



EDITORIAL

ENDODONTIC MICROSURGERY: NEW PROSPECTIVE TO DEAL WITH FAILED ROOT CANAL TREATMENT

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INTRODUCTION

Dental pulp is sterile structure which becomes contaminated when bacteria from oral cavity invade inside, colonize and produce immune stimulatory compounds those gets leaked to periapical area through apical foramen. The stimulated immune system starts inflammatory reaction which is observed as bone loss in periapical area on radiographs.

Root canal treatment (RCT) is performed to eradicate bacteria from root canal. With evolution of new technologies and new materials, the RCT has become most predictable with success rate ranging from 82-95%. Despite of high success rate, the failure still exists. The analysis has shown that failures are not due to material but are due to complexity of tooth anatomy. The unsealed area by filling materials acts as communication channel between residual bacteria inside root canal and periapical tissue. Previously, due to lack of knowledge of such communicating channels has brought frustrations both to dentist and patients. Now, we have latest diagnostic technologies such as cone-beam computed tomography (CBCT) and micro-

computed tomography (μ -CT), those have expanded the horizon of variations in anatomy of tooth structure that can act as communication channels. This has encouraged researchers and dentists to invent and implement methodologies that can prepare and seal these communication channels.

Endodontic microsurgery is latest evolution in field of endodontics to deal with these anatomic communication channels with predictable result.^{1,2} Conventional endodontic surgeries were blind procedures performed before evolution of endodontic microsurgery.³ Endodontic microsurgery is performed with microinstruments and most importantly under direct vision through dental operating microscope.³ Dental operating microscope gives magnified view of operating area with direct illumination, this make preparation and sealing of communication easy and treatment becomes predictable.⁴ The success of endodontic microsurgery is about 98% in compare to conventional endodontic surgery which was 54%. All these facts show that the endodontic microsurgery can be adopted to save tooth that were once though impossible to restore back to functional state.

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