

Treatment of Condylar Fracture

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Introduction

Maxillary condyle fractures account for about 26-40% of all mandibular fractures. These fractures are associated with other injuries that have their own pathology, where we can find injuries in the facial nerve, injuries in the cervical spine, injuries in the external auditory canal, and obstruction of the internal carotid artery. Therefore, a comprehensive understanding of the anatomy and physiology of the masticatory system is necessary. to develop a treatment plan.

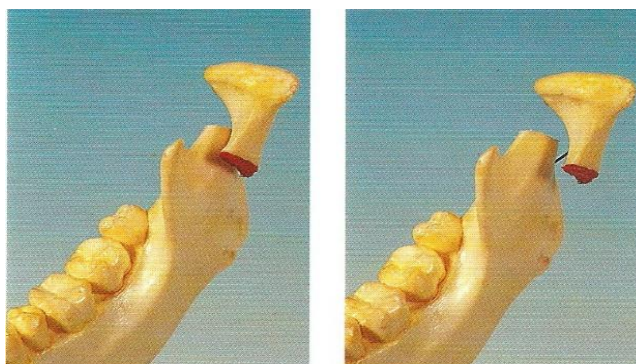


Figure 1:



Figure 2:

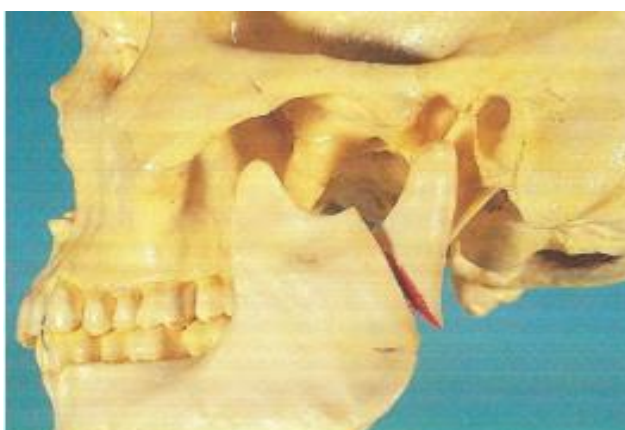


Figure 3:

Signs and Symptoms

When a patient with a condylar fracture is examined shortly after the trauma occurred, a number of classic findings can be noted, including: 1- The presence of facial trauma, especially at the body of the jaw or the symphysis. 2- Localized pain and swelling in the joint area. 3- Defined in the mouth opening. 4- Deviation of the jaw towards the affected side when opening the mouth. 5- A posterior open bite on the opposite side of the injured side. 6- Deviation of the jaw towards the affected side with the possibility of a shear bite 7- Bleeding in the external auditory canal. 8- Pain on palpation over the broken side.



Figure 4:

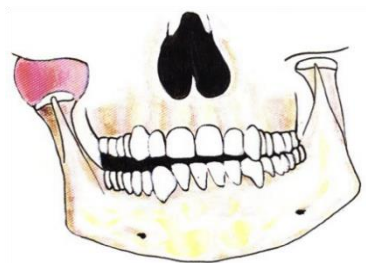


Figure 5:

Treatment of condylar fracture

The treatment of maxillary condyle can be divided into surgical and conservative (non-surgical) treatments. There is a great difference between surgeons in choosing the appropriate treatment method. The difference in opinions is due to the complexities in the functional anatomy of this region in addition to the influence of the patient's age, fracture model, associated injuries, and accompanying anatomical findings. The general consensus in the medical literature is that the management of condylar fractures in most cases is preferable by non-surgical methods in order to avoid complications associated with surgery. Anyone who treats such fractures is very important to be fully aware of the normal range of movement of the mandible and the normal occlusion as well, in order to ensure the correct and functional occlusion of the patient after treatment. In patients with multiple fractures in the mandible, it is useful to make a plaster example for the study in order to facilitate the treatment plan.

Surgical Approach

Preauricular Approach:

The entrance in front of the ear is the most used entrance, and it is the main entrance, and there is a modification to this entrance. It is the preferred entrance when the fracture is in capsular or elevated, as entry from this area provides a good entrance and a clear view of the fracture site, and achieves ease in dealing with soft tissues, as well as ease in placing means of fixation. Advantages: 1. Provides wide access for intracapsular injuries, including articular disc injuries 2. Direct entry for condylar head fractures and elevated condylar neck fractures and allows the application of various fixation methods 3. The ability to establish a correct relationship between the condyle, the disc, and the articular fossa after reflexion.

Disadvantages:

1. The risk of damage to the upper branches of the facial nerve.
2. Latent surgical scar of the joint complex itself.
3. A scar on the face 4. Limited surgical access for low condylar neck fractures.

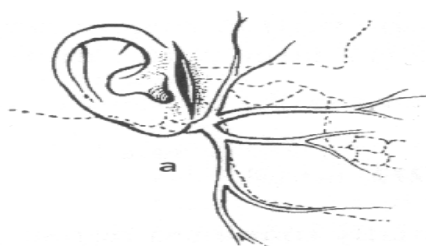


Figure 6:

Submandibular (Retromandibular) Approach

In order to reduce and stabilize many mandibular angle fractures and low subcondylar fractures, access from the lower jaw is required. It is done as follows: The entrance is behind the lower jaw. The skin is marked before injecting the anesthetic, and the incision is in the form of a curved line approximately 5 cm long and 2 cm lateral to the lowest point from the angle of the mandible after determining the middle point of the incision. (The incision starts around the bottom of the earlobe.) Some surgeons make the incision parallel to the edge of the mandible and some make it within the cervical creases for a better cosmetic result, and both incisions can be extended posteriorly to a point where the mastoid process coincides if necessary.

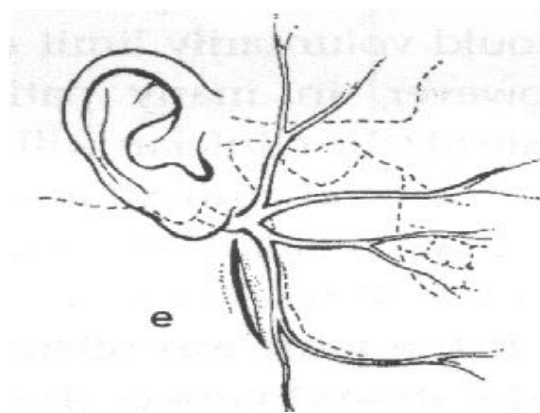


Figure 7:

Intraoral Surgical Approaches

It was first described by Steinhauser in 1964, and developed by Niederdellmann. and Lachner endorsed and used it to treat low subcondylar neck fractures and eventually extended its use to all extracapsular fractures. How to perform the surgery: The fracture area is reached through an incision inside the mouth along the anterior edge of the ascending fork, and we extend it forward along the apparent oblique line to end in the vestibular gutter at the lower second molar, just as in the incision we make when performing a bone cut for orthopedic purpose.

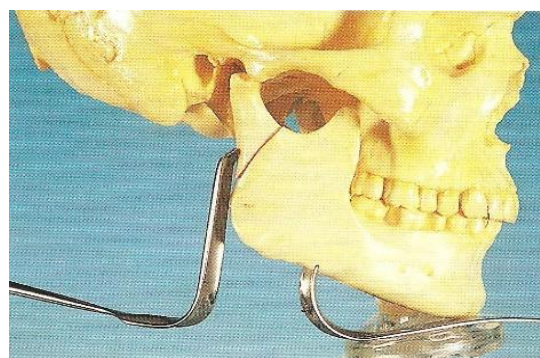


Figure 8:

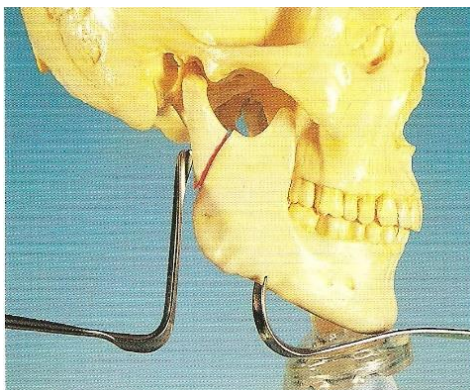


Figure 9:

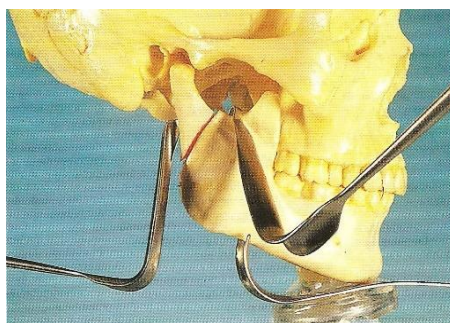


Figure 10:

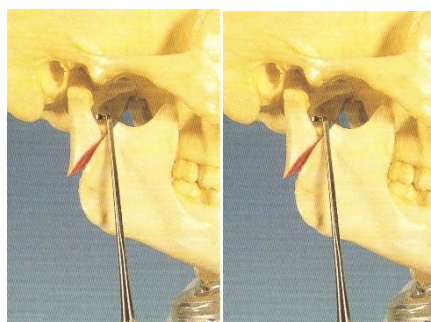


Figure 11:

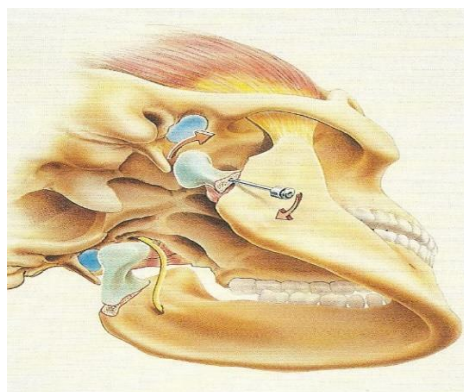


Figure 12:

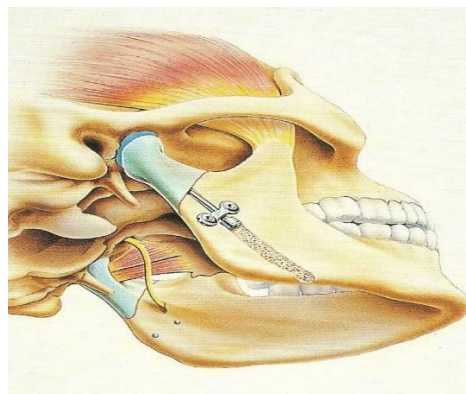


Figure 13:

Specific treatment of maxillary condyle fractures The main lines of treatment have been mentioned, but it is necessary to identify a group of patients and theories of treatment in their cases. young patients Appropriate bony union and remodeling preserve condylar function regardless of therapeutic methods in patients under twelve years of age. Conservative methods are the best treatment in such cases, regardless of the degree of malocclusion. It is very important to monitor cases suspected of adhesion or poor facial symmetry periodically. Isolated intracapsular fractures: There is general consensus that intracapsular fractures should be treated conservatively. The outcome of this treatment is often quite good with the return of function and normal shape of the maxillary condyle. In the first stage of treatment, it is necessary to adjust the dishes to their normal position, and this is usually done using braces and a rubber band. After that, the patient is provided with an occlusion guide device, and the patient is trained to move the lower jaw appropriately until reaching the limit points of jaw movement immediately after the injury. The patient must be watched very carefully. In the event that the patient is blind in such a situation, it is possible to take advantage of the dental device, if it is available, to re-establish the correct dishes in the patient.

Processing options: Despite the development of endoscopy techniques. Closed reduction is still the most common treatment for condylar fractures in children. However, open reflexion is indicated in children when there is significant unilateral or bilateral elevation shortening. In addition, fractures that cause shear bite or chin deviation also promote the use of open reduction in the treatment. There is not enough information about the effect of condylar fractures in children on joint function when the child reaches puberty. However, there is a general consensus that the amount of return of the joint to its normal function is directly related to the age of the child when the injury occurred. It has been hypothesized that adequate adaptability in young patients is responsible for this tendency. , LINDAHL HOLLENDE R discussed the effect of the patient's age on the ability of the condyle to adapt and repair after fracture, and they concluded that children 10 years of age or less will have a significantly better restoration. Crush injuries of the condylar head in young patients deserve special attention. This type of injury often leads to intra-articular hemorrhage associated with the fracture. Although the use of the closed-reaction technique in the treatment is agreed upon in such cases, these types of intracapsular fractures carry a high potential for adhesion, especially if the patient is 3 years old or younger. The anatomical shape of the temporomandibular joint in children may contribute greatly to this ability. The

maxillary condyle head tends to be moderately lateral and has a short condylar neck. There is a wide muscular articular surface, and the bone is well bloody, so any fracture in the region is associated with bleeding (or hematoma) of the joint and excessive movement of the apex, which constitutes a favorable environment for the development of adhesion. Early movement of the jaw helps to reduce the possibility of this adhesion.

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