***Sheet no: 8***

***Refer to slide* no : 5**

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***Techniques of local anesthesia***

 ***in maxilla***

This lecture will *talk about techniques of anesthesia in maxilla , concentrating in scientific* basics *of infiltration .the most common technique is infiltration( mainly in maxilla), then nerve block technique(mainly in mandible).*

*the techniques in maxilla differ from the mandible and that related to anatomical structure of the bone .the bone in maxilla is* *cancelus so the diffusion is easy ,while in mandible its thick cortical bone .*

*the roots of maxillary teeth are separated from the soft tissue on the buccal aspect of the bone through fine cortical plate or plane that allow diffusion ,verses mandible its dense cortical plate.*

*But In some cases when we want to extract upper canine,* *u will notice when u start the extraction ,that the patient feels pain and this happens because the anatomical position ,the length of the root and the thickness of its buccal plate , so we have to give him a bit more of local anesthetic amount.*

*The Objective of local anesthesia infiltration is to deposit the anesthetic solution close to pulpal nerve supply, to enter the apex of the root ,it should go as possible as can to apex (important) .by this way we achieve the right anesthesia .*

*The patient should decline at 30 degrees to the vertical ,the operator stand or sit at right side of the patient when giving LA in maxilla >>>> in surgery standing position*

*in cons >>>> sitting position.*

*Note ;the sitting positions 3 9 6 12 are in the book and u can read about it but its not included .*

*The patient opens his mouth widely to allow the operator to insert thumb finger of non-dominate hand into buccal sulcus so giving LA depends on non- dominate hand that explores the area (sulcus) .*

*There are Two methods for retraction lip and cheeks but why you are should make a good retraction ?*

*1.to increase the visibility .*

*2.and going to target area instead of another area like lip for example so be careful*

*The retraction methods achieved in 2 ways :
1-by holding the tissue between the thumb and index
 2- by using middle finger alone and this leave index and thumb to act as a rest of syringe by this we can control the syringe.
remember >>in extraction the rotation of tooth at the end is toward buccal becoz the bone there is thin .*

*short needle is used in infiltration and long in nerve block infiltration but that doesn’t mean we cannot use the long one for infiltration.*

*stretching and tightening the tissues during giving an anesthesia has an advantage and its very important ,its increase the visibility, stimulating the pressure receptor in this area and adaption occur so less pain* ☺

***Important*** *>>> there is* something *called cross innervation* *when we give anesthesia for two upper central so in extraction give LA in middle area of upper jaw and the same to lower anterior****remember****>>> that lower centrals and laterals anesthetized by infiltration.*

*The lip and cheek are retracted upwards and outwards to increase your vision filed and to stretch the mucosa to decrease pain ,and the needle should be inserted through taut tissue not loose \**

*frenay area should be avoided because its very painful area.*

*Usually the needle that is used for buccal infiltration is* ***30 gauge*** and*its short and narrow .*

*The penetration of the needle is high in the buccal sulcus to reach the apex of the root and this allows the deposition of solution into submucosal tissue.
 in upper anterior region The needle should be parallel to the long axis of the tooth in mesiodistal plane*

*The angulation is 45 degree* ***except central*** *is parallel to the long axis of the root .*

*The needle is angled toward the labio palatal plane in the lateral tooth..
\*\*as we close to the centrals the plane become more parallel.
the shape of the arch is different from one to another so u have to control the inclination of needle properly to reach the apex.*

*The needle inserted through mucosa to depth of few millimeters then doing an aspiration (but not usually used )*

*Usually the nerve come with artery and vein so when u give ID bloke be careful of neurovascular bundle in mandible .while in maxilla there are terminal nerves and vessels so its much easier.*

*\*\* never doing block without aspiration in mandible*

*why ?\**

*Becoz all dosage of LA will go to vascular circulation ,and then the patient will faint (shock) or cant response to LA any more because all solution go to circulation which is very bad* ☹

*\*\*Doing an aspiration help us to change the site of injection if needed.*

*It’s important to give the local anesthesia slowly ,take your time 20-30sec In This way you are allowing small amount to go to circulation ,pain is less and you aren’t make sudden ballooning in the tissue.*

*When bleeding on the site of injection happens, we have to do a pressure with gauze and wait 2-3 min*

*\*\*the most painful anesthesia is* ***palataly***

*We have two ways to give palatal anesthesia ;
1)we go 5mm away from mucosa and give an injection
\*\*in the buccal infiltration we give 2/3 carbole ,but In palatal anesthesia* *just few drops is enough Or I give my injection palataly until the site of injection become little whitish in color .
Because giving an anesthesia palataly is much more difficult than buccaly u have to tell the patient that this injection will be a little bit painful l (some of communication skills)
\*\*try not to force needle during injection*

*The areas that will be anesthetized buccal gingiva ,buccal Periodontium,buccal mucosa and part of cheek because all of these are innervated by the same nerve but the palatal gingiva will not be anesthetized*

***\*\*Palatal injection technique:***

*The buccal anterior, middle and posterior site is innervated by anterior, middle and posterior superior alveolar nerve*

*While for palatal infiltration there are 2 nerves :we give nasopalatine nerve (from canine to canine) and greater palatine nerve posteriorly (supplies mucosa adjacent to molar premolar canine ).the mutual area between these 2 nerves is canine area.*

*\*\*The greater palatine foramen is located palato distaly to the second molar not the 3rd one and this is in relation with gage reflex when I go more distaly the gage reflex will increase.*

*Greater palatine nerve done by block or infiltration*

*2) from middle palatine suture drops the tangent line to the gingival margine of the tooth that u want then gives LA perpendicularly in the middle of this line .*

***Exception***  *: regarding palatal injection of upper wisdoms I have to go more mesialy from bisecting line(perpendicular on tangent) , to avoid the anesthetization of soft palat.*

*\*nasopalatine nerve supplies the anterior palatine area (premaxilla)up to canine area.*

*The mouth is widely opened with little bit extention of the neck,topical anesthesia may be applied with pressure on incisive papilla ,the needle is inserted at one side of the papilla for a few millimeters ,aspiration injection 0.2ml is enough.*

 *infiltration of few drops palatal to the lateral incisor or canine may be used instead of nasopalatine nerve bloke just if one or two tooth have to be removed but if there was a wide area to work in it and several teeth have to be removed you must give a nerve block.*

*In Nasopalatine nerve block go inside the incisive papilla >>> inside the canal (it is painful )>>>then you give a block anesthesia.*

*The nasopalatine nerve block anesthetize the soft tissue and the bone of the anterior hard palate adjacent to the six anterior teeth\*\*\*\*\*\*.*

*\*\*infiltration is always for simple procedure*

*Good luck ☺*