***Surgical management of the cystic lesion in the jaw***

The aim of the surgical management of the cystic lesion in the jaw is to :
1-eradicarion of the pathology.

2-rehabilitation of the function and esthetic of the patient, once we remove the pathological lesion the defect will occur which affect on the function and esthetic.

-Cystic lesion :any cavity lined by epithelium filled by fluid.

In this lec. we are going to take the treatment in general of any cyst regardless its type and what is the deferent between each type of the management.

The most surgical management mean used in cystic lesion is enucleation then marsupilization or combination (marsupilization followed by enucleation or enucleation with curettage )

But in very few cases sometimes we need to make excision .

-Excision means: you excise a lesion completely (completely means u have to take the safety margin, the safety margin depends on the type of lesion , if its benign the safety margin will be 1-2 mm or up to 1 cm in case of aggressive benign lesion ,but in case of malignant lesion it will be up to 1.5 cm )

-enucleation : total removal of the cystic lesion by separation of the cystic lesion from surrounding bone.( we take the cyst with its capsule completely as a cyst , we follow the border of the cyst and remove it from the surrounding bone without removing the bone ! ).

The enucleation goals to remove the cyst with its capsule as one piece without fragmentation if it possible but it doesn’t happen all the time . sometimes fragmentation may occur !

The enucleation is more conservative than excision .

Most of the cystic lesions of the jaw have a benign behavior that are treated by enucleation .

Once we make enucleation of the cystic lesion the recurrence rate will be very low , but what determine to make an excision or enucleation is the type of pathology .

the most common cystic lesion in the jaw is the ridiculer cyst more than 70% of the cystic lesion in the jaw is ridiculer cyst ) which is treated most the time by enucleation .

-sometimes the cyst will be very close to the adjacent vital structures (ex; if the cyst in the mandible and very close to the inferior alveolar nerve , If I want to make the excision I will scarify the inferior alveolar nerve , but in enucleation we only remove the cyst from IAN and this may cause a numbness but the IAN still intact :D

* the advantages of the enucleation :
* 1- the pathological lesion will be taken out completely and all the lesion will be sent to the pathologist as whole so proper diagnosis can be assessed // in few words “diagnostic advantage”

2- Considered as an excisional biopsy that eradicate the pathological condition in one surgery ..

-An example ( plz refer to the slide if they are available) :

This patient has a radiolucent lesion ( arrow) ,this is a well defined 2 cm uniloculer radiolucent lesion related to apices the non-vital lower left 7 ,this is a typical appearance of a cystic lesion .

The treatment options :

1-We did the OPG .

2- under local anesthesia we could make aspiration first to make sure that this cyst is cystic fluid .

3-enucleation when you are sure that all the indication are go most probably to the cystic lesion .

\*by enucleating this lesion you made an excisional biopsy which is sent to the histopathologist to make sure of the diagnosis and at the same time if the diagnosis from histopathology was a radicualr cyst this mean I don’t need anything more and that’s it !

\*because the lower 7 is the cause of radicualr cyst it should be treated either by apecectomy or take it out if it’s non restorable and mobile o restorable and mobile or redo the endo treatment if the endo is not good .

 ***“I have to treat the lesion and We have to treat the cause of the lesion “***

-**Most** of the cystic lesion are *Asymptomatic* and they are get symptomatic when they are infected or grow to the large size and make swelling.

When we decide to enucleate cystic lesion we open periosteal flap .. then you find that either the cystic lesion perforated the plate of bone so you reach the cyst directly or the cyst not causing perforation to the buccal plate in this case I have to use a hand piece and bur to make a window in the bone to reach the outer surface of the cystic lesion, when we have access to the cyst we separate the capsule carefully from the surrounding bone using curette taking it out as on piece …

-Enucleating a lesion near the inferior alveolar nerve you will cause some sort of parasthesia , it should be temporary because the nerve bandles are intact and the patient must know in this case he may has parasthesia .

The time of recovery depends on how you traumatize the nerve ( not less than one month and not more than one year ) .

-even you are sure 100% that you have a ridiculer cyst you have to send the lesion to the histopatologist to make sure of ur diagnosis .

-when the result of the histopathology of the lesion was one of any type of the cystic lesion which is treated only by enucleation we tell the patient that he is done and he doesn’t need any other treatment because the recurrence rate is very low .

\* any defect inside the mandible or the maxilla\_ if the periostium is intact and other walls are intact “three or two walls” \_ the bone ( blood clot🡪organization 🡪 new bone )so we don’t need a bone graft .

We might use bone grafts in extensive defects or to accelerate the healing .. but bear in mind that if you want to use bone graft there should be no infection ..

-if the cystic lesion was very big, what is left of the mandible or maxilla after enucleation is very weak bone , in this case we need a *reconstruction plate(some times with bone graft )* on the mandible or maxilla to strengthen the maxilla or the mandible to prevent fracture because what remained of bone after enucleation is very thin borders of bone and we have to tell the patient to eat a soft diet to prevent any fracture .

\*\*The second way for treating the cystic lesion is marsupialization

 Marsupialization is a decompression procedure ,,

>> it is basically creating a surgical window in the wall of the cyst then we eventually evacuate all the contents of the cyst (fluids) decreasing the pressure and suture the lining of the cyst with the oral cavity (wherever it was (in the oral cavity, sinuses, nasal mucosa) you open a window and suture the lining with surrounding tissue) ..

\*\*ya3ne bafta7 flap lal cyst o b3ml feh window o bakhayto m3 ba2e l normal mucosa el mawjode bil oral cavity fa sart hai l cyst mottasele m3 l mucosa bl oral cavity .

-The aim of this procedure is to decrease the internal hydrostatic pressure in the cyst to shrink .

By the time, complete shrinkage and complete healing may occure by marsupialization alone or this shrinkage may allow the lesion to get smaller in size then we can enculate or excise it easily .

***Sooo the indication of marsupialization:***

1- to decrease the damage that may occur if I used enucleation ( parasthesia of IAN, loss the impacted tooth inside the lesion during enucleation that we prefer to keep allowing its eruption.

2- if the size of the lesion is very large and if I decide to excise this lesion so I am going to excise half of the mandible and major bone graft will be needed for compensation so marsupialization here is the best solution.

3-avoid injury of vital structure to save some structures as impacted teeth and avoid major surgical procedure in case of very big lesion .

Soo marsupialization may could a step in treatment of pathology or may could be the only treatment .

***Disadvantages of marsupialization:***

1-discomfort to the patient (zai ka2no mghara jowa tommo o maftoa m3 l oral cavity fa kol ma bddo yakol o eshrab il akil bifot jowa l lesion bser pain ) and the patient have to spend effort to keep the area clean and sometimes we put dressing and the patient have to come to hospital to change the dressing which is discomfort “need compliance “.

2-infected area and necrosis .

3- Poor diagnostic and pathological examination (as we are taking only part of the lesion).

***Another example***

This patient has a cystic lesion on the right side of the mandible ,the patient has impacted lower 5 ,this cystic lesion may could be either dentigerous cyst or keratocyt or could be inflammatory because the 6 is not vital , the easiest way is to make an enucleation , but by this enucleation i will loss the 5 and I will cause parasthesia because the lesion is near to the mental foramen .

So if I decide to go to marsupialization ( after aspiration to make sure the type of the cyst that we have ) I open the flap and just make a window on the surface of the cyst then suture the area by the mucosa surrounded and the area will be exposed ..then the shrinkage will occur but we need cooperative patient to keep the area clean …so by this technique bone filling will happen and tooth will erupt ( the impacted tooth will never erupt if there is no bone around it ..so by marsupialization we achieve some advantages .

***Another example***

A radiolucent lesion on the angle of the mandible extend to the ramus surrounding an impacted tooth (lower 8 ) , the mandible is very week in that area and this lesion it could be a dentegerous cyst and this tooth I don’t need it so I will take it out and most the time we treat the dentegerous cyst by enucleation but in this case if I decide to make anucleation at the end the mandible will be very week so in this case we make incision to go for marsupialization (aspiration at first 🡪yellowish fluid🡪infected cyst ) hen we make a flap .the lesion didn’t make any perforation on the buccal wall so we make a window by bur in the bone then we are inside the cyst ,then we suture the border of the cyst with normal mucosa and keep it under observation , the aim of marsupializaion is to decrease the pressure to decrease the size of the lesion ***not to save*** the tooth ,and to take the 8 out (which is the cause of lesion ) from the same opening .

\* complete healing after marsupialization may not happen but in some cases shrinkage will occur.

\*if the shrinkage doesn’t occur we go for another way of treatment , enucleation or excision .

\*some times enucleation alone as not enough so we go for marsupialization ( to decrease the size of the lesion and go away from the vital structure ) then we open again to make enucleation .

\*\*some times we make make enucleation with curettage (after enucleation we clean all the border of the surrounding bone by curette and you might get rid of 2 mm of bone around the lesion ), We do it in cases of fragmentation of the cyst especially infected cells), high recurrence rate, or with certain type of cystic lesion (Keratocysts) …

***-traetment modality of the cystic lesion***

1-enuleation.

2-marsupialzaion.

3-excision( in case of keratocyst ) because recurrence rate is very large

4-marsupialization followed by enucleation .

5-marsupialization followed by curettage .

***Q 1***: 1cm \*1cm ridiculer cyst surrounding upper central incisore?

***Trt***: simple enucleation

***Q2:*** 1cm \*1cm ridiculer cyst surrounding upper central incisors and was infected and once I open a flap fragmentation happened?

***Trt***: enucleation and curettage .

***Q3:*** small keratocyst that is far away from the vital structure

***Trt*** : excision.

***Q4***: big lesion on the angle of the mandible and I worried of fracture of the mandible .

*Trt*: marsupialization ,it doesn’t mean wrong if I go to enucleation ,but which is wrong if we have o keratocyst and we go to enucleation , because the recurrence rate will be very high , and when to decide later to go for excision you may expose your patient to a very large surgery .

***The decision to choose any modality depend on :***

1-type of lesion

2-size of the lesion

3-location (vital structure )