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Root Canal Treatment Procedure and it's Radiographic Analysis

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Perspective

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DESCRIPTION

A dental operation known as a root canal is performed to treat infected tooth pulp that would otherwise need to be extracted. The pulp, which is the tooth's soft tissue core and contains the nerves, blood vessels, and connective tissue needed for tooth health, Usually, a deep hole or inadequate filling, allows bacteria to penetrate the pulp.

When the dental pulp is irreparably destroyed and both the coronal and apical pulp is involved, root canal therapy is necessary. Before applying post-retained crowns and over dentures to teeth with questionable pulpal states, root canal therapy can be performed. Not all pulp infections or inflammations require root canal therapy to provide pain relief. Additionally, it helps to promote healing and restoration of the periradicular tissues by preventing negative sequelae-related signs and symptoms. An illustration of this is when a front tooth is damaged and avulsed from the bone socket. Endodontic treatment is needed to restore the tooth's appearance and function, even though there may not have been any pain or other symptoms related to the dental pulp at the time.

Clinical tests and radiographic analyses are performed prior to root canal therapy in order to identify and plan treatment. To make the process pain-free, local anesthesia is administered. A rubber dam is then applied to separate the tooth that has to be treated. This keeps saliva from getting inside the tooth while it is being treated and guards the airway from the strong chemicals and fine files that are being used. The root canal procedure is frequently done in a single session or over several. Root canal therapy entails:

1. Removing the damaged and infected pulp
2. Shaping the entire root canal system
3. Cleaning and disinfecting the entire root canal system
4. Filling and sealing the root canal system
5. Placing a direct restoration such as composite filling or indirect restoration such as a crown

Instrument fractures are a frequent cause of procedural errors during root canal therapy. Instrument fracture prevention is crucial. The location, angle, and kind of instrument all affect how successfully a broken instrument can be removed. Accidents involving sodium hypochlorite can lead to long-term problems with functionality and appearance. During a root canal operation, the extrusion of sodium hypochlorite irrigating solution might result in a serious inflammatory response and tissue damage. Depending on the degree of the injury, treatment is given. If the pulpal tissue remains are not entirely removed during root canal therapy or if a root canal sealer material containing silver is utilized, tooth discoloration as a result of the procedure may happen.

The root surface is operated on during periradicular surgery. These include root excision (removal of a whole root), apicoectomy (removal of a root end), repair of a damaged root caused by perforation or resorption, removal of shattered tooth fragments or filling material, and exploratory surgery to check for root fractures. During an apicoectomy, the apex of a root is removed and a root-end filling is inserted to stop bacterial leakage from the periradicular tissues into the root canal system. Apicectomy is performed using a microsurgical method, which enhances post-operative recovery.

When a previous root canal procedure fails and re-root canal therapy is not an option, an apicoectomy can be performed. This may be due to anatomical characteristics such root dilatation, which can make it difficult to completely clean and obturate the root canal system. Procedure mistakes, such as ledges or holes, can also be a sign that an apicectomy is necessary.