

# Talking with Patients

## Root Canal Treatment

André V. Ritter, DDS, MS

### WHAT IS IT?

Under normal circumstances, every natural tooth contains a dental pulp, frequently referred to by patients as the “nerve” of the tooth. The dental pulp consists mainly of nerves and blood vessels. It is responsible for the tooth development and for maintaining its vitality once the tooth is formed.

If the dental pulp is irreversibly compromised by trauma, inflammation, or infection, it has to be removed to avoid pain and infection of the bone around the tooth. This procedure is commonly called root canal treatment. The dead or infected pulp is removed by the dentist through an access created in the crown of the tooth. The pulpal tissues are removed and the spaces that originally contained the pulp, called root canals, are thoroughly cleaned and shaped by careful instrumentation. The root canals are then filled with sterile materials, such as gutta-percha.

### WHEN IS IT NEEDED?

When the dentist diagnoses signs or symptoms of a tooth infection or abscess, root canal treatment might

be indicated. These signs and symptoms include abnormalities in the bone surrounding the root or roots (diagnosed with x-rays or films), persistent toothache, and sometimes a localized swollen area of the gums. Except for extraction of the involved tooth, there is generally no alternative treatment of the tooth when root canal treatment is required because of tooth infection.

### CONCLUSIONS

With new technology and proper anesthesia, root canal treatment can be accomplished more rapidly and with less discomfort than in the past. The number of visits necessary to complete the root canal treatment varies according to the complexity of the case and the number of roots involved. Typically, posterior teeth (molars and premolars) have two to four root canals, whereas front teeth usually contain one root canal.

Once the root canal treatment is completed, the tooth has to be restored. A properly restored root canal-treated tooth can function as well as a normal tooth. However, the treated tooth must be moni-

tored periodically for recurrent infections, cracks, resorption, or decay. Since the tooth is “dead,” there is no pain if the tooth becomes decayed or cracked. Therefore, close monitoring is required to diagnose and treat these conditions if they arise.

The following images illustrate a front tooth with its respective x-ray image before and after root canal treatment has been completed.

### ADVANTAGES

- the compromised tooth can be saved
- eliminates the pain
- prevents infection from spreading to the surrounding bones and other teeth.

### DISADVANTAGES

- expensive—however, less expensive than extracting the tooth and having it replaced by a bridge or an implant
- time commitment—might require multiple appointments, although sometimes can be done in a single visit



*A, Swollen area on the gum tissue adjacent to an affected tooth. B, Radiograph showing dark area adjacent to the tooth's root. C and D, The abnormalities are healed after the root canal treatment has been completed. (Illustrations and endodontics by Dr. Alessandra Ritter, University of North Carolina School of Dentistry, Chapel Hill, North Carolina.)*

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