Lec;8 sheet,6

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Cons 3

Pulp :-

There are 3 characteristic for pulp that makes it unique among Body tissues ;

1. sitting in solid chamber supported by either dentin or cementum
2. collateral circulation , which is not present in other Body's organs
3. It has no space for swelling
* Those three characteristics makes the pulp quite resistant to gingiva
* Dental caries is the Enemy No. 1 for Pulp & tooth
* Dental caries if not treated it will go on & on deeply until it reaches the pulp and once it has reached the pulp Then, the tooth has to have treatment cuz, it will lead to inflammation and necrosis .
* Mechanical injury due to trauma or wear to the tooth structure also an important manner that may result in pulp diseases
* Examples of Trauma injuries is when one person give u a punch or even when fall down
* Another form of Mechanical injuries can also be seen at your clinic such as dental procedures itself as what u do for cavity preparation , yes it can irritate the pulp
* So,These all factor may affect the pulp , even attrition and abrasion of teeth will insult the pulp
* Heat-generation while cavity preparation will burn dentin and cause inflammation to pulp
* clinicians in the past They used to use "Arsenic" --زرنيخ,Formaldehyde, and citric acid as ways of pulp monification! , But they didn't know that these agent cause Pulp death , they havent do RCT as an endodontical treatment becuase nowdays -instrument havent been available at those old days
* The Dr. showed up a radiograph about How do monification looks , where there is no apical lesions and said that we can do monification if we have vital pulp only , but that of course can't be done in a necrotic one , monification is no more being used nowdays
* We are going to talk about ; reversible & irreversible pulpitis , Tooth calcification and necrosis ,and Peridontal ossification , These are the major conditions we are dealing with usually

* **Reversible Pulpitis** (inflammation of the pulp) :-

 • Reversible Pulpitis is a slight inflammation of the pulp resulted from dental caries as we see in shallow cavities

 • Pain will be sensed by stimuli & will be subsided - disappear- upon the removal of stimulus this is the main symptom

 • The diagnosis of pulpitis is so easy, we should ask the patient about the pain to guide us, like asking him is the pain being sensed while eating only? , cold test also can be applied to guide us

 • in radiographs ,The x-ray finding is normal Percussion also will be normal

 \* inflammation of periodontal ligament is what will cause the pain-- not sure--

 •Sometimes reversible pulpitis can be brought up by high filling , so when a dentist build up a high filling on tooth surface there will be high points ,when the patient clench his teeth on these points that is going to hurt him , and when the patient relax and get the occlusion forces away from these points ,pain will disappear and everythingBack to normal

• Removing of the cause in irreversible Pulpitis can't make the pt to be free of pain and can't get him back to normal immediately

what will happen here with the insult is that the pulp cannot withstand it

Irreversible pulpitis :-

• In irreversible pulpitis the Pain Symptom will be associated with cold more than being affected by heat , and the type of pain is spontaneous and lingering

• But, in reversible pulpitis there wasn't a lingering pain neither spontaneous one

• In addition, changing in the posture is like the Pt will bend his head while complaing of that lingering pain at clinic

• The lingering pain is felt as a result of increasing the pressure inside the pulp chamber and will make the pt suffering all night without even being able to sleep Meanwhile, the pain will decrease as the pt Lay Down ! ; so this pain is being affected by posture of pt as well.

• Examination; cold test will detect the type of pain, so if it was lingering and persist after the removal of stimulus for a while so it may be an indication of irreversible pulpitis

• In Radiographic Examinations we should look for findings of interproximal caries or Exposure of the pulp while cavity prep. also we should search for underfilling Cavities like old filling aged ~ 10yrs may be underfilled and cause irr.pulpitis

• Treatment: RCT

• we should be able to differentiate btw the pain of Both reversible and irreversible pulpitis , pain is much more severe in Irreversible pulpitis and last longer [Linger] , These all aim in differential diagnosis in btw reversible & irreversible pulpitis

The third disease is Hyperplastic irreversible pulpitis [The Pulp polyps] :-

• appears mostly in young patients

• So instead of resorption in pulp there will be more cells, instead! plus fibrous tissues it will look like gingiva inside the tooth [it will look significant by its reddish colour] because there will be low-grade irritation to the pulp in young pts

• Diagnosis; in children, At Radiographs it will appear as large open cavity with direct access to pulp chamber , Dr. shows radiograph where there is lot of decay and say that this is irr.pulpitis & the treatment should be RCT if, the tooth is restorable

• Sometimes pt come to u in very late stage where decay reached furcation area and Sometimes exceed it so in this case the tooth will be non restorable

• Hyperplastic pulpitis is treatable only if the tooth is restorable

Internal resorption ;

• asymptomatic irreversible pulpitis

• The dr. show Radiograph where the decay is present on a tooth and say that Here the response of the pulp will be internal resorption ,And The Cause of that is unknown!

• characterized by oral shape Enlargement in Root canal space

• Dr.showed another pic where odontoclast are eating the dentin[This is an Explanation of how is resorption running ],The Pt will feel any any symptoms[asymptomatic]

• etiology is unknown it may be truma or pulp caping or chronic pulpitis or pulpotomy, so any of these can cause internal resorption , But again the main or exact cause still unknown

• Internal resorption is always discovered By Routine radiographs

• Internal Resorption is a vital process cuz, odontoclast are eating the dentin so there is alive cell present to eat dentin so it is vital [ Internal resorption is not a kind of Necrosis ;They are different ]

• sometimes the interne resorptm may happen in coronal area, so the tooth may appear pinkish! So pink tooth may be an indication of Int. resorption

• Treatment, RCT As soon As Possible - why ASAP ?- To Prevent the Internal resorption from being transformed to external one [we don't want it to change From Internal to external thus, it's going to be complicated ]

• because if the activity of odontoblast persist it will continue resorping the whole dentine then cementum and finally reaches the periodontal ligament so sealing of the root canal will be difficult

External resorption: -

as we said before if the osteoclast activity have never been stopped during internal resorption it will reach cementum causing external resorption

• mostly, it will happen in the End of the root

• dr. Showed up a pic where there is necrotic pulp lesion and a periapical one also exist and this periapical leision have did external Resorption. Although there will be a granulation tissue the vital process is going on and the leison is getting bigger and resorption also increasing, At this point if we can do RCT , we will save the tooth.

• causes of External resorption; Trauma, orthodontic forces ,granuloma, cysts and tumors, all these can be attributed to the External resorption

• Diagnosis of External Resorption is detected by Routine Radiographs where there will significant blunting of the (root apex)

pulp calcification :

• a type of asymptomatic irreversible pulpitis so, sometimes the response of the pulp to the irritation [like caries] that will go to more dentin deposition , The odontoblast in pulp tissue it will elaborate or it will produce dentin so the pulp chamber will appear somewhat NARROW to the point untill the pulp chamber being obliturated. If calcification present in Pulp canals it will be called pulp stones

• if the calcification in more than one tooth like if it was present in 2 or 3 teeth we can call this normal process in such patient so this indicates that this person has his own normal response in calcification and it is not considerd as pathology

• If them is well based filling and patient has no symptoms, so do i have to do RCT? , Answer is No. But if there is symptoms so I should do the RCT

• In anterior teeth when calcification exist the colour of teeth will change into yellowish color this may annoy the patients so I should do here the RCT and then Bleaching of the tooth- internal Bleaching- so we are going to get it back to its normal color , calcification in pulp canal will appear at Radiograph as there is no canal !

• Diagnosis of calcification ; Here we should look for changes in the color of the crown in addition of Taking radiographs

• calcification may interfere with RCT, cuz sometimes after when we do access cavity then searching for the canal we will not find the Canal [it is calcified],So what shall we do? Especially if there is periapical lesion so what shall we do? Answer is we should do something called [surgical - RCT] we must - can't hear-the flab then drill the bone go to the apex of tooth and do cavity preparation at End of the Root or then put filling for the bone cavity preparation, we can fill the apex of root by amalgam! So, Again in this case we have calcified necrotic canal butteApex is present with an active leision RCT is required but we cant do it in the convention away cause the calcified canal will interfere as an obstacle so we will follow the Surgical RCT to prevent the progress of the apical lesion and fill that space with amalgam so, we should seal the apex of the tooth ,,, so when we can't do conventional [orthograde RCT] We will do the surgical [Retro-grade RCT] instead .

Pulp necrosis :

• most common, so if irreversible Pulpitis not treated there will be necrosis of the pulp , Necrosis will get closer toward the periapical tissue that will end up with periapical lesion

• So, the symptoms of Necrosis is present in anterior teeth in coronal area, the color will be dark, but Remember in calcification it was yellowish . So when a Pt come to your clinic with darkish tooth you should expect necrosis without Endo treatment or it may be treated Endodontically but the Dentist whom did it was too clumsy and didn't do good cleaning , so the tissue remained and debris will enter the Dentinal tubules and give the darkish color

• If necrotic tooth is left untreated this may develop - chronic apical Periodontitis- , or if the patient had got any disease like cold for an example , which is caused by new bacteria that entered and reached to the apical lesion area this will cause swelling in that part and patient will come with one side of face swollen [assymtrical] --> so that we call the Apical abscess . So Any lesion if not treated early it will worsen with time

من الممكن ان ننهزم نحن أحياناً ؛ ولكن مبادئنا لا يمكن لها ان تنهزم ،،

Sorry for any mistakes

Hope to satisfy everybody ,

Best wishes

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