

SURGICAL ROOT CANAL (APICOECTOMY/RETROGRADE AMALGAM)

Patients scheduled to have surgical root canal treatment (apicoectomy/retrograde amalgam) should be familiar with certain information. If there are further questions please do not hesitate to ask.

1. **WHAT IS SURGICAL ROOT CANAL TREATMENT (APICOECTOMY/RETROGRADE AMALGAM)?** An apicoectomy is the excision of the apical portion of a tooth root through an opening made in the overlying bone. A retrograde amalgam is performed when an apical preparation is followed by a retrograde filling with a silver amalgam restoration (similar to a silver filling placed by your dentist).
2. **WHEN IS SURGICAL ROOT CANAL TREATMENT (APICOECTOMY/RETROGRADE AMALGAM) INDICATED?** When conventional root canal treatment fails to keep a tooth healthy and symptom free, then surgical root canal treatment may be indicated to save the tooth. There are basically three reasons for failure of conventional root canal treatment. These include the following: 1. Accessory root canal system (miniature canals that contain necrotic (dead) material that cannot be reached with conventional root canal treatment. 2. A poor apical seal "leaking". 3. A vertical fracture in the root. The apicoectomy removes the accessory root canal systems that contain necrotic (dead) material. If there is a poor apical seal, this can be treated with the retrograde amalgam. If there is a vertical fracture in the root, then the tooth becomes non-restorable and must be extracted.
3. **HOW IS THIS SURGERY PERFORMED?** An incision is made through the gum tissue close to the apical portion of the involved tooth. After the bone is exposed, a rotary drill instrument will be used to remove bone and expose the end of the root. The end of the root will be amputated and all adjacent infected tissue will be cleaned out. A retrograde amalgam filling will now be placed if it is indicated (if there is a poor seal at the root end).
4. **CAN MY SURGERY BE PERFORMED PAINLESSLY?** Yes! The most predictable way to control pain and anxiety (nervousness) is through the use of intravenous (IV) sedation (twilight sleep) or general anesthesia (complete sleep). For less anxious patients we offer local anesthesia (eg. Lidocaine) and nitrous oxide (laughing gas).
5. **WILL I BE MONITORED DURING MY SURGERY?** All patients administered IV sedation or general anesthesia will be monitored with ongoing EKG, pulse oximetry (oxygen saturation of blood), blood pressure and heart rate machines. Your age and health status may also require monitoring and the use of nasal oxygen support.
6. **CAN THE PATIENT EAT PRIOR TO SURGERY?** If a general anesthetic or intravenous (IV) sedation is planned, there should be no food or liquids taken for eight hours prior to the procedure (to do so could result in severe bodily harm). However, you should take your routine daily medicine prescribed by your doctor with a sip of water (Exception: blood thinners and insulin replacement).
7. **WHAT ARE THE ANESTHESIA RISKS?** They may include nausea, inflammation of the veins (less than 5%), and allergic reactions [a rash, swelling, or even a medical emergency may occur, but that's extremely rare (less than .01%)].
1. **WHAT ARE THE MOST COMMON PROBLEMS AFTER SURGERY?**
 - A. **DISCOMFORT:** May require prescription pain medications. Persistent soreness is often present for several days.
 - B. **SWELLING:** Takes about 2-3 days to reach its peak. Then, subsides over the next week.

- C. DECREASED MOUTH OPENING: The jaw muscles often become stiff and limit the amount of mouth opening for several days. Rarely, the joint itself is affected. Mention it to your surgeon if it is persistent.
- D. BLEEDING: Some mild oozing is normal for up to 24 hours. There may be slight bleeding from the area when you brush your teeth for the first week.
- E. INFECTION: Infections are rare during the first few days after surgery. If an infection does occur, it is more likely 4 to 8 weeks after surgery. This may be an indication that the treatment has failed and that the tooth must be removed.
- F. NUMBNESS: The roots of the involved teeth may be in close proximity to the nerves that supply sensation to the teeth, gums, tongue, cheeks, chin and lips. Occasionally these nerves are injured during the surgical root canal treatment causing numbness and tingling. If this happens, the nerve usually repairs itself. In some cases, numbness is permanent.
- G. SINUS INJURY: Because upper (back) posterior tooth roots are near the sinus cavity, the surgical root canal treatment of these teeth may cause an opening (hole) in the sinus cavity. The sinus usually heals, but further treatment may be necessary.
- H. PROGNOSIS (CHANCE FOR SUCCESS): Conventional root canal treatment usually has an overall success rate of approximately 85% for 10-20 years. Once conventional root canal treatment has failed, then the success rate of surgical root canal treatment is at best 50% for 10-20 years. No guarantee of success can be made for any length of time. The treatment may fail to relieve signs and symptoms and the tooth may require removal at any point in time in the future.
- I. REMOVAL OF INVOLVED TOOTH: If a fracture is found in the root or there is severe bone loss, the surgeon may elect to remove the tooth with the prior permission of the patient. If the involved tooth is an anterior (front) tooth, it would be best to wait on removal until a temporary prosthesis (removable partial denture) can be made.