Second part of surgical complication :

As we mention in the introduction last time “a good dentist or a good surgeon has to be able to manage complications rather than simple procedure" . Usually that’s why many dentist they try to avoid surgery because sometimes unable to deal with complication.

Last time we mention many complications that’s might affect after surgical treatment will continue with second part, I know last time we discus briefly the (oroantral complication) , we go to details because it’s really important for us at this level.(in practice to be competent how to deal with oroantral communication because it’s can be traumatic to pt’s and surgeon )

What factors can lead or predispose to oroantral communication:

1. Extraction maxillary teeth.
2. Anatomical (large antrum" the alveolar height less than usual (which mean the fracture of alveolar bone force attached to root might be more possible ")
3. Large root (might be fracture to adjacent bone)
4. If we don’t have sufficient bone so, we suspect oroantral communication.
5. occlusion of the teeth
6. History of antral involvement (there no bone so it’s easy to complicate )

It’s happens it can be traumatic to pt can lead to maxillary sinitis and if persist can lead to oroantral fistula .

What’s the difference between fistula and complication :

After communication without closure or fusion to oroantral the communication lead to epthelization of tract definite epithelial canal which doesn’t heal as normal canal.

treatment :

That we can’t close fistula without excision of that fistula (if we make close to fistula doesn’t close so we need to excision the fistula, oroantral fistula is late stage of communication, if don’t lead to communication it’s lead to formation of fistula which is epithelized canal after the formation of initial fistula communication )

So , going back to predisposing factors , if you have risky factor its lead to communication , this lead to simple idea that we always need to take x-ray before extraction upper teeth ( to look the roots , shape max. teeth ) before extraction so that prevent ( which is the best way to deal with communication last time ) to occurrence of such accident.

and of course if you have a large roots , diverged roots its why to change its surgical plane to go for surgical extraction and avoid uses forceps and heavy forces which might lead to fracture of tooth and go for separation of root tooth and extract separately to avoid opening of the sinus.

Suppose that you extract the tooth and you suspect that much of oroantral communication happen, how do suspect that the communication happen?

1. See attach piece of bone with extracted root tooth, that mean there’s fracture of antrum floor “tip of root are attach to the floor , it’s very close “ , if you see a piece of bone that mean that the fracture happen and possibly there’s a complication . How you can test of that ? (( first of all try to avoid using probe at that site because may be fracture in bone but the membrane intact so try to perforate membrane will cause communication which might lead to sinusitis “ if the membrane still intact there no problem at all “ only close the wound or socket , so we avoid probing
2. Nose Blowing test , ask the pt to pitch the nostril and try to blow heavily and look at extraction site ( there’s bubbling “ fluid make bubbling “ so there’s air coming from the sinus so there communication
3. If we don't do the nose blowing test , Ask the pt to rinsing so the fluid comes out from the nose "out versa"

Ok, so we take an x-ray , That’s is the orantral communication after extraction , we see the loss of continuously of the floor , if you suspicions we take more x-ray if you need. but usually the dental practice we don’t act quickly if you suspected the communication.

Management:

Lets divide into 3 criteria:

1) Communicate of 2mm or less (small)🡪 usually 2mm opening can heal spontaneous by blood clots so what we need to do is we need to maintain the blood clot inside (we give the pt instructions of maintain sinus without excess pressure , no excessive breathing ,blowing ,give nasal decongestant so that the ostium of the nose is open which allows the fluids comes from the nose ,antihistamine ,if need ABX can give pt ABX and give good instruction good pressure inside to maintain the blood clot ) and usually it’s heal without any problem .

2) More than 2mm /less than 6 mm (the management not aggressive ) you can do figure of eight suturing to maintain the mucosa above the socket .

If you need to do remove or trimming little bit of alveolar bone , nearing the mucosa , figure of eight suturing , pressure and usually it also can heal by providing instructions to the pt.

3) More than 6mm usually it’s need intervention, for a dentist you can do buccal advanced flap ,Can do because advanced flap as we mention last time (make trapizoid flap) (kkkk) Inside the periosteum of the base which make the flap loose so you can advanced. and closed primarily with a good suture and give the pt instruction.

This managements are ok . if the pt does not have preexisting sinus disease (if the pt have already sinusitis, chronic sinusitis... etc ) this might lead to failure of the simple measures , usually it’s better to refer to maxillofacial surgeon to manage the case or if you feel the sinus disease is not really aggressive you can give him a course of ABX for one week usually when we do management of this case make sure the sinus disease fully control, otherwise these pus, acute sinusitis it’s will interfere with healing . if you not comfortable refer to surgeon.

This an example of large oroantral communication for a pt who lead extract of upper 7 that cause isolate alveolus (antral was large opening , isolate under extract /remove all alveolus , so there’s a very (large opening it was at least 8-9 mm)

as we mention last time we have different option we have buccal advance flap ,treat rotational flap if not work we can go for a (bidcal) “the flap with blood supply usually the buccal bad of fat so we took the buccal bad fat of cheek ,small incision ,in cheek to the area fill the socket and close fix primarily so flap transform to mucosa and usually it’s a very difficult treat so we just leave it of difficult cases and go for tongue flap :the anterior and posterior not flap that will cover the difficult take flap from the tongue and put it and suturing and keep the pt on INF, close these tongue flap for 2 weeks then we incision the tongue flap ,we rarely do it for oroantral communication fistula ,usually the beast treatment (buccal bad of fat ) .

Pt with none healing socket ?

treatment =closure in the right way , give an ABX, and it's still not close ,the pt come with (lymphadeno pathy ) tacking CT scan ,ABX for 4 months then 6 weeks then we take biopsy from skin near the lymph we will end with lymphoma , so we should suspect malignancy , the best guide to us time , the pt with these conditions ,should not have the condition last for 2-3 weeks , if we do right treatment "so always suspect malignancy if we don't have healing ulcer.

we rarely see pt with extreme fungal infection that lead to oroantral complication (distraction bone of the sinus ) but usually it's systemic infection . last year we have pt with systemic DM ,with very bad fungal infection that lead to distraction of sinus walls and floor with large opening that obviously can't close it with surgery . so remember that the other options in cases if we have resistance to simple treatment and if you have displace tooth particles or the whole tooth in sinus it need to remove otherwise ,this will lead to abscess formation of sinus and buss formation and again this will prevent the healing of oroantral complications.

The second most important complication that might happen after surgery

last time we discus intraoral bleeding that might related to the soft tissues ,hard tissues ,again prevention of bleeding very important .(good history can guide us the history of bleeding ( more than2 day bleeding suspect it's systemic problem it's might alarm to surgeon ,family history ,medication (make sure the pt doesn't take anticoagulant aspirin , ABX for a long time that's might affect vit.k production therefore affect the liver ability to produce the coagulant factors which might prolonged (bleeding ,chemotherapy it's suppress coagulation system therefore there's low "platelets ,WBC,HB" so pt will have anemia more prone to infection and will have more bleeding tendency " the platelet count will be much less ,so you can't extraction for pt who with chemotherapy treated unless he finish chemotherapy treated and number of platelets back to the normal .

so what to do to minimize bleeding during extraction ?

1/ careful handling the tissues .

2/clean incisions. bleeding can classified into : primary , secondary ,reactionary

primary bleeding: which happen during the surgery /extraction .

reactionary bleeding: few hours after extraction . what you think the factors lead to reactionary bleeding ? e.g. after 5 hours pt can't control bleeding . because lose of affect of adrenalin (effect of LA) but the most cause is pt compliance pt don't follow the post instruction make trauma to area of extraction lead to dislodge of blood clot ,don't put gauze ,so pt compliance the common sinario . bring the pt back to dental chair make sure there's no real active bleeding respect socket no active bleeding good lighting good suctioning apply pressure inside the socket wait for 10-15 minute and if all things are ok you can apply the gauze and send pt back to the home . if bleeding still there you should again rethink about what happen so we get back to previous concept of bleeding might be local or systemic .so we recheck the MHX again , suspect presence of systemic conditions send the pt for a blood investigation like (PT,PTT) which can give a good indication of intrinsic and extrinsic system conditions ,as we mention last time we have many blood clotting disorders like (hemophilia A,B, Von Willebrand diseases ,other bleeding disorders in function or number ,blood vessels disorders ,liver diseases (hepatitis) ,alcoholic .all of these pt can have bleeding tendencies so we checked so you have to make sure that have active bleeding that may cause serious complication .

1)bleeding and hemorrhage :

Common appearance might be alarm to inexperience dentist.

It’s a blood filling the area and you have to be a bit calm ,good suction, aseptic site ,if you need to do local control you make sure that you remove the granulation tissues from the socket and from the mucosa around the area to control the bleeding in the bone .

(Because any granulation tissues are very vascular ).

If you can’t control bleeding you can use some synthetic materials to control the bleeding we have many materials available in markets but the most common material we use it is (oxidised cellulose) generic name is(segoseiv) it’s a white mesh which available in different sizes . you bring it and put it inside the socket it’s will facilitate the formation of artificial blood clots which will aid in control the hemorrhage it’s very easy to apply (simple application ) and you might use the figure eight suturing to stabilize those materials like if we use (jerulse sponge, bone wax ) . We can use any of these materials to achieve good homeostasis, but we have one problem in these materials it’s may lead to delay the healing of this area ,but it’s not big problem because we have active /acute bleeding .

(TRAN EXAMIC ACID ): this material can give as mouth wash to facilitate bleeding control or I.V form ,but not common in Jordan .

Hematology investigation :

1. PT
2. PPT
3. INR

Make sure the medical history is clear and there’s no serious systemic problem lead to the bleeding.

2)Ecchymosis:

Common appearance that you might see in patients specially in age of 50 Y/O or more as you can see (fig )in slide redness/bluish in color appearance on skin in upper neck area around the facial tissues .

Why you think it’s happens ?

Usually if do large flap it may have bleeding which goes into interstial tissues fill the space then reaching to the skin. The problem in ecchymosis is alarm the patients

Management :

Nothing to be done

Reassure the pt and tell him it will be disappear with time ,so it’s not significant.

3)INTERACTIONAL EMPHSEMA :

Not very common but really happens after oral surgery .

It’s collection of air within the tissues .

What usually happens :

You make the force/pressure ,and it may happen in simple dental procedure . lead to sudden swilling in patients face with creputation/palpation during the procedure.

It’s significant to the pt but not significant to dentist .

The most important thing in (ineractional emphysema ) is good diagnosis.

Management :

Nothing to be done ,self limiting ,even ABX not really needed usually resorbed in few days .

4) dry socket:

It’s a complication that’s relatively common .it’s happens after extraction teeth especially mandible third molars can range from (2-5%) and in other studies up to 20% .

What is it ?

It’s failure of retention of blood clot inside the socket which lead to delay healing and expose of the bone presence necrosis of bone and can lead to really sever pain in the jaw then radiate to upper jaw to TM area ,severe headache and usually that pain is really bad.

But we don’t have any systemic involvement (no fever ,no bus in socket ),usually different from (infected socket ) the infected socket it has frank some……. Fever ,redness ,limitation mouth opening .

So dry socket are not infection it’s called (alveolar osteitis ) but the common believe cause is failure of blood clot formation or retention.

Grayish color inside the socket ,usually it's happens in 3-4 day after removal of the tooth. How do we deal with dry socket ? Usually first ,the tooth socket is gently irrigated with steril salin .we don't do remove granulation tissues by curetted because this is very

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| pain full .so we do irrigation only and give them painkiller if pain very bad. Synthetic materials like (alvogel )contains Eugenol ,which obtunds the pain from the bone tissues and benzcain as local anesthetic.theses materials put it inside the socket make good analgesics of the pain .usually reapply it every day in 4-7 days if needed. but the problem in these materials again delay the healing or don't apply these materials only irrigation. Again because it's cause really bad pain usually the pt's are very alarming.  Why does it happens ?  We don't exactly why it's happen but there are some predisposing factors lead to dry socket :( most common in lower teeth )  1)traumatic extraction  2)some female take (OCP) that's may to dry socket .  3) Some studies (high incidence usually in age of (20-40Y/O).  4) Excessive use of LA.  5) Excessive use of mouth washing.  6)active pericronaitis , because may lead to dry socket ,that’s why we don’t prefer treat pt with active pericronitis ,it’s better to delay the treatment in this case .  7) history of dry socket .  8) poor oral hygiene .  9)smoking  10) Paget’s diseases .  These factors can lead to more possibility to dry socket.  That’s why when we take good history may lead to minimize these complications.  How we can control and prevent infection after surgical procedure :  Usually good preoperative preparation, aseptic technique, you have to be atraumatic as possible, good cleaning of the area of wounds. If we do bone removal or suction of the tooth (separation) those partials can stay inside the socket, which can be infected so you need to do good irrigation to minimize possibility of leaving foreign bodies inside the socket . drainage if you need do sometime if we have large swilling in submandibuler area .  Oral hygiene are really important to prevent infections.  Delay healing why happens.  (healing persist in 2-3weeks after extraction )  Usually most common locally (poor technique )  E.g. if we do closure in the flaps and the edges of the flaps was on cavities or on bone deficient this will cause collapse of bone edges inside the cavity .so make sure you clamps incision to be away from the site of surgery and it should be lay on healthy bon. tighten of the flaps, So make sure you don’t tight the flaps a lots because these may lead to ischemia of the edges necrosis and again failure or delayed healing in this area.  The local cause can be by dentist or surgeon.  Delay healing or failure to heal , it has to be alarming. It’s should not be stay more than 2-3 weeks , otherwise you should suspects other systemic condition if the patient not improving by checking MHX and make sure no malignancy inside the socket. |