

## Success, survival and failure in Endodontics

**Manoj Mahadeo Ramugade\***

*MDS, MA, LLB, Associate Professor, Department of Conservative Dentistry and Endodontics, Government Dental College and Hospital, Mumbai, St. Georges Hospital Compound, P.D Mello Road, Fort, Mumbai, India*

**\*Corresponding Author:** Manoj Mahadeo Ramugade, MDS, MA, LLB, Associate Professor, Department of Conservative Dentistry and Endodontics, Government Dental College and Hospital, Mumbai, St. Georges Hospital Compound, P.D Mello Road, Fort, Mumbai, India.

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Endodontics is one of the prime specialties of dentistry where diseases involving the pulp and periradicular tissues of odontogenic origin are treated. Success of endodontic therapy is attributed to the triad of knowledge of tooth anatomy, proper access to clean and shape all the canals and sealing of all apical and lateral exits with adequate coronal seal. Compromising any steps in the endodontic triad may lead to failure. Clinically the failure could be easily noticed when patient reported with signs and symptoms in relation to endodontically treated tooth.

The terms success and failure have not been defined precisely in endodontics as there is no concurrent agreement on criteria of success and failure existed among endodontists. According to general dentist absence of pain would be the golden criteria for success of endodontic therapy. Unfortunately, few asymptomatic patients would live with some periapical disease after root canal treatment. Success of endodontic treatment is not always guaranteed in spite of following the best treatment protocol.

Success is attributed to clinical retention and function of tooth which is the ultimate goal of endodontic therapy whereas the failure is attributed to persistence of symptoms such as pain, discomfort, swelling or sinus tract and despite of no radiographic lesion. [1] Success could be determined clinically as well as from radiographic evaluation. Clinical success is evaluated by patients signs such as absence of previous sinus tract or swelling, healing of per radicular tissues in endo-perio lesion or decrease in tooth mobility.

Every tooth that has undergone root canal therapy would be a potential candidate for the failure when the principles of endodontic therapy are violated. Successful endodontics predicts elimination of symptoms such as pain or swelling which were present before the treatment and no abnormal tooth appearance and soft tissue response to manual examination. [2]

Failed root canal treated teeth showed reverse of these conditions and sometimes additional signs such as pus discharge or loss of attachment are evident. Radiographically success is evaluated by reduction in size of periapical pathology or rarefaction, bone remineralization and halted root resorption process whereas failure shows increased or same size periapical lesion subsequent to endodontic treatment. In teeth without periradicular rarefaction success and failure could be best evaluated post-operatively after a period of 2 years whereas, 6 month recall period is adequate for evaluation in teeth with area of rarefaction. [3]

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Success rate of primary non-surgical endodontic treatment ranged from 82.8%-91%. [4,5] The success and survival are the terms which denote clinical healing and non-healing respectively. Clinical symptoms of success and survival could be same to some extent. Survival dictates absence of clinical symptoms such as pain, swelling or increased in mobility but radiograph of concerned tooth showed improper obturation without any periapical lesion or widening of periodontal ligament space or loss of lamina dura. It was observed that, for predictable success the root canal should be filled to within 2 mm of the radiographic apex. [4]

Conclusively it should be remembered that, as an oral health care provider our focus is to provide success than survival or failure and to achieve this every step of endodontic therapy must be followed.

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