Healing of Periapical Lesions of Pulpless Teeth After Endodontic Treatment With Controlled Asepsis

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Aim
- To evaluate the efficacy of the endodontic treatment of pulpless infected teeth.

Materials & Methods
- 79 single-rooted necrotic teeth with PAR that received RCT 2-5 yrs. ago were included in this study.
- Teeth were treated in 3 different ways:
  Group 1 (11 teeth)
  1- Instrumentation & irrigation with saline at 4 visits (no antibacterial solutions or dressings between visits).
  2- Canals with persistent bacteria were dressed with Ca(OH)2 for 1-2 months before filling.
  3- Canals from which the bacteria had been eliminated by this, were root-filled.
  Group 2 (42 teeth)
  1- Instrumentation & irrigation with NaOCl (0.5% & 5%) or NaOCl + EDTA (15%) + no dressing.
  2- Canals in which bacteria persisted were dressed with Ca(OH)2 for 1-2 months before filling.
  3- Bacteria were eliminated from 32 canals by this treatment.
    a- 7 had been root filled.
    b- 25 had been dressed with Ca(OH)2 paste for 1 month.
  Group 3 (26 teeth)
  1- Instrumentation and irrigation with NaOCl (0.5% & 5%) + Ca(OH)2 dressing at the 1st visit.
  2- 1 month later, Ca(OH)2 removed, canals were sampled, then sealed temporarily without dressing.
  3- After 2-4 days, another sample was taken. The canals were then dressed with Ca(OH)2 paste.
  4- When no bacteria could be recovered from samples taken at the 3rd visit, root canals were filled.
- All teeth were filled using the lateral condensation technique.
- Clinical and radiographic follow-ups were performed at 6 & 12 months and once a year thereafter.
- If PDL space was normal or slightly widened, the case was considered as complete healing.
- Surgical specimens from 6 cases were studied histologically.

Results
- 67 cases healed completely within 2 yrs.
- In 7 cases, the size of the lesions also decreased, but the healing was not complete within 2 yrs.
- In 5 cases, there was no or insignificant decrease in the lesion size & surgeries were performed.
  a- 2/5 showed presences of Actinomyces israelii & Arachnia propionic.
  b- 1/5 radicular cyst with chips of dentin in the tissue.

Conclusion
- Periapical lesions which fail to heal in spite of careful bacteriological monitoring of the endodontic treatment may in some cases be due to an establishment of the bacteria outside the root canal in the periapical tissue. In these sites, the bacteria are inaccessible to conventional RCT.

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