# Periapical Healing of Long Standing Lesion

*Glenn was eighteen years old in 1976 when he reported to our clinic at Tufts to have his maxillary left central incisor (#9) extracted. He had been under root canal treatment elsewhere for four years. Every time the tooth was sealed it became painful and had to be reopened, and each time a great deal of pus would exude. Glenn had become weary of the ongoing discomfort and had lost hope. He wanted the tooth removed.*

*We took a radiograph that showed a huge periapical lesion extending over his maxillary left central and lateral incisors (#9 & #10) (GG1).*

*We tested the lateral incisor and determined that it was non-vital and would also require root canal treatment.*

*I explained the long term consequences of extracting a front tooth and convinced him to allow me to try to save it. Due to Glenn's anxiety, caused by four years of unsuccessful treatment, I determined that it would be best to act decisively. Therefore, I recommended root canal treatment in conjunction with an apicoectomy. This would enable us to complete the procedure in one visit.*

Figure GG1
Radiograph shows large periapical lesion over teeth #9 and #10. Note the shortened root and incomplete apical formation of #9.

***Glenn agreed to give it one more try.***

I took Glenn to the Oral Surgery Department for evaluation. They agreed to my treatment plan, but unfortunately, they were not able to schedule surgery for six weeks. We decided to immediately begin root canal treatment, but to wait until the surgery date to obturate the canal. Glenn reluctantly agreed to the six-week wait based on our assurance that we had a very good chance of saving the tooth.

We returned to the Pedodontic Clinic where I cleaned out the root canal of #9, removed the decay and debris, and washed the canal with sodium hypochlorite. I filled the canal with Pulpdent Paste as an antimicrobial agent to disinfect the canal and prevent the tooth from flaring up between visits. At the same time I started root canal therapy on the upper left lateral incisor (#10) and filled the canal with Pulpdent Paste as an intermediate canal dressing.

Figure GG2
Radiograph shows Pulpdent Paste in place, trabeculation into the lesion, reduced size of the lesion, and obturation of #10 with Pulpdent Root Canal Sealer.

Figure GG3
Radiograph taken six months following initial treatment with Pulpdent Paste shows healing of the periapical lesion, closure of the apex and obturation of #9 with Pulpdent Root Canal Sealer.

***I was amazed to see that periapical healing was occurring and that surgery would not be necessary. It confirmed Heithersay's findings.[1] There was a new cure for periapical lesions, and the cure was Pulpdent Paste.***

Two weeks later, Glenn returned, and I obturated the canal of #10 with Pulpdent Root Canal Sealer using the Pressure Syringe technique. At the same visit I replaced the Pulpdent Paste dressing in #9.

I arranged to see Glenn the day before the scheduled surgery to take a radiograph of #9 to re-evaluate the case. Upon his return, Glenn reported that he had no discomfort, and he was very happy. To our surprise, the radiograph showed trabeculation occurring into the lesion *(GG2)*. I showed the radiograph to the Surgery Department, and they concurred and decided to postpone the surgery and wait to see if healing continued.

I cleaned out the canal, and there was no exudate visible. I filled the canal with Pulpdent Paste again and scheduled a follow-up appointment one month later.

We saw Glenn once a month for three months and changed the Pulpdent Paste dressing at each visit. A radiograph taken six months after the initial visit shows complete healing. At this time I obturated the canal with Pulpdent Root Canal Sealer using the Pressure Syringe technique *(GG3)*. The Pressure Syringe technique is described in detail in Part IV of this clinical guide.

***On a personal level, this was very exciting, and on a grander scale, it advanced our treatment of endodontic pathology.***

Since this time, I have routinely treated periapical lesions, and have reversed endodontic failures, by using Pulpdent Paste, TempCanal or Multi-Cal as an intracanal dressing. Periapical lesions, even in well-obturated root canals, are primarily caused by bacteria remaining in the root canal system.

The antibacterial effect of calcium hydroxide has been well documented.[2,3] In teeth with necrotic pulps, without periapical lesions, the root canals should be treated with the calcium hydroxide dressing for approximately one week before final obturation of the canals.[4,5] When there is a large periapical lesion, the calcium hydroxide dressing should be changed on a monthly basis until healing begins to occur. If this is not practical, treat the tooth with calcium hydroxide for approximately one month before final obturation.[6]

Making sure the apex is patent, flaring the canal to remove infected dentin, removing the smear layer with a chelating agent, flushing with sodium hypochlorite, and placing calcium hydroxide as an antibacterial dressing disinfects the canal and produces the best results in the long run.