

GUIDELINES FOR MANAGEMENT OF FRACTURES OF THE CONDYLAR NECK OF THE MANDIBLE

Introduction/Definition

Fractures of the condyle of the mandible are common. Fractures may be considered to be of the head of the condyle (diacapitular intra-capsular), the condylar neck or condylar base. These are defined as below (definition as used in the multicentre trial).

1. Diacapitular fracture:

The fracture line starts in the articular surface (it may extend outside the capsule).



Figure 1

2. Condylar neck fracture:

The fracture line starts somewhere above line A and runs in more than 50 % above the line A in the lateral view (figure 2). Line A is the perpendicular line through sigmoid notch to the ramus tangent.

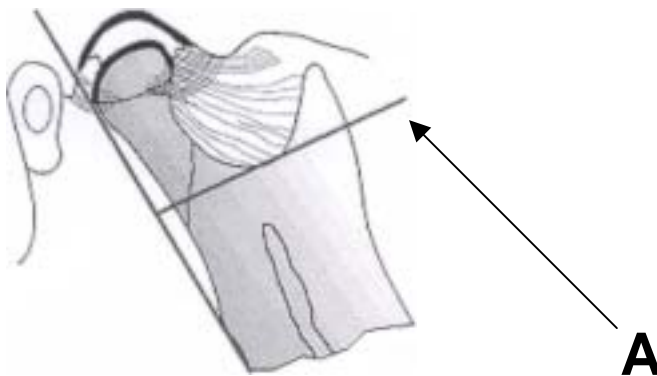


Figure 2

3. Condylar base fracture:

The fracture line runs behind the mandibular foramen and in more than 50% below the line A (figure 3).

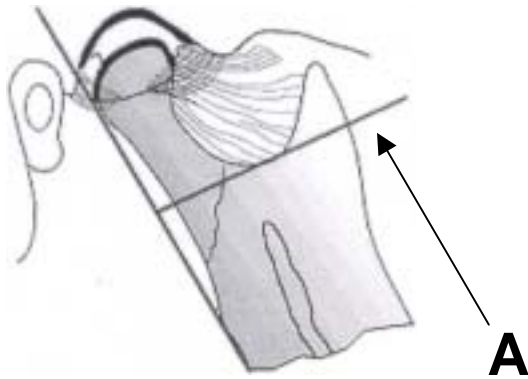


Figure 3

Throughout this document we will use the descriptive terms **displacement** to indicate movement of the fracture (= to dislocation in Germanic speaking countries) and **dislocation** to indicate that the condylar head is out of the condylar fossa (Germanic equivalent = luxation).

The term minimal displacement is taken to be that definition used in the multi centre study i.e. a displacement of less than 10 degrees and/or overlap of the bone ends of less than 2mm.

Therapeutic aims

The aim of therapy should be:

1. Restoration of the form and function (opening, lateral movements and protrusion) of the mandible.
2. Avoidance of ankylosis.
3. Avoidance of acute or chronic jaw disorders (osteoarthritis)

Clinical diagnostic criteria

1. History of excess external force/violence or suspicion of pathological fracture.

Based on inspection and palpation :

1. Pain on mandibular movement with or without soft tissue swelling.
2. Restriction of mandibular movement.
3. Deviation of mandibular movement.

4. Alteration of occlusion.
5. Laceration of the anterior wall of the external auditory meatus, or blood in the external auditory canal.
6. Sensation in the distribution of the inferior alveolar nerve
7. Function of the facial nerve

Investigations

1. X-rays in two directions.
2. Further specialised x-rays or tomograms (if appropriate)
3. CT scans (if appropriate)
4. MRI scans (if appropriate)

Therapeutic Options

Closed treatment may either be active or passive.

Passive closed treatment would involve dietary advice and appropriate analgesia.

Active closed treatment relates to the use of functional elastic traction or use of occlusal appliances, physiotherapy etc.

Active/Operative Treatment

This may include MUA (manipulation under anaesthesia) if other fractures are being fixed. There are no clear indications as to the superiority of any one technique for open reduction and internal fixation (so long as it is functionally stable) over another.

Treatment Rationales

The literature would indicate that patients can generally be placed into three groups:

- a) Children up to the age of 12-years-old.
- b) Teenagers.
- c) Patients aged over 20-years-old.

Children aged 12-years-old and younger

- a. Children who have fractures which have no or minimal altered occlusion restriction in movement or painful movement can be managed by initial passive closed treatment. If symptoms then settle they should be monitored a long term in order to diagnose the early onset of ankylosis or disorders of growth. If after an initial period symptoms have not completely settled the use of active closed treatment should be considered.
- b. If children do have obvious altered occlusion, restriction or deviation of mandibular movement, or severe pain, active closed treatment should be undertaken with the use of analgesia and inter maxillary traction or occlusal treatment. If symptoms subsequently settle, again long term monitoring should be carried out. If symptoms do not settle the diagnosis should be reconsidered and surgical intervention may have to be considered.
- c. Children should be followed up until growth is complete.

Teenagers

- a. Fracture management initially depends on the degree of displacement.

If the fractures are undisplaced or minimally displaced and there is no altered occlusion or restricted/deviation of mandibular movement or pain on movement or these symptoms are minimal simple closed treatment maybe carried out initially. If the symptoms do not settle then active closed treatment should be considered. Again if symptoms do not settle diagnosis should be reconsidered as should the possibility of open reduction and internal fixation.
- b. If there is an undisplaced or minimally displaced fracture with altered occlusion restriction or deviation of mandibular movement, or painful movement, active closed treatment with inter maxillary traction should be carried out. Again if symptoms do not settle the diagnosis should be reconsidered and open reduction and internal fixation considered.
- c. If the fracture does appear to be more than minimally displaced and the patient does not have an altered occlusion conservative management with intermaxillary traction may be considered, but if symptoms do not settle open reduction and internal fixation should be considered.

- d. If the fracture is more than minimally displaced with altered occlusion or there is dislocation then the consideration of open reduction and internal fixation should be considered.

Teenagers undergoing open reduction and internal fixation should have long term follow-up until growth is complete.

Patients aged over 20 years

- a. If the fracture is undisplaced or minimally displaced and there is no or minimal altered occlusion, restriction or deviation in movement, or painful movement simple closed treatment may be considered.
- b. If the fracture appears undisplaced or minimally displaced that there is alteration of occlusion or restricted/deviation of mandibular movement or painful movement then active closed treatment with intermaxillary elastics/functional appliance should be considered. If after an initial period symptoms do not settle diagnosis should be reconsidered and consideration must be given to open reduction and internal fixation.
- c. If the fracture is displaced and there is no altered occlusion closed treatment with intermaxillary traction may be considered initially, however, consideration should be given to open reduction and internal fixation.
- d. If the fracture is displaced with altered occlusion or dislocated (irrespective of occlusion), open reduction and internal fixation should be considered.