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Miracle or Reunion : A Case Report

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Abstract

Traumatic injuries of teeth are the main cause of emergency treatment in dental practice. Horizontal root fractures are more frequently observed in the maxillary anterior region and young male patients. The most common type of root fracture is in the middle third, followed by apical, and coronal part. A patient during routine examination reported injury to the maxillary central incisors 15 years back. The history prompted us to check the vitality of the teeth and also the colour change of the teeth which was all positive i.e the teeth gave a positive response with the pulp tester and cold test also was positive. Also they showed no colour change. Radiographically the fracture lines on both the central incisors was visible which was evident of revascularisation after union of the fractured segments.

Key Words : Fracture, Central incisors, Reunion, Revascularisation.

Introduction

Traumatic injuries of teeth are the main cause of emergency treatment in dental practice.¹ It occurs most commonly in young patients, and varies in severity from enamel fractures to avulsion.² Root fractures of permanent teeth are fairly uncommon³ and horizontal root fractures are more frequently observed in the maxillary anterior region in the 11-20 years age group male patients.⁴ This kind of fractures usually occurs because of severe trauma, such as traffic accidents and sports injuries, and it has been reported to occur in less than 3% of all dental injuries.¹ These fractures are often complicated in fully erupted anterior teeth, whereas they occur as cusp fractures extending variably down the root in posterior teeth.⁵ Treatment of fractures below the alveolar crest consists of reduction and rigid fixation as soon as possible. The splint is usually left in position for at least a month, but fractures near the cervical line may require a longer time.^{6,7} The majority of root fractures have been shown to undergo healing.

It has been reported that 77% of root-fractured teeth healed, while pulp necrosis occurred in 20%.⁸

Usually, four types of healing sequelae are given:

1. Repair with calcified tissue, giving union across the fracture.
2. Healing with connective tissue.
3. Healing with calcified tissue and connective tissue.
4. Healing with granulation tissue.

The last mode of healing, with granulation tissue, is a sign of pulp necrosis and an indication that endodontic treatment of the coronal portion of the tooth is necessary.⁹ Pulp capping, pulpotomy, or pulpectomy, and root canal obturation are alternative treatment strategies, depending on the maturity of the tooth, size of the exposure, and duration between injury and treatment.⁷ However, there are cases of horizontal root fractures with signs of healing without any treatment.⁶ Additionally, the horizontal root fracture cases showed a higher number of pulp-vitality preservation than luxation injury cases without root fracture.

Case Report

A patient aged 35 years during routine examination reported traumatic injury 15 years back but had no complaint of pain on percussion or palpation on those two maxillary central incisors. The clinical examination revealed no bony protuberance over that area, nodiscoloration, nomobility. Tested vital to electric pulp test, CO₂ ice, and the heat test. Radiographically revealed the fracture lines in the midroot area but no PDL space widening or any changes in the periapical area. Since the patient was completely asymptomatic there was not much to be done except that the patient was advised to take care and report back if any complaint.

Discussion

Maxillary central incisors are most vulnerable to injury sustaining approximately 80% of all dental injuries followed by

maxillary laterals and mandibular incisors.

The most common type of root fracture are in middle third of the roots (57%) next is the apical portion (34%) and next is the coronal part of the root (9%).

Dental treatment may not be necessary in cases of root fracture where there is no mobility or displacement of the coronal segment and the patient is asymptomatic.

Prognosis for horizontal fracture is quite good. Healing of horizontal fracture with or without treatment is reported to occur in upto 70% to 80% cases.

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