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CASE REPORT

Management of Intrusive Luxation: A Case Report

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ABSTRACT:

Intrusive luxation is the most severe dental injury. These injuries lead to many complications like pulp necrosis, resorptions, pulp canal obliterations, ankylosis if not managed early. The present case report discusses management of intruded maxillary right canine and lateral incisor by surgical repositioning followed by root canal treatment

Keywords: Dental trauma, intrusive luxation, surgical repositioning

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INTRODUCTION

Dental traumatic injuries are most common in children and teenagers leading to life time consequences if it is lost(1). They accounts for 33% in permanent dentition of adults (2)(costa ref 2). Luxation injuries include concussion, subluxation, extrusive luxation, lateral luxation and intrusive luxation depending on the force and direction of impact (3). Intrusive luxation is the severe form of injury which is defined as the axial displacement of tooth into the alveolar bone (4–8). It has the reported incidence of 0.5 – 2% of all the trauma affecting the permanent tooth (9). These injuries are difficult to treat and may had complications like pulp necrosis, pulp canal obliteration, inflammatory root resorption, ankylosis, replacement root resorption and loss of marginal bone support(3). The management of the intrusive luxation include spontaneous eruption or surgical repositioning or orthodontic repositioning

depending on the stage of root development and amount of displacement (1). In the present case report the intrusive luxation of maxillary anterior teeth were managed by surgical repositioning followed by passive splint and root canal treatment.

CASE REPORT

A 32-year-old female patient reported to the department of conservative dentistry and endodontics post graduate institute of dental sciences, Rohtak, Haryana with the trauma to right maxillary lateral incisor and canine 24 hours after the fall from the 2-wheeler. Complete medical, dental history was taken. Periapical radiographs (PA) were taken at different angulations. PA radiograph revealed intrusive luxation of 12 and 13[Fig 1(B)]. On clinical examination clinical crown of both teeth were not visible and were immobile. On percussion, metallic sound was heard [Fig 1(A)].

Surgical repositioning of the teeth and root canal treatment was planned. Local anesthesia was achieved with 2% lignocaine hydrochloride with epinephrine 1:80,000 (ICPA Health Products Ltd, Ankleshwar, India). Surgical repositioning was done with the anterior extraction forceps followed by passive splinting with 26-gauge wire (0.016 inch) for 4 weeks [Fig 1(C), (D)]. Electric pulp test and cold test was done which were negative. Root canal treatment for 12 and 13 were initiated within 2 weeks with the placement of calcium hydroxide as an intra canal medicament for 4 weeks. Splint was removed after 4 weeks [Fig 1(E)]. Root canal treatment was completed after one month [Fig 1(F)]. Patient was put on follow up at the regular interval of 2 weeks, 4 weeks, 8 weeks, 12 weeks, 6 months and 1 year. At 1 year follow up there were absence of any clinical signs and symptoms or any radiographic changes [Fig 1(G), (H)].



Fig 1: (A) Pre-operative clinical picture, (B) Pre-operative radiograph, (C,D) passive splinting after surgical repositioning, (E) Post-operative clinical picture after splint removal, (F) Post-operative radiograph after root canal treatment, (G) Clinical picture at 1 year follow up. (H) Radiograph at 1 year follow up.

DISCUSSION

Intrusive luxation is the severe form of injury having a poor prognosis leading to periodontal fibers and root cementum destruction (8,10). Clinically the tooth is displaced axially, immobile and on percussion high metallic sound is observed. These injuries are managed by allowing spontaneous eruption or surgical or orthodontic repositioning of the tooth. The treatment option depends on the stage of root development and the amount of intrusion. For the teeth with incomplete root formation spontaneous eruption is recommended irrespective of the degree of intrusion. After 8 weeks if no re eruption is observed then orthodontic repositioning is done. This treatment is aimed to preserve the pulp vitality. For the teeth with complete root formation if the intrusion is <3mm re eruption can be allowed for 8 weeks. If the teeth are not re-erupted then surgical repositioning is recommended. Surgical or

orthodontic repositioning is recommended if the intrusion is between 3 -7 mm. In the present case as the teeth were mature with the closed apex and intrusion was > 3mm so surgical repositioning was done. Splinting of the teeth is recommended to maintain the teeth in its correct position promoting initial healing and controlled function. The recent guidelines of IADT recommends passive and flexible splints of 0.016 inch. In our case passive splinting was done with 26 gauge wire(0.016 inch) for 4 weeks (1). Intrusive luxation have many complication like pulpal necrosis, pulp canal obliteration, inflammatory root resorption, ankylosis, replacement root resorption and loss of marginal bone support (3). In the present case as the teeth were fully developed root canal treatment was initiated within 2 weeks as pulp is most likely to be necrosed. Calcium hydroxide was used as an intra canal medicament for 1 month and root canal treatment was completed (11). Other than calcium hydroxide alternately corticosteroid / antibiotic paste can be used to prevent inflammation and external inflammatory resorption for 6 weeks (12–15). Follow up for these injuries are mandatory to prevent the post traumatic complications like resorptions, pulp canal obliterations, ankylosis, breakdown of marginal gingiva and bone. So, in the present case patient was put on follow up at the regular interval of 2 weeks, 4 weeks, 8 weeks, 12 weeks, 6 months and 1 year. After 1 year, patient was not having any clinical signs and symptoms with no radiographic changes.

CONCLUSION

Intrusive luxation injuries may lead to pulpal necrosis, pulp canal obliteration, inflammatory root resorption, ankylosis, replacement root resorption and loss of marginal bone support post trauma. So, the treatment should be initiated as soon as possible and regular follow up is mandatory to prevent any complications.

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