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SURGICAL MANAGEMENT OF LATERAL LUXATION –A CASE REPORT.

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Abstract:

Lateral luxation is the displacement of the tooth in a direction other than axial, which is accompanied by comminution or fracture of the alveolar socket. Lateral luxation is one of the most prevalent dental injuries among the general population, resulting in up to 27% of all dental wounds. The aim of this report was to present a case of a dental lateral luxation caused by tipping forces from finger. The tooth was extruded from its bony lock, replaced into its original anatomic position, and secured with fiber reinforced composite. The permanent endodontic treatment was performed 4 weeks after repositioning. At the end of the 8-months follow-up, the tooth was asymptomatic and pathological alterations absent.

Keywords: Luxation, alveolar socket, splinting

Introduction:

Lateral luxation is a term used to describe the displacement of the tooth in a direction other than axial, which is accompanied by comminution or fracture of the alveolar socket.[1] luxation injuries compromise 15-61% of dental traumas to permanent teeth.[2] In both primary and permanent dentition, tooth luxations primarily involve the maxillary central incisors region and are seldom seen in the mandible. Lateral luxation has been found to be 11% among traumatized permanentteeth.[3] This case report describes the surgical management of lateral luxation.

Case report:

A female patient of 30 years reported to the department of conservative dentistry and Endodontics with a chief complaint of misaligned front tooth and moderate pain. Clinical examination showed lateral luxation of right central incisor. [Fig1]

Fig 1: lateral luxation of right central incisor

The tooth was luxated labially. Patient reported that the tooth luxated because of biting on the index finger placed in between the upper and lower central incisors. There was no mobility of the involved tooth. Metallic sound was positive on percussion .Tenderness to percussion was negative. Pulp vitality was done and the tooth showed slightly delayed response. Radiographic examination showed no alveolar fracture and presence of periodontal ligament widening. As it was a recent trauma and the patient was concerned about the realignment of central incisor. Repositioning to its original position and splinting of the tooth was planned. The patient was explained about the treatment and informed consent taken .An infraorbital regional block anaesthesia was given to anesthetize the maxillary anterior region and with a maxillary anterior forceps the tooth was lightly extruded past the bony alveolar lock and then directed back into its correct position using gentle force [Fig-2]

Fig 2: Correct position of luxated tooth

Then the labial bone plate was compressed to ensure complete repositioning and to facilitate PDL healing. After repositiong, all the four maxillary anterior teeth were etched with 37% phosphoric acid for 60 seconds, followed by rinsing and drying the tooth. An appropriate size of fiber splint [Hager& Werken] was selected and placed in a dappen dish containing bonding agent. The etched surface was applied with a thin coat of bonding agent and the fiber from the dappen dish placed on the tooth and cured for 15 sec, then flowable composite [3M] was applied on to the fiber splint and cured for 20 seconds. [Fig-3]

Fig 3: Fiber splint tooth

The edges of the splint finished to prevent any laceration of soft tissues. The patient was instructed to use soft diet and recalled after 3 weeks for further evaluation. At the end of the third week the splint was removed and as the tooth exhibited signs of discoloration, positive to percussion an endodontic treatment was planned and completed.[Fig 4]

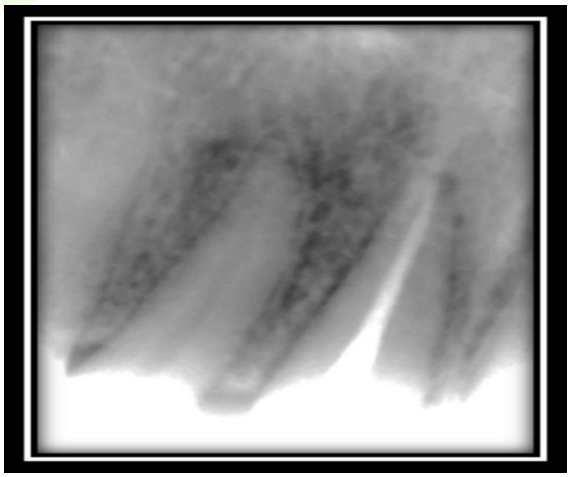

Fig 4: Obturated tooth

At the end of the 12-months follow up, the traumatized tooth was without clinical symptoms and the gingiva around the tooth was healthy in appearance, the patient was scheduled for further follow-up.

Discussion:

The most common injuries to permanent teeth occur secondary to falls, motor vehicle accidents, violence, and sports.[4-6] but this was an unusual case where trauma was because of biting force [lever action]. Lateral luxation is characterized by the forceful displacement of the root tip through the facial alveolar wall, which complicates the repositioning procedure.[7] It is usually found that if the treatment of a laterally luxated permanent tooth is delayed (i.e., more than 3-4 days), the tooth is difficult to reposition.[1] In this case no initial endodontic intervention was planned as a conservative approach might be indicated and active treatment avoided as the patient was at low risk of inflammatory resorption and has not suffered intrusive luxation .The diagnosis of pulp necrosis should be based on two or more of the following signs: crown discoloration, negative sensibility testing and periapical radiolucency.[8]In a laterally luxated tooth, the pulpal condition should be monitored and if the pulp becomes necrotic, a root canal treatment is indicated. However, in laterally luxated permanent teeth with closed apices, pulp necrosis is a common healing complication [15-59%].[9] The splinting period indicated for periodontal ligament therapy is 2 to 4 weeks, but in the case of lack of periodontal support or breakdown of marginal bone, the ideal splinting time must be extended to 8 weeks.[10] Lateral luxation injuries should be managed by a combination of clinical and radiographic observation, fracture reduction, splinting, and when required, endodontic treatment or extraction.[11]From previous clinical studies long term survival (100%) can be expected for lateral luxations.[12]

Conclusion:

A dental injury should be considered an emergency and should be treated immediately to relieve pain, facilitate reduction of displaced teeth, aesthetics and improve prognosis. An adequate history, systematic approach and rational therapy and periodic evaluation are important for overall successes and survival of tooth.

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