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Methods of Expanding the Root Canals Using Chemical Methods

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Abstract: Root canal treatment is an integral part of endodontic treatment. The purpose of this stage is to prevent the infection from spreading to the tissues near the tooth, the periodontium. Currently, technologies are significantly developed and allow to save the almost destroyed tooth.

A few decades ago, root canal treatment was often painful. Thanks to advances in dentistry and local anesthesia, the procedure is painless. If the central part of the tooth (pulp) is infected or inflamed, root canal treatment or endodontic treatment is necessary. The procedure is performed to save the damaged tooth. After that, it can serve for many years. When it is possible to save the tooth, the doctor will do everything.

Keywords: Root canals, mechanical treatment, canal cleaning.

Introduction

The most common cause of damage is deep caries. This causes inflammation, infection and irreversible damage to the pulp. A person experiences excruciating pain from time to time. The pain may subside, but very often returns as the infection spreads.

If pain occurs in the tooth or gum area, it is recommended to visit a dentist immediately.

The dental cavity should be aseptic and free of pathogenic flora that cause inflammation.

Mechanical treatment of root canals

Problems solved by mechanical processing:

removes infection from the canal;

removes dead tissue;

forms a channel cavity;

Medicines are used effectively.

This method expands the lumen of the canal, removes bacteria and detritus. To make the procedure atraumatic, you need to measure the length of the root canal. First, an instrument is inserted into the cavity and an X-ray is taken. Then measure the length from the photo. The doctor performs all actions very carefully so that the infection does not spread to the periodontium. If this happens, it causes inflammation - periodontitis.

Before applying the filling, a control X-ray is performed. The normal anatomy of the tooth lumen has a series of narrowings and expansions. With proper mixing, the channel will be smooth and the filler will settle easily.

How is mechanical cleaning of channels carried out?

You can do the process in two ways:

During manual treatment, the dentist cleans the canal with circular movements of the fingers using a nerve extractor. This removes detritus and microorganisms. Then he uses tools to expand, which give a comfortable shape for the filling. The doctor can /"step back".

Channel cleaning

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Processing steps
The whole procedure is done in one session. With a complex anatomical structure, 2-3 sessions may be required depending on the condition of the tooth. The manipulation lasts from 30 to 90 minutes. It is a simple procedure with relatively little discomfort. All processing techniques have common steps:
administration of anesthetics;
access to tooth root canals;
opening the mouth;
removal of detritus and infection;
measure the length of the channel;
extension;
disinfection.
There is a single algorithm of actions for machine and manual processing. The first step is local anesthesia. After the tooth and surrounding areas are numb, the doctor makes a hole through the surface of the tooth to access the pulp. If there is a front tooth, access is provided from the back. The exterior will retain its original appearance. The doctor cleans the infected and dead tissue. The procedure should not cause pain with high-quality anesthesia.
The machine method uses files that automatically produce rotational movements. Special attachments are placed on them that match the size of the tooth lumen and they prepare the canal. It should be noted that machine processing is more dangerous, because it is impossible to control the pressure of the file and the position of the patient's tooth. A possible complication is perforation of the tooth wall. It can be very unpleasant and painful. Excessive pressure or improper technique can damage the tool or tip during operation.
After all the infected tissues are removed, the canals are disinfected using special products. To fill the canals, it is processed with the help of fine tools. During the molding process, the dentist washes the canals. This is necessary to remove debris before installing the filling material.

Treatment of canals using chemicals

Chemical cleaning is used when mechanical treatment is not possible. It is used in cases where the channel is significantly narrowed or completely impassable.

Treatment of canals using chemicals

After this method, you can start expanding the lumen with the help of tools. Previously, nitric and hydrochloric acids were used for expansion purposes. But they penetrated the tissue surrounding the tooth and caused a burn. Currently, calcium salts and chelating agents are used. They are used in gel or liquid form.
EDTA salts are used in the form of solutions, they penetrate well into narrow tubules. Medicines have additional antiseptic properties. Before placement, the cavity is dried, then a small amount of composition is applied and injected. Then mechanical expansion of the canal takes place. The gels contain EDTA, which makes the tool move better in the tooth cavity. Do not affect the surrounding tissue.
At a certain stage of endodontic treatment, there is a chemical cleaning method. Antiseptics are introduced into the canal using a douche, using root needles in cotton swabs. There are requirements for medicines that must be met.
Bactericidal effect;
Do not affect the surrounding tissues;
Must be hypoallergenic;
Do not cause resistance of microorganisms;
Fast onset of effect;
Activity in the presence of organic compounds;
It is better not to have a strong smell.

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It is difficult to choose a drug that has all the opinions. Currently, sodium hypochlorite is widely used. It has an effective and broad bactericidal effect. It disinfects the dental cavity and removes microorganisms.

After high-quality processing, filling begins. It is important to choose a high-quality filler. If defective materials are used in the filling process, they can deteriorate, which can lead to bacterial infection.

Are there any contraindications for root canal treatment?

Yes, there are certain limitations to the procedure.

These are the following diseases:

Hypertension during crisis;

Diabetes in the decompensation phase;

Some autoimmune diseases;

Severe osteoporosis;

Respiratory tract infections;

If you are taking blood thinners, consult your doctor. He may stop taking these medications a few days before treatment. As an alternative treatment, the damaged tooth can be removed and replaced with a dental implant, bridge or prosthesis.

What are the recommendations after treatment?

After the treatment, follow the doctor's recommendations:

Do not eat for 2-3 hours;

Avoid solid foods for several days after root canal treatment

Take antibiotics if prescribed;

Maintain good oral hygiene.

It is wise not to eat or drink anything for several hours after root canal treatment. Since the treated area is numb, there is a possibility of accidental damage to the tooth or tongue during eating. You can eat after the insomnia disappears.

Tooth discoloration after treatment

When the hole in your teeth is filled with a temporary material, it is important to get a permanent filling in time. When the temporary filling becomes significantly thinner, you should contact your dentist immediately.

How long does it take to recover after the procedure?

It usually takes a week to fully recover from treatment. Pain medication may be required for 2-3 days. The doctor will prescribe Ibuprofen or other medicines. If necessary, it is recommended to take cephalosporin antibiotics for 5 to 7 days.

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