

Condylar Fracture in Children: Conservative approach.

¹Dr. Bibhu Prasad Mishra, post graduate IIIrd year, Department of Oral and maxillofacial surgery, I.T.S dental college and hospital and research center, greater noida, uttar Pradesh, 201308

²Dr. Shivani Kapoor, post graduate IIIrd year, Department of Pedodontics and preventive dentistry, I.T.S dental college and hospital and research center, greater noida, uttar Pradesh, 201308

³Dr. Abhijeeta Sahoo, BDS, Hi-tech dental college and hospital, Odisha, Bhubaneswar, 751015

Corresponding Author: Dr. Bibhu Prasad Mishra, post graduate IIIrd year, Department of Oral and maxillofacial surgery, I.T.S dental college and hospital and research center, greater noida, uttar Pradesh, 201308

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Abstract

Condylar fracture in pediatric population may proceed a prompt genuine sequelae if not appropriately treated. Early furthermore, exhaustive conclusion dependent on point by point history assortment and cautious assessment is basic. But all encompassing radiograph and CT, MRI could give extra data on the damage of encompassing delicate tissues. Moderate treatment including restoration of the typical impediment is the primary decision for youngsters with condylar break. While open decrease is demonstrated in old kids, particularly those with extreme disengagements. Preservationist treatment could accomplish great clinical outcomes and worthy bone renovating in most kid patients. Radiographic confusions are unavoidable and need further analysis. Focusing on remedial methodologies for offspring of various age and wounds are required to improve longterm results.

Keywords: Condyle, Pediatric, Trauma, Management.

Introduction

Mandibular fractures are the most well-known sort of maxillofacial fractures in kids. What's more, condylar breaks represent 28% to 80% of all the mandibular cracks agreeing to various investigations with young men more ordinarily influenced than young ladies^[1]. As youngsters particularly small kids couldn't communicate their sentiments appropriately and the condylar cracks are typically brought about by an aberrant hit to the jaw or mandibular edge, they are barely noticeable and not analyzed until entanglement emerged. Deferred and ill-advised treatment may prompt genuine issues including malocclusion, development unsettling influences and facial asymmetry, and in certain examples ankylosis. The motivations behind this article is to present the present circumstance of the finding, treatment and result assessment of condylar break in youngsters, and to break down future research bearings^[1].

Diagnosis of condylar fracture in children

For early conclusion, point by point history assortment and cautious assessment for dental impediment, limited mouth opening, and pathologic signs in the preauricular district (expanding, delicacy, and absence of development of the condylar head) are significant. Positive determination of condylar cracks is just conceivable with radiological assessments. The all encompassing radiograph remains the essential indicative device and is the most reliable X-beam accessible to dental specialists. While Computerized Tomographic (CT) examine gives increasingly exact data, by the position of the articular disc. Furthermore, the damage to the disc is one of the possible risk factors of TMJ ankylosis^[1]

Mandibular breaks happen in a more prominent number of every single facial injury, because of their front projection, anatomically, in the lower third of the face, making it helpless. Thusly, the condyle is the most influenced area. Concentrates prove the reality credited to the relative secured social condition of the kid and the low obstruction of the maxillofacial skeleton up to the age of five a long time^[2]. The fracture usually results from a trauma suffered in the region of symphysis or mandibular parasymphysis. In children, fracture of the condyle can lead to complete separation from the center of bone growth, resulting in ankylosis that can occur within the first months up to two years, as well as deformities^[2].

Sign and symptoms

The signs and symptoms that characterize the condylar fracture are: pain, altered dental occlusion, premature contact of the teeth, shortening of the affected side branch, facial asymmetry (observed with the deviation of the chin towards the side of the fracture, at rest or during opening of the mouth), open bite with flattening of the body on the affected side, limitation of jaw movements and mandibular retrognathism (in the case of bilateral condylar

fractures) Edema and bruising on the joint region, external auditory canal bleeding and tenderness on the preauricular region are common^[2].

Controversy

The choice of treatment for condylar fractures is controversial because of the uncertain prognosis. Several factors influence the choice of treatment, conservative or surgical, ranging from the patient's age, the fracture region, the degree of displacement, if there are other associated fractures, the possibility of an occlusion when there is presence of teeth, stage of bone and dental development, muscle function.

Treatment option for children with condylar fracture

Traditionalist treatment as a rule comprises of absence of pain, delicate diet, restoration of the ordinary impediment followed by physiotherapy. As we realize that the development of the mandible condyle is basic for ordinary mandible development, particularly of the ramus. What's more, impedance in the development of the mandible can impact the development of the maxilla on account of the occlusal plane. The intercusp occlusal and the occlusal plane give the going with development of the maxilla and mandible. Consequently rebuilding of an ordinary impediment plane is fundamental for traditionalist treatment in youngsters with condylar break. There are numerous estimates announced in the writing to help occlusal restoration and maintainance, for example Maxillomandibular Obsession (MMF), occlusal support and orthodontic machine. MMF is the exemplary strategy for close decrease in grown-up patients. Be that as it may, in kid patients, the use of MMF is convoluted by poor consistence, and on account of essential in dentition, need of adequate help because of the short crown and base of primaryteeth and halfway ejection of youthful lasting teeth. Tabrizi et al. discovered comparative impact of inflexible intermaxillary obsession furthermore, directing

flexible, however managing versatile was increasingly fair and worthy for youngsters as they could have work during treatment. Occlusal support and orthodontic machine could stay away from the inadequacies of MMF. Be that as it may, it takes some effort to create the support or machine in the research facility and requires impression taking which is agonizing in small kids^[2].

Comprehensive assessment of treatment outcomes- So far, there is still no definite treatment guideline on conservative management of condylar fracture in children. Functional exercises including mouth opening and lateral excursion are beneficial to ankylosis prevention and fracture healing promotion. Unilateral condylar fracture treated by closed methods may develop facial asymmetries with shortening of the face on the side of injury, while bilateral fractures tend to develop mandibular retrognathia.

A retrospective review was performed of patients presenting with mandibular condyle fractures to a level 1 pediatric trauma center between January 2003 and December 2016. All patients were under 16 years old. Initial data was extracted from a dedicated maxillofacial trauma database. The medical records and imaging of included patients were then reviewed. Data on demographics, etiology mechanisms, fracture type, treatment, follow-up, and outcomes were recorded. Condyle fractures were classified as either isolated or in combination with another mandibular arch fracture. The pattern of condyle fractures were classified using the Strasbourg Osteosynthesis Research Group (SORG) classification. This classifies fractures into 3 types. Condylar head or diacapitular fractures are where the fracture line starts in the articular surface of the temporomandibular joint and may extend outside the capsule. Fractures of the condylar neck are those in which more than half of the fracture line is superior to a line

drawn perpendicular to the ramus and which lies at the most inferior aspect of the sigmoid notch. Fractures of the condylar base are those in which more than half of the fracture line is inferior to this line. Treatment was classified as conservative if no intervention was undertaken and patients were managed with simple measures such as soft diet. Closed treatment involved placing the patient in intermaxillary fixation (IMF). This decision would be made by a senior clinician and was undertaken if the patient presented with a deranged occlusion or significant displacement and/or shortening of the condylar fracture. The method of IMF varied depending on patient age and dental status. In the permanent dentition, archbars would be employed while circummandibular and piriform rim wires would be used in patients with a mixed dentition. Closed reduction was maintained for 7 to 10 days and reviewed in a subsequent trauma clinic. Open treatment involved open reduction and internal fixation (ORIF) of fractures using standard non-resorbable miniplates^[3].

Discussion

Traditionally when evaluating the treatment results, operators are mainly focused on bone remodeling of the joint. Nowadays, more attention has been paid to functional recovery of masticatory muscles as they may further affect joint structures and cause TMD in the future. In fact, several studies have used mandibular kinematics and surface Electromyography (EMG) of masticatory muscles to evaluate the functional outcomes after treatment of condylar fractures in adult patients. For children, especially young children, complicated measurements and invasive procedures such as needle electrodes for measuring the EMG activities of medial pterygoid and lateral pterygoid muscle are not suitable. Therefore, simple and noninvasive methods for functional evaluation in children are required to gain more

information on long-term prognosis. Comminuted fractures were managed surgically in all age groups. Intracapsular fractures are treated conservatively in patients younger than 12 years. Some authors suggest that no intermaxillary ligation or special treatment is needed for the nondisplaced mandibular fractures involving dentary bone, and simple observation, limitation of motion, and diet control are sufficient. However, in our and many authors experience this is difficult in children because of poor compliance. We consider that patients with deciduous and mixed dentition with or without displacement of the mandibular fracture should undergo conservative treatment, while those in permanent dentition can undergo ORIF because there will be no effect on tooth germ.

Conclusion

Conservative treatment is a viable option, with a low failure rate. We can conclude from this study that in cases in which the pediatric patient presents mixed dentition, which imposes limits on the treatment methods, the use of ice cream sticks for physiotherapy to improve the mouth opening associated with liquid diet in the first month, showed to be an efficient alternative with satisfactory results observing the outpatient follow-up aiming at identifying and treating as soon as possible changes in the child's development. Taken together, conservative treatment of condylar fracture in children has satisfactory clinical results though radiographic examination is unfavorable. Randomized multicenter studies help to establish a comprehensive evaluation system, and develop targeting treatment plans for children of different age and injuries to improve long-term outcomes

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