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**Subject: Operative dentistry**

**QNO 1; A) Write possible outcome for missed root canal**

**B) A patient came for root canal treatment of maxillary 2nd molar during procedure breakage of file occur in the canal, Manage the whole procedure.**

**(A):write possible outcome for root canal.**

**ANS: outcome of missed root canal**

* Adverse effect on endodontic outcomes
* Associated with periapical lesion
* Post-periapical lesion
* Faxed root canal treatment(RCT)
* Severe pain
* Disruption of lamina dorsa

**(B): the following protocol have been suggested by the literature for management of fractural instrument in rot canal**

1. Surgical approach for retrieval of separated fragment followed by treatment accordingly
2. Bypassing the separated fragment and treating the canal
3. Allowing the separated instrument to be retained in the canal and treating the remaining portion of the canal
4. Retrieving the separated fragment and treating the canal

**QNO 4: Differentiate all types of pontic thoroughly .**

**ANS: Pontic Definition;**

Anartificial tooth on a fixed dental prosthesis that replaces a missing natural tooth, restores its function, and usually fills the space previously occupied by the clinical crown

* **Sanitary/Hygien** An improved design for sanitary pontics has been presented. It incorporates sound principles of mechanical strength and establishes an environment conducive to maintenance of periodontal health.
* **Modified ridges lap**

The modified ridge lap pontic: To overcome the drawbacks of ridge lap pontic a modified design of pontic which incorporates features of both hygienic pontic and ridge lap pontic which makes the pontic design hygienic and compatible with periodontal health. Stein investigated the different pontic design, and they are on surrounding mucosa and found a modified ridge to be compatible both regarding aesthetic and mucosal health. [9] The optimal plaque control is achieved by making the gingival surface as convex as possible with from mesial to distal with no hollow or depression. Advantages: • Good aesthetics • The convex surface is readily accessible for cleaning with floss • Mechanically durable Disadvantages: • When aesthetic demands are high such as high smile line and implant provision, an alternate approach would be required

**ovate**

The Ovate Pontic: An Ovate pontic design can be defined as one which has an increased amount of mucosal contact and applies light pressure to underlying mucosa to improve aesthetics. [11] The issue of emergence profile aesthetic has been resolved using this pontic design. The convex tissue surface of ovate pontic resides within the ridge, appears as a pontic is emerging from the ridge. The contact point is bluntly rounded and set into concavity within the ridge.Silliness et al. investigated the effects of oral hygiene measures such as interdental brushes and flossing on mucosal and gingival health, and the research shows that gingival and mucosal health can be well maintained despite of contact and pressure of pontic if the oral hygiene is maintained properly.

**QNO 2: Clinically explain root canal procedure for maxillary 1st premolar**

**ANS;** Rotary nickel-titanium (Ni-Ti) files

* + Efficient way to clean the canal system, significantly reducing operating time
  + Able to navigate curved canals due to their flexure
  + We use many instruments of different sizes and different shapes to properly clean and shape your specific root canal anatomy
  + Sodium hypochlorite is one of the disinfectants used to reduce the bacteria load within the tooth
  + Specialized blunt-ended needles are used to deliver these disinfectants to the end of the root in a safe and effective way
  + To gain access to the root canals of the tooth, a small opening is made either on the occlusal surface of the tooth (for Posterior teeth), or on the lingual side of the tooth (for Anterior).
  + In a multi-rooted tooth, gaining access into the root canals is more challenging
  + With the aid of a microscope we are able to locate any hidden or calcified canals
  + After thoroughly cleaning and shaping the canals, the canals are dried with absorbing paper pointFinally, the canals are sealed with two components:
  + Sealer – a cement that sets over time
  + Gutta percha – a filler made of a natural form of latex
  + Upon completion of the root canal treatment, a temporary filling is placed over the sealed canals that has two parts:
  + Cotton pellet soaked in an antibacterial solution
  + A solid temporary filling on top
  + A final restoration (usually a crown) is placed by your dentist
  + This will restore functionality to your tooth and protect it from fracturing

**QNO 3: A patient came to your clinic with incomplete root formation of mandibular 1st molar, Diagnose the problem and manage it stepwise.**

**ANS:** The affected tooth is carefully isolated with a rubber dam, and an access opening is made into the pulp chamber2. A file is placed in the root canal, and a radiograph is made to establish the root length accurately. It is important to avoid placing the instrument through the apex, which might injure the epithelial diaphragm

3. After the remnants of the pulp have been removed using barbed broaches and files, the canal is flooded with hydrogen peroxide to aid in the removal of debris. The canal is then irrigated with sodium hypochlorite and saline

* 4. The canal is dried with absorbent paper points and loose cotton
* 5. A thick paste of calcium hydroxide is transferred to the canal. An endodontic plugger may be used to push the material to the apical end, but excess material should not be forced beyond the apex
* 6. A cotton pledget is placed over the calcium hydroxide, and the seal is completed with a layer of reinforced zinc oxide–eugenol cement
* One month after initial

Treatment

* Six months after initial treatment
* The root canal is then reopened to determine whether the tooth is ready

for a conventional

gutta-percha filling.

Five months after the placement of the gutta-percha canal filling

* If apical closure has not occurred in 6 months, the root canal is retreated with the calcium hydroxide paste. If weeping in the canal was not controlled before the canal was filled, retreatment is recommended 2 or 3 months after the first treatment.
* **Using MTA**
* 1-The canal has been opened, rinsed with 5% sodium hypochlorite, dried, and Calcium hydroxide was then placed in the canal for 1 week.
* 7 days after initial treatment with calcium hydroxide, the incisor was instrumented to remove calcium hydroxide and all the remaining tissue before further treatment
* The apical 4 to 5 mm of the incisor root has been filled with mineral trioxide aggregate (MTA).
* A moist cotton wool pledget was then placed in the canal overnight and the system temporarily sealed using thermoplasticized gutta-percha using Obturation, and a zinc oxide/eugenol dressing.
* check radiograph was obtained to evaluate the apical seal
* The gutta-percha and cotton wool pledget was removed the following day and a definitive root-filling placed coronal to the MTA using thermoplasticized gutta-percha.
* The incisor has completed initial treatment with MTA. A temporary restoration has been placed to seal the canal opening
* At the 6-month and 1-year follow-ups, the clinical and radiographic appearance of the teeth showed resolution of the periapical lesions

**QNO 5: classify dental bridges and explain its type briefly.**

**ANS:** A dental bridge is a solution when you have lost a tooth, or when you have a gap that is causing your other teeth to become loose. This replacement tooth will fill in the space where something is missing, creating a natural appearance while helping to restore the tooth.

There are , and your dentist will determine which is the right option for your situation.  A traditional bridge is the most common type, which includes one or more fake teeth held in place with crowns. These crowns are cemented to the teeth surrounding the tooth that is missing.

Another option is a cantilever bridge, which is supported by a crown on only one side. If you only have one tooth next to your missing tooth, you can still have this type of crown secured to your mouth. Maryland bridges offer a more conservative approach, using porcelain or metal framework to hold the fake tooth in place. These bridges aren’t as strong as those cemented in, so teeth that have a lot of biting force won’t be able to hold up with a Maryland bridge.

The final type is an implant-supported bridge, which is often used when you have more than one tooth that is missing. These bridges are held in place by implants, which are secured to your jawbone for maximum stability. Most dentists will place one implant for each tooth that is missing.

**Types of dental bridges**

1. **Traditional Bridges**
2. Traditional bridges are the most popular types of dental bridges for restoring lost teeth. They can be used when you have natural teeth or implants on either side of the space left by your missing tooth.
3. They are usually small, lightweight and provide excellent chewing comfort, by re-distributing your normal bite force compromised by your missing teeth.
4. If your hygiene and home care is maintained at a optimum level this type of bridge can last a long time.
5. The primary downside of traditional bridges is that enough enamel will need to be cut and removed from your abutment teeth to make room for the crowns. Therefore, since enamel doesn’t regenerate itself, the abutment tooth-teeth will always need to be protected by well fitted crowns. Their care, vitality and stability is mandatory for the long term life of your bridge.

**2. Cantilever Bridges:** This cantilever bridge is used when there is only one anchor tooth available to support the missing tooth or teeth. This bridge design is not recommended for use in the back of the mouth where too much bite force can be put on the abutment tooth. But it can work if it’s designed well and if the cantilevered tooth is the front tooth. The biting forces must be considered in the design which can be done by a good lab, making these types of dental bridges a valuable option when trying to save time and money.

**3. Maryland Bridges:** This type of bridge is a winged bridge known for its conservative nature. These types of dental bridges are often referred to as a resin bonded bridge. Basically they’re designed with plastic teeth with similar gum material which is fortified by a metal frame.

Metal attachments located on opposing sides are bonded to existing anchor teeth. This special resin bonded form of bridge work is mainly used on front teeth, in cases where the adjoining teeth are still in stable condition.

The overwhelming benefit to these types of dental bridges is that your dentist will only need to make a minimal adjustment to the contour of the abutment teeth. The treatment is cost effective and relatively efficient compared to what it takes to design a traditional fixed bridge. As great as this Maryland bridge option is, a good assessment of your bite will be necessary to determine if it’s a viable option. Deep bites or cross bites are contraindicated for Maryland bridges.

The metal attachments on Maryland bridges tend to discolor which causes the abutment teeth to become darker over time, their also known to have a proclivity towards de-bonding! These types of dental bridges are often seen as temporary replacement appliances. There often used in the interim while your implant is healing, or if you are under 18 and you’re awaiting for your growth cycle to finish before installing.