Case Report

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Management of Mandibular Symphyseal Fracture: A Case Report

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ABSTRACT

Background: Mandibular fractures are less frequent in children when compared to adults, which may be due to child's protected anatomic features and infrequent exposure of children to alcohol related traffic accidents. Treatment principles of mandibular fracture differ from that of adults due to concerns regarding mandibular growth and development of dentition. Management of mandibular fracture in pediatric patient poses a unique challenge to the maxillofacial surgeon in terms of treatment planning, functional and nutritional needs. Trauma to the pediatric patients can have a deep psychological impact on the minds of young children. A case of 5 yr old girl with fracture of symphsis of mandible managed by open reduction using acrylic cap splint is presented.

Keywords: Fracture, symphyseal, mandibular.

INTRODUCTION

Fracture of mandible occurs more frequently than any other fracture of facial skeleton. It is one of the serious facial bone injury that a practicing dental surgeon may expect to encounter. It is also a facial fracture which may have a misfortune to cause as a complication of tooth extraction. Maxillofacial fractures are less common in children. The incidence is less than 1% below age 5 and upto 8% in children younger than 12 years.(1) Although in hospitalized pediatric patient mandibular fractures are most common and accounts for 56%.(2,3) In pediatric patients symphysis and parasymphysis fracture accounts for 15-20% while body fractures are rare.(4) Major cause of pediatric mandibular fractures are fall from height, road traffic accidents, child abuse, hyperactivity of child, assault etc.(5)

The principles of management of mandibular fracture differ in children when compared to adults. While in adults, absolute reduction and fixation of fractures is indicated, in children minimal manipulation of facial skeleton is mandated. The goal of the treatment of these fractures is restore the underlying bony architecture to pre-injury position, in a stable fashion as invasively as possible with minimal residual esthetic and functional impairment.(6)

Fractures of Mandible may be classified as

1. Fractures with gross comminution of the bone and without significant loss of hard and soft tissue.
2. Fractures with gross comminution of bone with extensive loss of both hard and soft tissue

CASE REPORT

A 5yr old girl reported to our Department of Pedodontic and Preventive Dentistry with the chief complain of pain and asymmetry of face (Figure 1). Patient had a history of fall from the height 25days back while playing. On taking history it was reported that the patient was well oriented and conscious at the time of injury. No history of

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Fig 1: Facial profile showing asymmetry.

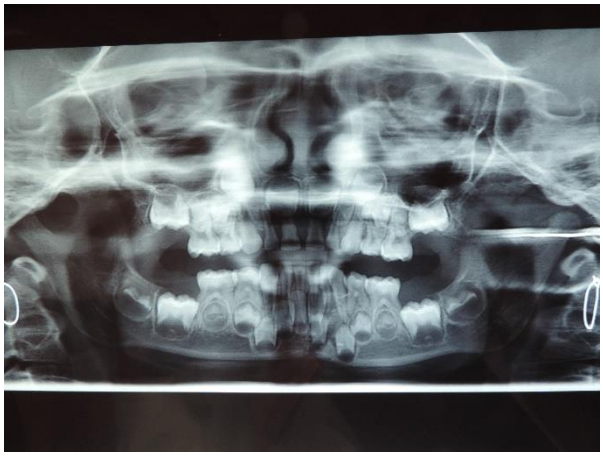

Fig 2: Pre-operative OPG.

Fig 3: Preparation of Cap Splint.

loss of consciousness, bleeding per ear, nose was reported. There was no history of vomiting and seizures. Intra oral bleeding was evident at the time of injury.Other parameters were within normal limits at the time of operation.

Past dental history revealed that the patient visited a government hospital on the day of fracture and got wiring done for 2 weeks and after removal of the wiring after 7 days patient visited our department with complain of asymmetry of the lower face and was not satisfied with previous treatment. Clinical examination revealed bruises on the chin, and deranged occlusion. Step deformity with tenderness and mobility along the lower border of mandible on left side canine region. There was limited mouth opening due to pain and muscle spasm. Clinically a displaced fracture was evident between 72 and 73. Preoperative orthopantomograph (Figure 2) was taken which confirmed the clinical finding. All primary teeth were present. Occlusion was deranged. The primary impressions were taken with alginate and two sets of casts were subsequently poured. Mandibular cast was spilt with rotary disk at the site of fracture between the left primary lateral and left primary canine. An acrylic cap splint was prepared with adams clasps for retention on lower deciduous primary second molars after fracturing the cast and reducing the fracture.

The management was done under conscious sedation with an intra oral approach, in which a vestibular incision was given to expose the left parasymphyseal fracture site with fibrous callus. Curettage of fibrous callous was done with curette & extraction of left primary central and lateral incisor was done. Displaced Fractured fragments localised and reduced manually and cap splint (Figure 3) wascemented to the reduced fractured jaw with help of luting GIC. Inter dental wiring was done. Irrigation done normal with saline.Closure of the surgical site was done with 3-0 Vicrly Surture. Extra oral suspension bandage done over lower 3rd of the face.

DISCUSSION

Facial fractures in children account for the approximately 5% of all facial fractures.**(7)** Male predilection is seen in all age groups. The etiologies of mandibular fractures in children are usually falls and sports injuries.Pediatric patients present with a unique challenge to the maxillofacial surgeon because of type and frequency of fractures sustained by the children are often different from adults.Management of fractures in children differs

from adults because of anatomic variation, rapidity of healing, degree of patient co-operation and the potential for changes in mandibular growth. (8,9)

Most of the pediatric fractures are greenstick type, so conservative approach is preferred as the fracture heals rapidly as the child grows normally. Treatment of mandibular fracture in children depends on the fracture type and the stage of skeletal and dental development.(3) Mandibular growth and development of dentition are the main concerns while managing pediatric mandibular fractures. Majority of pediatric body and parasymphysis fracture are undisplaced because of elasticity of bone and tooth buds. Slight occlusal discrepancies resulting from lack of perfect reduction correct spontaneously with the eruption of permanent teeth. Non displaced body or symphysis fracture without malocclusion can be treated by close observation, soft diet and avoidance of physical activity.

Exact method employed for immobilization depends upon child's age and stage of dental development. Under two years of age, no anchorage can be taken from teeth as they are unerupted. In adults, absolute reduction and fixation of fracture is indicated, whereas in children minimal manipulation of the facial skeleton is mandated. The small size of the jaw, existing active bony growth centers and the crowded deciduous teeth with permanent tooth buds located in great proximity to the mandibular and mental nerves, all significantly increase the therapy related risks of pediatric mandibular fractures and their growth related abnormalities.

CONCLUSION

Mandibular fractures in children most commonly occur in the condyle region followed by parasymphysis and angle region. In the majority of cases, it is minimally displaced and can be managed conservatively. A severely displaced fracture may require open reduction and rigid internal fixation. But most of situations can be best managed with acrylic cap splint fixation with circummandibular wiring.(3,8)

CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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