REVIEW ARTICLE

PATIENT SELECTION FOR ENDODONTIC TREATMENT

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ABSTRACT

Significant changes have occurred in endodontia over the past 100 years. Endodontic riddles provide a diagnostic challenge that upon successful resolution can result in a wonderful sense of personal qualification for the clinician, but if, in spite of all the efforts, such treatment fails it is extremely discouraging for the operator. All the pros and cons of the treatment should be explained to the patient.

INTRODUCTION

Endodontia is a highly specialized branch of dentistry. When a patient decides to have his tooth saved, he has to be explained the whole process and the time and money required for it. Above all, the patient should have confidence in the doctor's skills. In spite of these, if due to some reasons the treatment fails, both the patient and the endodontist have to face a great deal of disappointment. However, there are cases in which no matter how much efforts are undertaken, the patient has had to lose his tooth. In such conditions, the helplessness and frustration which the endodontist experiences cannot be expressed because in any case, a natural tooth functions more efficiently than any replacement.

LIFE OF A TOOTH AFTER ENDODONTIC TREATMENT

Usually, when a patient is given an option of saving a tooth which otherwise would have been extracted, he has to be explained all the benefits of saving that tooth. He has to be convinced why and how that tooth should be saved. It is the duty of the dentist to make the patient aware of some factors which are involved in root canal therapy, mainly time, money and patience because if the patient is uncooperative, it becomes very difficult for the operator to continue the treatment. However, despite all this, if due to some reasonthe tooth has to be sacrificed, it becomes very discouraging for both the parties.

SOME LIMITATIONS OF ROOT CANAL THERAPY

1. **Time factor-** In my opinion, multiple visit treatment should always be preferred except when apicoectomies have to be performed. The reason behind this is that, as AdeshKakade [1] has confirmed by his study on primary molars, the multiple visit procedure enjoys a greater chance of success. However, in my experience this is applicable on permanent teeth also. The basic criteria of success of R.C.T. is that obturation should be done only when there is:
   - **a.** no seepage from the canals,
   - **b.** no foul odour from the dressing,
   - **c.** absence of tenderness,
   - **d.** dressing on removal is absolutely dry,
   - **e.** root canals are sufficiently wide and
   - **f.** the tooth is functional without any pain.

   To study all these factors multiple visit therapy should be performed. This is in conformity with the views of Morse [7] also. For this, the patient should be willing to report every second or third day for the change of root canal dressing. He should also be informed frankly that for completion of the treatment the number of sittings may exceed the expectation of the dentist.

2. **Economic aspect:** As mentioned before, endodontic treatment is a costly affair, in which the patient has to take into consideration his budget also.
3. **Post endodontic restoration:** Apart from the costof R.C.T. the patient usually requires full cast crown coverage to prevent the treated tooth from fracture under the masticatory forces. This is again an expensive and time-consuming procedure. However, as Baraban [2] has stated, the choice of any specific method of restoration will depend on the condition of the tooth involved and its position in the dental arch.
4. **Peri-apical pathology**: As Dutta et al [5] have stated, large peri-apical lesions will also prove to be a hindrance in the success of R.C.T. Such lesions can be treated by surgical approach but very often due to natural phobia for surgery, the patient might prefer to go for extraction.

5. **Difficult surgical approach**:Even if the patient consents to undergo surgery the approach may be so difficult that the extraction of such tooth could be a better alternative. This is applicable mainly to maxillary molars and premolars which are in close proximity with maxillary sinus. Besides, peri-apical surgery is quite a difficult and tiresome job in case of third molars.
6. **Presence of highly resistant bacteria**: In my 30 years of clinical experience, persistent infection and tenderness due to highly resistant bacteria lead to extraction of three cases. A patient's upper first molar had to be sacrificed even after 14 months of treatment efforts to save it. Besides this, due to recurrent infections, three patients had to lose their central incisors after 4 attempts of peri-apical surgeries along with endodontic treatment. Nikhil et al [8] have confirmed the presence of both aerobes and anaerobes in peri-apical lesions. According to their study, the number of anaerobes was greater in infected root canals. The cases having pain on percussion frequently displayed Peptococcus, Pepto-streptococus, Eubacterium, Porphyromona-gingivallis, Porphyromona-endodontitis and Bacteroides. Of these, Eubacterium was found significantly related to acute or chronic symptoms.

   In some cases, even the use of Calcium Hydroxide, which is considered to be one of the best bactericidal chemicals, failed to destroy highly resistant strains like Enterobacter, Pseudomonas, Pneumococus, Entamoebafaecalis, Serratiafaecalis and Neisseria. These strains have been confirmed by Bystrom et al [3]. Canalda and Pumarado [4] have proved that even Sealapex was not effective on Veilonella species.
7. **Presence of curved or accessory canals:** Practically it has been seen that it is difficult to obturate abnormally curved or lateral canals. As Zeigler et al [12] have confirmed, if the prognosis for complete root canal obturation is questionable, the patient should be advised that careful observation is necessary.
8. **Unskilful operative procedures:** Endodontic management requires a great deal of skill, efficiency and a lot of patience. Even a minor carelessness on the dentist's part or un-cooperation by the patient might lead to failure of all the efforts to save the tooth. Such technical procedures include:
   a. Perforation during location of a canal,
   b. Separation of a root canal instrument in the canal,

c. Locking of irrigation syringe in the orifice of the canal which might force the irrigant into the peri-apical region,

d. Application of excessive chemicals and its seepage into the apical region.

e. As Shetty [9]has reportedeven after removal of paper points and cotton pellets that had been use fortemporary closure, pain persists, indicating the presence of highly resistant bacteria.In such cases, stronger anti-bacterial may have to be prescribed.

9. **Development of brittleness in root canal treated teeth:** David J. Baraban [2] has proved that since a pulp-lesstooth becomes brittle in time due to dehydration, its restoration should be so designed as to provide maximum strength to protect it from fracture. Hefer et al [6] too have confirmed that in a root canal treated case, the dentine loses 9% of its moisture content. As a result, the tooth becomes brittle and its resilience is decreased which makes it prone to fracture. Sorenson and Martinoff [10] too have reported that in the endodontically treated teeth with no intracanal reinforcement, 97.6% failed because of the fracture of the teeth. Weine [11] too has reported that the manipulation of the pulp chamber leads to the greatest weakness of an endodontically treated tooth. According to him the roof the pulp chamber has the configuration of an arch, which is a shape extremely resistant to pressure and stress. When the roof of the chamber is removed for endodontic use, the inherent resistance of the treated tooth is greatly reduced.

FOLLOW UP OF SOME ROOT CANAL TREATED CASES

If teeth with R.C.T. are not properly reinforced, they fracture within one year under masticatory forces. In such cases, if these teeth were to be extracted, the procedure becomes very tiring as they come out in pieces due to increase in their brittleness. Extraction of endodontically treated teeth is also a tedious job requiring the use of a drill or chisel and mallet since they never come out in one piece.

CONCLUSION

In spite of all the precautions, patient may have to lose his tooth due to lack of post endodontic reinforcement and persistent infection. Therefore, it is very important to explain all the prospects to the patients as their time, money and expectations are at stake. We should also keep in mind the failure aspects because no man is absolutely perfect no matter how

much qualified he or she may be. If the patient is not mentally ready to accept the remotest chances of failure, the scope of endodontic treatmentand the reputation of the dentist will suffer definitely.

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