

One versus multiple session endodontic treatment

It is one of the most discussed topics in modern endodontics. Prof. Dr. Liviu Steier explains the key factors for success



Evidence shows that the number of sessions used to perform a successful root canal treatment does not differ between one or multiple sessions. The only possible post-operative complications with single session root canal treatments are:

1. Post-operative pain.
2. Flare up.

For a better understanding of successful single visit endodontic therapy the following factors are key:

1. Adequate working length control (using electric measurement devices and if necessary x-ray)
2. Mechanical root canal preparation (best results will combine the use of hand and rotary files)
3. Chemical root canal disinfection (using irrigants – advanced devices and technologies)
4. An optimal root canal obturation to avoid apical leakage.
5. Coronal sealing to prevent coronal leakage.

Each one of this key factors are determined by other factors. Determinant factors for an adequate working length control:

1. Straight-line access
2. Establishing glide path
3. Use of adequate file to correctly bind.

Determinant factors for adequate mechanical root canal preparation:

1. Straight line access
2. Establishing glide path
3. Hand-file reshaping to size 25 or 30
4. Determination of the “first file to bind” – “Master apically file”
5. Shaping of the so called “apical capture zone”
6. Adequate use of sequential files protocol either hand or rotary
7. Adequate irrigation and smear layer removal protocol while mechanical shaping.

Determinant factors for adequate chemical root canal disinfection:

1. Coronal isolation (rubber dam)
2. Adequate coronal access
3. Adequate shaping protocol
4. Use of irrigation solutions in an optimised sequence
5. Adequate irrigation technique
6. Adequate irrigant volume
7. Satisfactory irrigant evacuation.

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Determinant factors for inadequate root canal obturation (either under filling or incomplete filling):

1. Canals not dry prior to obturation
2. Inadequate straight-line access
3. Inadequate irrigation protocol
4. Excessive enlargement of a curved canal
5. Packing of debris in the apical portion of the canal
6. Skipping of sequential file sizes
7. Inadequate tug back
8. Inadequate master cone selection
9. Inadequate condensation procedures
10. Coronal seal.

Conclusion

A trained and experienced operator who follows a strict treatment protocol can manage to perform root canal treatments in one visit alone having in mind the management of postoperative complications. The author needs to acknowledge that not all root canal treatments can be executed as single session.

Useful reading

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About the author



Dr. med. dent. Liviu Steier is a visiting professor at the School of Dental Medicine in Florence; visiting professor at Tufts School of Dental Medicine on its endodontic postgraduate programme; and an honorary clinical associate professor at Warwick Medical School. He is a registered specialist in endodontics (GDC) and Spezialist fuer Prothetik (www.dgzpv.de).

He can be reached at l.steier@msdentistry.co.uk



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