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## - I refered to last year sheet and listened to this year recording to check for extra informations

# Management of complications in oral surgery

Complications are of two types

1- related to hard tissues

2- related to soft tissues

The golden rule in oral surgery is the prevention of the complications which lead to decrease the severity and incidence of these complications .

Prevention includes :

1- Thorough pre-op medical assessment

2- comprehensive treatment planning

3- skills 🡪 if you take proper assessment and you find a procedure that is very difficult , the wise decision is to refer to a specialist that has better skills and experience .

Examples :

1- taking proper radiological assessments 🡪 extraction of tooth 🡪 look for dilacerated roots, closeness to ID canal or other vital structures like the maxillary sinus , presence of a cyst and expression of puss or blood

2- medications 🡪 some patients deny taking any medications specially anti-coagulants , which complicates the procedure by extensive bleeding , drug-drug interactions.

3- DM🡪 can face hypo/hyper-glycemic episodes .

4- Hypertension 🡪 not to use an adrenaline containing LA

5- Corticosteroid 🡪 the risk of adrenal crisis🡪 under stress condition 🡪 the body doesn’t produce the needed corticosteroid due to the feedback inhibition of the adrenal gland by the extrinsic steroids medications. This crisis can be prevented by steroid cover of doubling the taken dose .

4- anxiety 🡪 the procedure is not going to be an easy one , the pt will shout , faint , panic ..etc , even affecting the dentist’s copping skills . proper assessment , might change the type of anesthesia into GA or sedation, to prevent failure of providing the treatment

5- pain and post operative pain 🡪 the pt’s main concern , using pain killers ,and recovery drugs like steroids to minimize the swelling , prescribe NSAID and panadol extra

6- surgery 🡪 good access with a proper flap to precede with the procedure in a faster manner , mimnimze the number of flaps , to minimize the tissue destruction , proper reflection to visualize the anatomy

7- proper force 🡪 to prevent fractures , control the force which comes with practice, to prevent soft tissue injury

8-gentle handling of soft tissue—> to minimize trauma like ulcers , lacerations , bleeding and this also comes with practice

9-proper handling of wounds🡪 to minimize infection because of improper wound debridement

What complications can happen during the procedure itself ?

1- soft tissue injuries

a- tearing of mucosa by the forceps , inadequate flap design or excessive flap reflection

solution : in case of torn jagged ( torn mucosa that lost its blood supply) has to be excised and reshape the flap to reflect and suture back

b- palatal mucosa perforation 🡪 secondary healing intention it heals by itself

c- flappy mucosa 🡪 close by suturing

d- abrasions 🡪 by the handpiece friction or by the generated heat

if a frank laceration 🡪 close it

if only abrasion 🡪 keep it moist by giving the pt instructions to use Vaseline, or antibiotic ointment 🡪 to minimize scar.also, follow up appointments to monitor the healing without scars

2- osseous structures injuries wither the alveolar or jaw bone

a- fractures of alveolar bone , specially the labial plate of upper canine and specially using a straight elevator 🡪 it’s bad to lose bone structure that would compromise implants

b-fracture of the upper 1st premolar or 1st molar with 2 roots , either roots would fracture 🡪 try to move more toward the buccal so if a fracture has to happen it’s easier to remove a fractured buccal root than palatal root.

c- fracture of lower anteriors labial plates because of excessive force

d- upper molars and sinus floor fracture leading to oro-antral communications

example ; extraction of an isolated upper 7 resulted in a complete alveolar segment fracture with a several centimeters oro-antral communications 🡪 that was closed with a buccal fat pad with a blood supply that transforms to mucosa with time

note: age of the pt is important factor of assessing the hardness of extraction , as the pt is older in age means more bone density and less resilience 🡪 it easily fractures and more difficult extractions

these older patients are usually indicated for surgical extractions with flaps and sectioning of the roots and crown even in case of very long root to prevent bone fracture and loss

again , for the upper molars with roots close to the sinus 🡪 use sectioning to remove the roots separately.

Management of alveolus fracture :

If a fracture of alveolus and mobility of the segement is detected

a- assess the blood supply , if it was adequately attached to soft tissue (i.e. periosteum )

it should be kept , but if it lost its attachment to the soft tissue and blood supply it’s removed

when attached to soft tissue 🡪 it has to be stabilized by wires , composite ,ortho appliances , night guards to fixate for 2 weeks for healing

b- sharp edges of bone 🡪 remove them

c- bone not attached to soft tissues🡪 has to be removed

d-maxillary tubrosity 🡪 it used to be very important , try to keep it even when it fractures specially when it remains attached to its blood supply 🡪 to help with retentions of future prosthesis and to prevent oro-antral communications

now, it’s of less importance why ? because implants can be used as means of prosthesis to restore lost teeth .

3- injuries to adjacent structures

a-nerves

mostly affected are

IAN,bucal , nasopalatine, lingual and mental nerves which are all branches of the trigeminal nerve

Rarely , injuries to the facial nerve as it’s very deep in the tissues (parotid gland)

nasopalatine or buccal nerve are commonly injured during extractions causing very transient parasthesia that the pt don’t even complain of

while IAN and its branches injury are more severe including : 1- lingual nerve damage cause loss of chorda tympani taste sensation

2- mental nerve lead to hypo functioning and loss of sensation of lower lip and lower anterior teeth

What if nerve injuries happen ?

1- no management as the pt may improve , this is dependent on the severity of nerve injury , if mild 🡪 it’s monitored for improvement within few weeks to few months

Some case , microscopic re-suturing the nerve ends

Depends on severity and location

2- Some medications can be prescribed, mostly vitamin B-12 , there is no evidence that it improves neuronal regeneration

In facial palsy 🡪 steroid s are given to prevent inflammation and swelling of the nerve and compression on the parotid tissues

4- TMJ injuries

a- lack of support 🡪 can be chronic effects like clicking, pain , limited mouth opening , very sensitive to any TMJ injuries or diseases in the future

solutions: avoid excessive force with prolonged sessions and lack of support , and if any injury happens recommend heat packs with soft diet , jaw rest and NSAID’s .

lower 3rd molar extraction with a straight elevator moving up not down 🡪 and the pt should not feel any pain or pressure into the TMJ

example of a TMJ complications: pt jaws were locked open after the extractions ( because of the meniscus displaced anteriorly to the condylar head ,this called dislocation of the TMJ

management :stage1🡪 the mandible is supported and pushed inferiorly then posteriorly ( downward to pull the condyle bellow the level of articular eminence then backwards )

stage2🡪 in sever case a reflex of muscle spasm of the masseter will prevent stage 1 success 🡪 try LA inside the TMJ space or IV sedation with Midazolam for muscles to release the spasm

TMJ dislocation is dangerous and it increase chance of recurrence of dislocations

Note : if the pt presented with a sensitive TMJ what’s the proper management ?

1- shorten the session

2-controlled force

3-propr support of the mandible

Note: not only dislocations can happen to the TMJ , but also fractures , when locked open mandible happens it’s better to first assess by an OPG before proceeding with dislocation management

Good luck