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Clinical Examination and Management of Mandibular Fractures: A Focus on Open and Closed Reductions

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Abstract

Mandibular fractures represent one of the most common injuries in maxillofacial trauma due to the anatomical prominence and functional importance of the mandible. Effective management of these fractures requires accurate clinical and radio-graphic evaluation, restoration of occlusion, and selection of an appropriate treatment modality tailored to the individual patient. Special consideration is given to bio-mechanical factors influencing fracture patterns and displacement, as well as age-related differences between pediatric and adult patients. Diagnostic protocols, including clinical assessment and imaging modalities, are discussed in detail to ensure accurate diagnosis and treatment planning. Treatment strategies are evaluated with respect to fracture location, displacement, dentition status, and patient compliance, highlighting the advantages and limitations of closed reduction, open reduction and internal fixation, and combined approaches. The chapter also presents a series of six clinical cases illustrating various fracture types and management strategies across different age groups, demonstrating that successful outcomes depend primarily on accurate restoration of occlusion and stable fixation rather than the exclusive use of a single treatment modality. Comparative discussion with current literature supports an individualized, evidence-based approach to mandibular fracture management. The chapter concludes that meticulous assessment, correct occlusion alignment, and appropriately selected reduction techniques are critical for achieving optimal functional and aesthetic outcomes while minimizing complications.

Most important issue for jaw fracture is to confirm the true Occlusion if you bring the upper and lower jaws in true occlusion after that it will be so easy to bring the broken bone fractures, closer to each other by the way you will reduce the risk of malocclusion after open or closed reduction.

Background: Jaw fractures are among the most common injuries of the maxillary region, often resulting from traffic accidents, falls, assaults, and sports-related trauma. Condylar fractures, in particular, present unique diagnostic and therapeutic challenges.

Objective: To evaluate the clinical characteristics, management approaches, and outcomes of six mandibular fracture cases treated with open and closed reduction techniques.

Methods: Six patients with different types of mandibular fractures were clinically and radio-graphically examined. Treatment methods included closed reduction with bi-maxillary fixation and open reduction with internal fixation, depending on fracture type, displacement, and patient age.

Results: Of the six cases, fractures involved the condyle, angle, and symphysis regions. Four cases were successfully treated with closed reduction, while two required combined open and closed techniques. Functional recovery and satisfactory occlusion were achieved in all patients.

Conclusion: Appropriate clinical evaluation and individualized treatment planning are essential for successful managements. Both open and closed reduction methods are effective when properly indicated.