’s in the arch

A picture was shown consisting of cystic fluid associated with blood.

Procedure:

1. Flap reflection
2. Remove the bone surface; you get to see the cystic lining
3. Stich the mucosa with the lining; therefore the space becomes continuous with the oral cavity.

Radiograph was shown once again but after surgery:

With the follow up you get to see :

1. Reduction in the radiolucency (new bone formation)
2. New radiopacities
3. The tooth started moving (bone is needed for the tooth to move through.

***Note:*** *If there was space without bone the tooth wouldn’t move even if orthodontic treatment was done this would lead to its extraction).*

* **Example 2:**

A very huge radiolucent lesion surrounding an impacted displaced wisdom tooth (which is common in cases of cystic lesions) expanding on the buccal plate.

If we do enucleation the ramus of the mandible will come out when we do excision.

So we go for marsupialization.

In the case shown the cystic fluid was white, meaning infection.

Bone exposure followed by opening a window and connecting the mucosa with the lining.

This area remains opened.

There are some cases were we put dressing adding steroids, cortisone or antibiotics inside the lesion (changing it every day) and we follow the case to see the shrinkage.

**THE WHOLE IDEA IS THAT WE WANT THE LESION TO SHRINK**.

If the cyst was infected or teared while doing enucleation and didn’t come out as it is we would go to marsupialization after finishing and do curettage.

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