surgical removal of wisdom teeth | Prof. Hazem Alahmad

Last time we discuss the importance of lower third molar surgery , why its happen and the basics.

WHAT DO YOU THINK USUALLY WE GET IMPACTION OR UNERUBTED WESDOM TEETH ?

Last time we discuss many reason , generally speaking ; impaction more common in third molar do you to etiology its vary " lack space , large mandible compare to occlusal size of teeth "

Speaking about different theory

In clinical examination we need to :

- examine pt extra orally " make sure no active infection "
- examine intraorally " operculum covering the lower third molar"
- (cant hear) we need to go for sedation or GA , for basic examination skills that we use for all pt generally in addition to specific of lower third molar

Classification system ; usually we utilized the angulation of third molar :

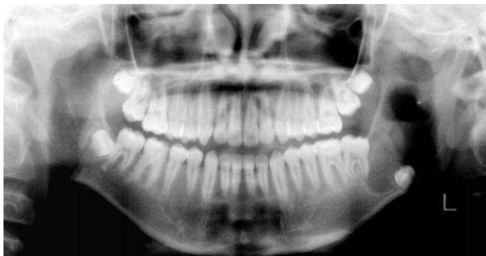
- mesial(the easiestsurgically to remove)
- distal (is more difficult we need to go remove bone , suction the tooth , in addition to elevation of tooth)
- vertical
- horizontal

Another classification system that more specific its relation to space between ramus to the second molar and the depth in the body of the mandible

Radiography ;

we usually use basic **panoramic** x-ray in addition u can go for **con beam CT** or **CT scan** if u think the existing third molar or pathologist little pit complicated or related to vital structure .

(u can see the third molar associated withradiolucency in this case pathology where u each go for panorama x-ray that why much better than periapical x-ray).



Indication for removal generally

Pathology

Another case of trauma

TODAY we go to talk about surgical technique , how weoperate, how we remove those molar , the flap type , precautions in relation to anatomic region .

FLAP :

Generally speaking we have 2 type of flap that we can use in third molar.

generally**lower third molar** is more difficult than the **upper**third molar .

The upper third molar usually less difficult if its fully erupted :

- usually the bone in the maxilla manly canscellous bone .
- resistant's not very high

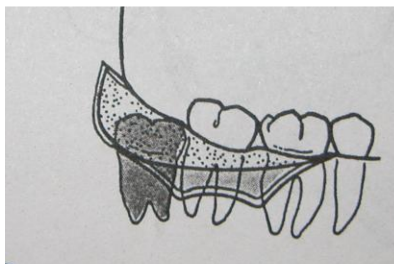
therefore indication of strait elevator and forceps can realty pull it out easily unless the tooth impacted fully its not difficult ., if its fully impacted can be related to the sinus, u can loose it , can go to the sinus and even in this case probably we don't need to take it out .

so usually the third molar more difficult we are taking about tooth that is located in anatomical area , where 's the bone very dense buccally and lingually, we have external and internaloblique ridge , basic principle ofexodontia where we dilate the socket buccolongually doesn't apply here if u try to apply the forcepswith heavy force it may fracture the crown - root or even mandible . that's why we don't really follow the basic principle of exodontia that utilized in other areas , we have to find an application for it ; sometime we suction the tooth , we have to have probersurgicaltechnique to remove it with minimal morbidity .

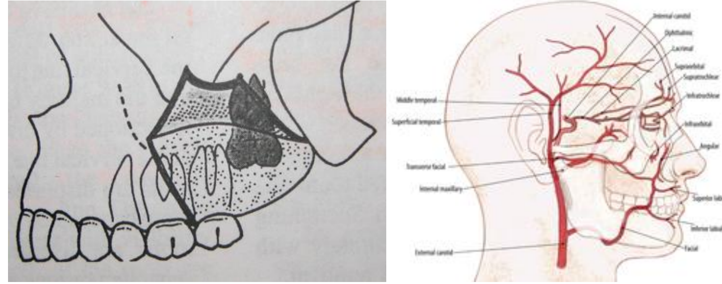
HOW WE CAN APPROCH THE third MOLAR ??

We have two option :

- u can go for envelope flap as we can see and extended to mesial aspect to the lower first molar and go distally up to the ramus , we can elevate the flap can visualized the bone in relation to the lower third molar seven and six



- or u can go for triangular flap u take the papilla distal to lower 7 go down with the incision but be careful not to go deep , otherwise u can Cath the buccal branch of facial A " come from the neck up to the angel of mandible and its goes anteriorly and give the branch "so if u catch with the blade this might to cause profuse bleeding which is trouble some time . so try not to go deep to the sulcus , take the papilla with u and then go distally.



WHAT DO YOU THINK ONE U PREFERE ?

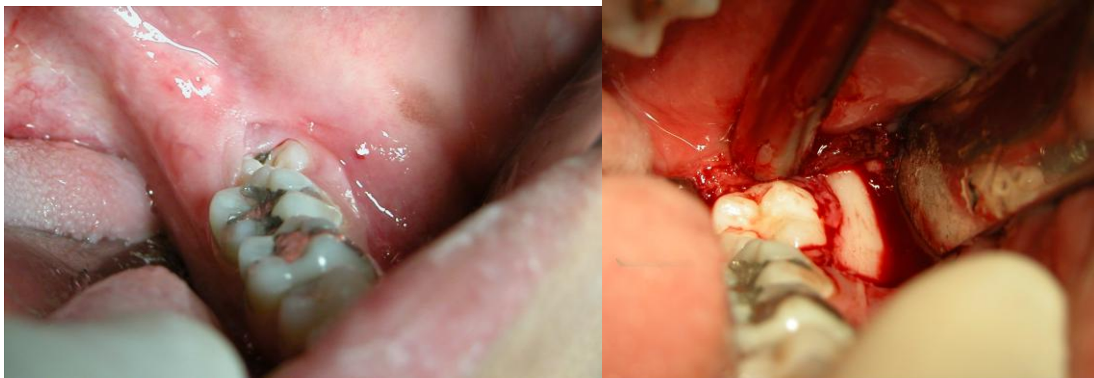
Envelope : can be more difficult to visualized the area we just talk about horizontalincision need good retraction that's may tearing the gum , what's if u have some form of periodontist / gingivitis related to 6 7 it may cause gum recession , that why properly its saver to go with triangle flap just know the 7 6 make triangle flap with deep expose the area .

what important thing to remember ; flap covered withprevious lecture its always important to have a :

- good access
- good vision
- not try to be smart and make a very small incision so u think u protect the pt surgery become really much more difficult u stop see any thingand you start drilling any thing . so make a wide flap identify bone- tooth- structure so that u can proceed with surgery easily and that u know healing doesn't depend on the size of the flap " small flap heal as large flap " so that its important .

In the upper third molar area again access is very important in the case of remove the upper third molar as we can see we extend the flap more to the mesial aspect to the upper 7 just make its anterior , again we make release incision and then elevate the hole tissue up , remember to ask the pt to close the mouth partially that u can visualized the area without interruption by the coronoid process (pt open wide the mouth the coronoid just tenderly vision the upper third molar)

so we choose ether the envelope or triangleflap , this clinical case show the third molar which is partially erupted what do youthink the indication OF REMOVAL IN THIS CASE ?



commonly the pt come with some clinical pic , realty its very difficult to clean the gum in this area " the tooth brush not really go posteriorly , the plaque and food accumulation case of recurrent infection to operculum which called<u>pericoronits "</u>.

so we said last time if u have recurrent pericoronits more than twise year its indication for extraction we don't do parpictomy or excision ofpericurum because its come back , some people belief we just have laser and cut the gum its not come back ,in this case especially if the pt already 23 24 year old maximum agefor eruption (is around 24)there's no chance for third molar to came out .

so in this case its indication for extraction after taking proper x-ray we did triangle flap ,as u can see the white area is bone this very clear , sub periostealincision u have to see the bone some weperiosteum incision mesialreleasing flap and distally the ramus , the cheek retractorapply so u can visualized the area . in this case we try to apply the strait elevator medially in this direction and move the tooth in distal direction if its come out no need for bone removal if doesn't u need to think about removing bone to allow easily removal .

HOW TO REMOVE BONE ?

- Usually apply small hole start from mesial aspect of third molar distally around the crown , we don't really cut bone lingually , as we said last time the lingual nerve anatomically just located in the area so u avoid cutting the bone lingual to minimized the trauma to lingual nerve.
- so we can remove bone mainly by hand piece" round bur slow speed "
- if u have good experience and the pt be cooperativeunder GA u can use chisel and hammer usually under LA its not preferable to use these instrument because its can frightens " make vibration in the skull " think <u>usually the safestprocedure by use slow speed hand Pease</u>

Lingual aspect as we said avoided . as u can see in the diagram try to uncover the maximal bulbosity of lower third " as u know the crown shape is convex so usually if the bone covering the convexity of the tooth , these an obstruction for elevation so try to uncover the convexity of tooth so that not reapply the elevator come out easily "

Some time the bone removal not easily if u want to minimized morbidity after surgery we need to think about combination of bone removal and suctioning of the tooth .

remember the suctioning of tooth :

- not rely do any morbidity
- don't cause inflammation ,swelling.. suppose we don't cutting bone because teeth do not cause an exaggerated of inflammation response after removable

when u remove bone u :

- target the inflammatory reaction
- destroy bone cell
- cytokines come to blood steam cause hyperemia cause increase in the blood vascularity to the area.
- edema
- swelling
- pain
- the conventional " usually story " after removal of third molar limitation of mouth opening

so if u are clever dentist u try to avoid bone removal as u can as possible so thatdecrees morbidity . How to do that by try combinesuctioning with bone removal , how we suctioning again by hand Pease ,chisel..

for example maesioangular as we said the least difficult u can for example cut the distal half of the crown as showing in this case , resistant will become much less , so usually the elevation is easy . if u don't cut the crown imagen how much bone need to remove to just remove the tooth in addition weakness of the mandible and we show last time a case with dentist not experience he cause fracture to the mandible ..

so remember u taking about area with weak bone in the mandible ,Lets say female pt with small mandible lots of bone cutting excise force can easily break the mandible So again think about suctioning of tooth

In case of horizontal impaction think about cut of all crown as we see here and then elevate each rootseparately using Cryer

Vertical impaction is pit more difficult need more bone removal so we suction the tooth in the middle then we elevate each rootseparatelyespecially with curvature root

Distal angulation the problem manly in the ramus so we need to remove and corinoctomy in addition to bone removal

In maxillary teeth we don't really need to suction , as we said the bone very soft relatively in relation to the mandible so we don't need for suctioning or chisel because u might loss the tooth . so just allow for implication point as u can see remove bone and then u can apply strait elevator .

In case of third molar the strait elevator its really magic we don't apply the forceps , forceps only if theremobility of tooth.

usually the main instrument in difficult extraction case its <u>STRAIT ELEVATOR</u> , theforceps can be use for simple teeth . also in RCT tooth its very fragilethat's why the strait elevator is good instrument , need skills, elevator Cryer can be reallya large important in difficult situation.

so delivery with elevator usually we don't do luxation , no excess force to avoid fracture tooth – mandible -tuberosity of maxilla . as u can see we can apply messially or buccaally depended on the shape of the root " that u Appling to the area least resistant "

Debridement of wound

- debridement clean , remover chips peace's of teeth – bone - debris
- irrigate with saline
- sharp edge we just cut down really case irritation to the gum
- and try to close primarily , usually we close it by using one or two suture and the Prof. personally leave the mesial are open so that hematoma or blood accumulation not really happen inside the wound its just come out , will minimized the chance of having hematoma extra orallyand a huge swelling so just allow as u can see the mesial areaevacuating the blood that may for the area

when extractiondeciduous teeth remain " healing masticatory retention " usually no problem there granulation tissue even if the food impaction if its irritate pt u instruct the pt to use syringe and irrigation . but the food not reach the mesial area because its touch the bone and we know that the purpose for suturing not to wounding bot to position the flap in the right place for healing (healing doesn't be by suture)

when we do we need suturing as a concept ?

when there'sflappy edge , if the gum fixed anatomically in the properplace no need for suturing , but if its flabby so its not healing in the right passion so we do suturing so the main advantage(TO HEALP ANATOMICALLY REACH THE TISSUE IN RIGHT POSSION NOT TO SEAL " ITS PHYSIOLOGICALLY")

Post operative care

Most of the pt elective , young , healthy , worry about pain-swelling . so its important to minimized the anxietybefore surgery HOW ? , How can u minimized pain after lower third molar surgery ?

The way we do surgery is very important . if u a gain consider suction ,minimized bone removal , all af this can reduce inflammation and give pain killer (3 group) :

Fist one : simple (paracetamol (content : acetaminophen), Panadol extra) its consider as a mild analgesic and have some antiviral action so its can be given in simple case .

Third molar surgery pain relatively moderate so simple paracetamol with caffeineor Panadol extra not really enough so you can go for non steroid (2 group)

Second one : many many medication that can be given , most important dental analgesic (Ibuprofen) can be given as COX inhibitor .

remember u need to check the medical history , may pt with irritation GI which is very common. what if ur pt has gastric ulcer what the pain killer that can be given ? ; generally speaking of gastric ulcer cant go for ibuprofen. selective COX (levodoxin , celebrex) its don't work on stomach so thisMinimizing the effect the irritation of GI . why not give Voltaren IM " we taking about systemic effect not topically "

in the past the most common non steroidal medical is aspirin (cyclic acid) not use as pain killer its used as antiplatelet but in the past it's the main non steroid drug use for pain so the GI irritation happen , initially they think its come from cyclic acid cause topically effect irritation to stomach realty when there expiration to COX action within cellular level " we talk about some thing that reach blood stream not topically " usually the IM IV have the similar effect to the stomach so be carful its not really enough to give IM for pt with GI irritation

Third group : more stronger , mainly opioid (morphine , sulfate and derivative) not OTC drug u have to be carful its may cause. sometime if u have no choice u might need to go to stronger medication to control pain.

generally if pt have gastric ulceration we go for Panadol extra OR this derivative (2 tablet / 4 time a day) dose 1000mg to control pain .. ((8 g can finish the story :p cause liver toxicity))

Steroid can be useful in oral surgery (magic drug ; can help in many situation its stronger medication anti-inflammatory in cell membrane " lipoxygenase " higher level than" scyloginase" so its block the lipoxygenase so that why its minimized the production inflammatory mediator (cytokines , all messenger that cause pain , swelling)..that's why usually its givenpreoperatively and postoperatively in case of bone removal and increase inflammatory response we prefer steroid in these case of man. Max. surgical (DEXTAMETHASONE that given 8-4 mg IM pre and after usually for 2-3 doses) that given to expected pt with inflammatory response

Antibiotic :

Given or not ?

Generally it's a activator , mouth is dirty area , the importance is to do aseptic technique and that set and no need for antibiotic , some dr. prefer to give antibiotic before such surgery (its dependent)

When given prophylactic antibiotic it will decrease the incidence of infection : can be given up to 1 g with no harmful:

Prophylactic differ from therapeutic , can given up to 1 g as we given to infection endocarditis which is more dangerous , if u don't need to giveprophylactic u can go for preoperative dose 1 and maximum postoperative as we said((aseptic technique promote clean environment , autoclaveinstrument make sure every think under control)

Bad cross infection for extraction lower 6 with 3mounth pus cause ostiomalits in the jaw , treat by 3 week hospitalization to control infection

Swelling control by steroid, non steroid and technique it self

Complication:

Interoperation , early post operative , late post operative

Intraoperative complication and prevention . we reallywant least complication so prevention is the best .

A good dentist has low incident complication if its happen should have to control .

How to prevent complication by :

- good preoperative plane
- assessment
- not go for any thing that cause
  1. trouble for u
  2. injury soft tissue- laceration gum-tounge- cheek ,
  3. injury to the bone, fracture alveolus man. Max. ,can go to max. u can approach max. sinus especially upper third molar can cause intra complication
  4. Oroantral comunications
  5. fracture teeth " it self ,root , tip
  6. injury to adjacent structure manly IAN , lingual nerve " which just tough the mandible mesial " if u do retraction with instrument lingual u might injury to lingual nerve pt complain with paresthesia +disturbances of taste.

Sometime in this case the root in the canal with clinical symptom what to do ?

- its indication for extraction , the tooth actually in the canal with panorama “it may be overlap”
- first u need to make sure its within canal so we do cone beme
- every pt have to be consent for any complication epically this case (big problem to have permanentparesthesia)

Important to know , incident of injury to nerve related to Experience of operator , usually the junior don’t have skilled and using instrument vertically reach the canal , with skilled dr. its faster and have not to reach the apical point .

Second the option : what to do fit really within the canal and pt with paresthesia we have 2 option :

First ; coronoctomy : most commonly use , cut the crown and leave the root its will closure by soft tissue , its may cause mobility in the root cause pressure affect the canal .

Second(((discover by Prof.Hazem))),

- extrusion “ pull out “ of third molar
- put band and microscope between 6 and 7 as u can see
- slow process almost 6 month
- natural bone deposing between root tip and canal
- cant leave tooth after removal of band because tooth will relapse again

U need to be carful with “ technique and consent and x-ray “

Paresthesia related to low skill

Postoperative:

- Bleeding
- delay healing and infection

Manage bleeding ;

- pressure ,
- make sure there’s no injury to any vessel ,
- use hemostating agent ,
- make sure pt don’t have systemic disease and take medication (anticoagulant “ warfarin” , antiplatelet , aspirin) or hemophillia

Impacted tooth horizontally without symptom don't taking it out , if its near the canal or inside canal don't do symptom because symptom mainly related to crown when its exposed without clearance mechanism , its related to adjacent teeth (angulation slight mesial causing pocketing between it and 7 make periodontal problem , cares distally to 7 so protect the 7 by extract 8) , in very rare case its make pressure and pain related to TMJ . if the tooth fully impacted don't cause problem even if it with pathology " cyst , plastoma " … impacted teeth in the ramus u can leave it .

Impacted tooth stay for long time to 60 70 year old , pt become fully CD after 70 old with resorption ridge tooth reach the surface

How can we prevent lingual nerve damage during surgery ?

- Flap design, make it buccally
- bone removal , buccally
- retraction we don't apply periosteum elevator in lingual tissue
- when we do suction to tooth we don't need to cut the whole crown we just cut 2/3 or ¾ from buccal aspect then use strait elevator , no need for full crown cutting because it may reach the lingual bone easly because its softer … prevent lingual trama lingually

Swelling , pain andbleeding not that problem it stay for 2-3 weeks but pt with paresthesia stay for ever to 1 year it's a realty problem so be carful in neural problem .

Upper third molar disappear when extraction :

- To sinus
- Swallowing : u need to make sure where its if its in the lung it may cause abscess ,when its go to lung there suffocation " alarming sign " to take a chest x-ray , no problem if its in GI !
- reach infratemporal fossa just to area medial to coronoid and TMJ in this case x-ray if not visualized then take CT scan then flap and try reach the tooth , if its not remove its cause limitation mouth opening .

THE END ☺

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