ENDODONTICS: A SALVAGER FOR UNUSUAL AETIOLOGY OF TRAUMA

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ABSTRACT

Background: Animal attacks are a cause of human injuries worldwide. Several human–leopard clashes have been reported in India.

Case Presentation: A 40-year-old woman reported with a history of Leopard attack leading to tooth mobility and pain. Laceration of tissues was found in the orofacial region and primary closure and treatment were done in Ratlam. On extraoral examination, necrosis of the flap with blackish discoloration of skin on left side ala of nose. Overlying the necrosed skin, intact sutures were found with scar/ laceration on the lips. Luxation injury without involvement of alveolar bone resulted in proclination i.r.t 22. A multidisciplinary approach was planned. Firstly, manual manipulation and repositioning of the tooth was done followed by stabilization. Endodontic treatment i.r.t 22 was planned and done. The extra-oral management was implemented with a plastic surgery by performing a paramedian forehead

flap. The alar cartilage was remodelled with left auricular cartilage. Following suturing, periodic esthetic and endodontic check-up was done for one, three and six months and one year.

Conclusions: Animal attack and related dental trauma management is usually complicated and requires a coordinated attention of multiple specialty branches. Long-term follow-up of the patient is essential because numerous complications may occur even after years of trauma.

Key words: Animal Attack, Endodontics, Leopard, Splinting

INTRODUCTION

Animal attacks are a cause of human injuries and fatalities worldwide. Several human–leopard clashes have been reported in India. Such attacks of leopard take place in close vicinity to dense forests, where the health-care facilities are deficient. The clinical presentation and appropriate treatment of infected bite wounds vary according to extent of the wound. [1]

Cervicofacial region (36%) is the most common site involved in animal attacks, followed by lower extremity (31%), upper extremity (19%) and chest (14%).[2] Trauma to supporting tissues (extrusive, lateral and intrusive luxation, tooth avulsion) includes 15 to 61% of traumatic episodes and considered the most severe lesions[3] However, there is no reported trauma case of animal attack with endodontic findings. Thus, this case report highlights the rare presentation of leopard attack with traumatic dental injury and discusses the modalities involved in treatment of the same.

CASE REPORT

A 40-year-old housewife from Ratlam, Madhya Pradesh reported to our Department with a history of Leopard attack leading to tooth mobility and pain. She was attacked by a leopard while working in the field one morning. The patient was unconscious for about 3 hours. Laceration of tissues was found in the orofacial region and nail marks on elbow of the right side. Primary closure and preliminary treatment were done in a Private hospital in Ratlam. But unfortunately, the primary treatment provided was below par and the ideal treatment protocol was not followed. Whereas the delay of more than 6-12 hours increases the chances of infection, patient only reported to us after 20 days of the incident. On extraoral examination, necrosis of the flap with blackish discoloration of skin on left side ala of nose involving nasal bridge and lower 3rd of nose along with facial asymmetry was noted. Overlying the necrosed skin, intact sutures were found with scar/ laceration on the lips. (Picture 1) According to Classification of Facial bite injuries by Lackmann, the diagnosis of IIA Deep injury with muscle involvement was made. Luxation injury without involvement of alveolar bone resulted in proclination i.r.t 22. (Picture 2) Tenderness on percussion was positive with a negative response on EPT. Radiographic examination revealed, luxated tooth with radicular radiolucency surrounding the whole root irt 22 with periodontal ligament space widening.(Picture 3) It was diagnosed as necrotic tooth i.r.t 22 with Extrusive luxation (peripheral dislocation partial avulsion) **N873.66**. Partial displacement of the tooth out of its socket [Classification by **Andreasen** (1981)]

A multidisciplinary approach comprising of Dental (Endodontic) management and soft tissue (Plastic and Oral surgery) management was planned. Firstly, manual manipulation and repositioning of the tooth was done followed by stabilization with Fiber splint (Angelus Interlig Fiber Splint) and Flowable composite (Dtech Compo Flo). (Picture 4) Occlusal adjustment was performed. Now for the necrosed tooth (22), Root canal treatment

was initiated by doing access opening, working length determination and biomechanical preparation. Interim calcium hydroxide dressing (RC Cal, Prime Dental) was changed for 3 times with an interval of 10 days each. Following this, the endodontic treatment was concluded with Obturation with gutta percha (Dia-dent) and resin sealer (AH Plus) with lateral compaction technique followed by a composite (Solare-X Nanohybrid Composite) post-endodontic restoration of 22. (Picture 5) Spacing was present between 21 and 22, thus the space closure was planned with an esthetic composite restoration. (Picture 6)

During the endodontic interappointment period, the extraoral management was implemented with a plastic surgery. The defect was reconstructed by performing a paramedian forehead flap. The alar cartilage was remodelled with left auricular cartilage. Following suturing, periodic esthetic and endodontic check-up was done for one, three and six months and one year. (Picture 7-10) Over the months, the esthetics was found to be acceptable and suture marks were disappearing. The endodontically treated tooth showed signs of infection, pus drainage, sinus tract or swelling.

Picture 1: Pre-Operative photograph

Picture 2: Pre-Operative Intraoral Photograph (Buccal View)

Picture 3: Pre-operative Radiograph

Picture 4: Fibre Splinting

Picture 5: Completed Root Canal Treatment

Picture 6: After Composite Restoration

Picture 7: One month follow-up

Picture 8: Six months follow-up

Picture 9: One-year follow-up

Picture 10: One-year intraoral follow-up

DISCUSSION

The leopard (Panthera pardus) is one of the five “big cats” in the genus Panthera. Invasion of animal territory by humans has increased interaction between animals and humans, hence causing injuries to humans.[1] Following injury, the ultimate treatment depends on the type of wound, depth of the wound, time elapsed since injury, site of the wound and amount of tissue loss, if any.[4,5,6]

Facial bite wounds usually show low infection rate, due to rich blood supply of the face. Delay beyond 6–12 h in seeking medical attention raises the probability of infection. According to current recommendations, combination of amoxicillin and clavulanate is the antimicrobial agent of choice for prophylaxis.[6] However, in the present case, the primary treatment provided was not up to the mark and also the patient reported to us after 20 days.

The reported prevalence of pulp necrosis in luxated teeth varies from 17 to 100% in accordance with severity of trauma type.[7-11] The luxated tooth in this case was repositioned manually and stabilized with Fibre splint. Root canal treatment was planned for the tooth with

Standardized technique. The spacing present was restored with Composite. During the multiple visits for endodontic treatment, the surgical treatment was performed. The paramedian forehead flaps used in the reconstruction of nasal defects are indicated with an advantage of superficial axial blood supply which make flap necrosis unlikely.[12-14] The use of cartilage autografts was considered over alloplastic graft to avoid the most dreaded complication of infection and rejection.[15] Follow up was done for both the endodontic treatment and plastic surgery to check for healing and satisfactory esthetics.

CONCLUSION

Animal attack and related dental trauma management is usually complicated and requires a coordinated attention of multiple specialty branches. In the present case report, we dealt with a delayed traumatic injury and thus restored esthetic and functional requirements of the patient.

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