

IMPORTANCE OF FLUID TIGHT – SEAL DURING OBTURATION OF THE RADICULAR SPACE.

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INTRODUCTION

The function of a root canal filling is to obturate the canal and eliminate all portals of entry between the periodontium and the root canal. The better the seal, the better the prognosis of the tooth. An ideal filling must be well condensed, must conform and adhere to the instrumented canal wall, and must end at the junction of the root canal and the periodontium¹.

Periapical inflammation in the absence of bacterial infection

The Washington study of endodontic success and failure suggests percolation of periapical exudate into the incompletely filled canal as the greatest cause of endodontic failure. It is speculated that an incompletely filled canal allows percolation of tissue exudate into the unfilled portion of the root canal, where it would stagnate. Subsequent breakdown of the tissue fluids and diffusion of the breakdown products out into the periapical tissues would act as a physio-chemical irritant to produce periapical inflammation. Thus, in the absence of bacteria, degraded serum may well assume the role of the primary tissue irritant².

Extension of the root canal filling.

The apical anatomic limits of the pulp space are the dentinocemental junction. Beyond this point the periodontal structures begin. The dentinocemental Junction averages about 0.5 mm to 0.7 mm from the external surface of the apical foramen. It is this joint that should limit canal instrumentation and

filling².

When to obturate the canal.

After the completion of root canal cleaning and shaping, the root canal is ready to be filled when the following criteria have been met:

1. The tooth is asymptomatic. There is no pain, tenderness or apical periodontitis.
2. The canal is dry. There is no excessive exudate or seepage.
3. There is no sinus tract.
4. There is no foul odour. A foul odour suggests the possibility of residual infection or leakage.
5. The temporary filling is intact. A broken or leaking filling causes recontamination of the canal³.

CONCLUSION:

Thus a three-dimensionally well filled root canal system does the following:

1. Prevents percolation and microleakage of periapical exudate into the root canal space.
2. Prevents reinfection through transient bacterimia.
3. Creates a favourable biologic environment for the process of tissue healing to take place.

REFERENCE:

1. Grossman: Endodontics practice, 11th edition, 242
2. Ingle: Endodontics. *Lea & Febiger*, Philadelphia, 3rd edn.: 223, 1964
3. Cohen: Pathways of the pulp, *C.V. Mosby* 6th edn, 219, 1997.