Treatment Outcome after Repair of Root Perforations with MTA: A Retrospective Evaluation of 90 Teeth

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Aim
- To analyze the success rate of perforations sealed with MTA
- To evaluate pre-op factors with regard to their prognostic value concerning treatment outcome.

Materials & Methods
- 90 teeth with hx. of perforations were included in this study.
- All perforations were repaired with MTA and followed up 1–10 yrs. (mean = 3.4 yrs.)
- The following data were recorded for each case:
  a- No. of roots involved, tooth type & location
  b- Clinical symptoms (present/absent)
  c- Connection between the oral cavity and the perforation (present/absent).
- The outcome was evaluated by 2 examiners as "healed" or "failure"
- Healing criteria
  1) No radiolucency adjacent to the perforation site or apical periodontitis
  2) No clinical symptoms or loss of function
- Statistical analysis was performed to analyze the relationship between the pre-op variables and treatment success.

Results
- 66 teeth were classified as healed (73.3%).
- Presence of a pre-op lesion at the perforation site was related to a lower healing rate ($P = .001$).
- Perforation was most often located mid-root in single-rooted teeth (52.2%).
- Perforated most often located in the furcation area in multi-rooted teeth (50.7%).
- The tooth type was significantly associated with the perforation site ($P=0.028$)
  a- Anterior teeth were perforated most frequently at the mid-root level (54.5%)
  b- Premolar teeth were perforated most frequently in the coronal third (46.2%)
  c- Molar teeth were perforated most frequently in the furcation area (50%)
- Teeth with direct contact between the perforation and the oral cavity had 100% failure compared with 23.3% failure in cases without contact ($P=0.004$)

Conclusion
- The following 2 factors lowers the healing rate:
  a- Presence of pre-op lesion at perforation site
  b- Contact between perforation and the oral cavity

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