

Fracture of Medial Pole of Right Condyle and Symphysis of Mandible in 6-Year-Old Male-A Conservative Approach

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Abstract

Much importance to be emphasized on the fractures of the mandibular condyle and the symphysis in children due to the growth center status. Risk involving this region might lead to facial asymmetry and growth retardation. Most common etiology includes trauma, fall, sports, occupational hazard, and interpersonal violence. Moreover, in the mandible, condyle is the foremost anatomical site to fracture. In this case report, we highlight a 6-year-old male witnessed with a fracture of unilateral medial pole of right condylar head and mandibular symphysis. Main concept of the conservative approach is to emphasize that non-surgical and functional approach plays a crucial role in the management of mandible symphysis and condyle fractures in pediatric population thereby avoidance of growth inhibition.

Keywords: Trauma; Condyle; Pediatric; Mandible; Conservative approach

Introduction

Among the parts of the mandible, condyle is the most involved anatomical site constituting 19-52 % [1,2], usually witnessed as greenstick type rather than displaced [3]. Etiology includes trauma, fall, road traffic accidents, sports activities, occupational hazard, and interpersonal violence. In this case report, we highlight a clinical challenging situation of fracture involving medial pole of right condylar head and mandibular symphysis in a 6-year-old male who underwent closed reduction and non-rigid mandibular splint.

Case Report

A 6-year-old male was attended in the Department of Dentistry and Faciomaxillary Surgery with swelling on right side of face caused due to trauma. Clinical examination revealed edema, pain, restricted mouth opening, deviation of the mandible to the affected side, anterior crossbite, crowding, defective mastication, incorrect speech, facial asymmetry and restricted lateral temporomandibular joint (TMJ) movements. Radiological investigations such as facial computed tomography (facial CT) – axial, sagittal sections - revealed fracture of medial pole of right condylar head and mandibular symphysis (Figures 1 and 2). Priority was that of closed reduction of the fractured segments followed by insertion of a non-rigid mandibular splint, cast models created removable mandibular splint measuring 3-3.5 mm done. This avoids direct force on the mandible thereby providing

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functional reposition. An effective reduction and remodeling were evident after 2, 4, 6, 8, 10 and 12 months follow up. Postoperative clinical findings include absence of pain, swelling, discomfort, stable occlusion, satisfactory mouth opening and lateral TMJ movements.



Figure 1: Coronal facial CT depicting fractured mandible symphysis (arrows).



Figure 2: Saggital facial CT depicting fractured medial pole of right condylar head.

Discussion

Etiology includes road traffic accidents, trauma, fall, sports activities, interpersonal violence, and occupational hazard. Various factors which influence the treatment plan include age of the patient, dentition, occlusion, level, displacement, co-morbidities, and side–ipsilateral or contralateral. Clinical findings include edema on the affected side, deviation of the mandible to the affected side, deranged occlusion, restricted mouth opening and lateral TMJ movements, pain, tenderness, and facial asymmetry [2,4]. Based on the age group of the patient, a treatment method such as closed reduction or surgical approach has been planned. In children, closed reduction followed by intermaxillary fixation is the treatment of choice. The main

concept of this treatment is to focus on early mobilization, functional stimulation, and bone remodeling. Whereas the surgical approach is indicated in adults with displaced or dislocated condylar heads, such as open reduction and internal fixation (ORIF) and intermaxillary fixation (IMF) [2,5]. One main advantage in pediatric population is that rapid healing is observed within a span of three to four weeks compared to adults which might take six months. Regeneration of the condylar process is contributed by articular disc and capsule. Internal factors such as remodeling of trabecular bone followed by endochondral ossification occurs during the healing period of condylar fractures in children, thereby preserving the articular disc, fibrous capsule and cartilage of the condyle.

Conclusion

In our case, non-surgical approach was planned to promote active growth since the affected area was that of mandibular condylar head. This, in turn, will stimulate functional remodeling and facial symmetry via formation of new sites of bone during chondrocyte proliferation.

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