

Conservation of anterior tooth using natural crown in class I subgingival fracture – A case report

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Introduction

Fracture of tooth is one of the most common incidence encountered in routine dental practice. It ranges from enamel fracture, dentine fracture without pulp exposure, crown fracture with pulp exposure and root fracture. According to Heithersay and Morile's classification of subgingival fracture, based on the level of the tooth fracture in relation to various horizontal planes of periodontium, class I fracture is in which fracture line doesn't extend below the level of the attached gingival margin is either to extract the crown or endodontic treatment and conserve the crown with post retained artificial restoration or to extract the root and put artificial prosthesis. Besides many other disadvantages and contra-indications, these procedures are almost always associated with strong psychological stress to patients. This article mainly deals with alternative approach of conservation using natural crown, depending upon the severity and extent of the fracture.

Case report

Four cases of fracture of tooth were reported in People's Dental Hospital and in our private clinic during the period of last one year. All of them were maxillary incisors – two were horizontal fractures subgingivally, one was horizontal fracture at the level of gingival margin and one was oblique fracture supragingival at the labial aspect but subgingival at palatal aspect (fig. 1). As patients were eager to conserve their own crown, radio graphs were taken to exclude any other damage over the root. Under LA, fractured crown was removed and immersed in normal saline. Single visit root canal treatment was performed over the retained root (fig. 2). Then prefabricated commercially available post was adjusted and stabilized into the root canal using Hy-Bond glass ionomer cement. The pulpal remnants over the pulp chamber of fractured crown was carefully removed, enlarged so that the crown fits over the post accurately. Hy-Bond GIC was again used to properly stabilize the fractured crown over the root through post, taking care that crown was in its original position. Excess cement was trimmed so that it doesn't disrupt normal gingival contour and health. In two cases, acid etching technique was employed to splint the fractured tooth with adjacent teeth, two reinforce stability (fig. 3). However, in other two cases, the fractured tooth was left as an isolated unit. Incisal grinding was done on opposing teeth to minimize incisal stress. Patients were relieved after giving the proper instructions.

Among four cases, three cases are under regular follow up every three months. In last eight months, two cases are fairly good, the tooth is stable, periodontal health is fine and

is well maintained. However, one case came with the failure after five months, as the patient was careless to pull a piece of meat over the conserved tooth. On observation, the root was completely stable so the same procedure was again employed to fix the natural crown, there was no further complaint till this report was written.

Discussion:

This procedure is under consideration, as most of the patients are usually unwilling to extract their natural tooth or adapt with artificial prosthesis. So, in comparison with other routine procedures, use of natural crown is more acceptable to the patient psychologically, aesthetically, economically and avoids partial edentulousness. Further, it is more biocompatible as reattachment of periodontal fibres also occurs over the margin of crown beneath the gingival margin.

This procedure however still consists of certain limitations, as the patient should report with anatomically sound crown, retained in the mouth. Further brittleness of the tooth and its ability to function as a masticatory unit is still a doubt. The prognosis of using the crown as an individual unit or using adjacent two teeth for stabilization is still to be evaluated. However, before taking up this treatment in an established form, more cases has to be evaluated for longer period of time with more co-operation and consciousness from the patient.



Fig. 1 – Preoperative photograph showing fractured crown.



Fig 2 – Photograph showing Endodontic treatment of retained root.

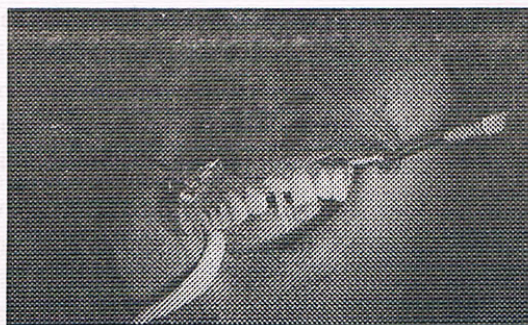


Fig. 3 – Postoperative photograph showing conserved natural crown.

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-Editor