

Malleolar fractures of the ankle

Fractures and fracture dislocation of the ankle are common.

Clinical features

- Intense pain, inability to stand on one leg •
- Ankle is swollen and deformity may be obvious •
- Tenderness and bruising •

X-ray

AP, lateral and mortise view are needed •

treatment

- If the injury is not dealt within a few hours, definitive treatment may have to be deferred for several days till swelling can subside
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Clues to invisible ligament injury

- Widening of the tibiofibular space, asymmetry of the talotibial space, widening of the medial joint space
- Good reduction need four objectives must be met
- 1.the fibula must be restored to its full length

Most are low energy fractures of one or both malleoli , usually caused by a twisting mechanism. The most obvious injury is a fracture of one or both malleoli ; often though , the invisible part of the injury –rupture of one or more ligaments. •

Mechanism

The patient stumble and fall. Usually the foot is anchored to the ground while the body lunges forward. The ankle is twisted and talus tilts and or rotates in the mortise , causing a low energy fracture of one or both malleoli, with or without injuries of the ligaments. The precise fracture pattern is determined by

- 1. the position of foot
- 2. the direction of force at the moment of injury.

Classification

A simpler classification is that of Danis and Weber, which focus es on the fibular fracture •

Type A is a transverse fracture of the fibula below tibiofibular syndesmosis, perhaps associated with oblique or vertical fracture of the medial malleolus, this is adduction or adduction and internal rotation injury •

Type B is an oblique fracture of the fibula in the sagital plane at the level of the syndesmosis; often there is avulsion injury of the medial side, this is an external rotation •

- Type B fracture may be associated with a tear of the anterior tibiofibular ligament.
- Type C is a more severe injury, above the level of the syndesmosis, which means that the tibiofibular ligament and part of the interosseous membrane must have been torn, this is abduction or adduction and external rotation injury.

Clinical features

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X-ray

AP ,lateral and mortise view is needed •

treatment

If the injury is not dealt with a few hours, •
definitive treatment may have to be deferred
for several days till swelling subside.

Clues to invisible ligament injury include – •
widening of tibiofibular space, asymmetry of
the talotibial space, widening of the medial
joint space.

Type A undisplaced fracture is stable and firm •
bandage or brace is applied mainly for
comfort until the fracture heals.

Displaces type A fracture , the medial •
malleolar fracture is vertical and remain
unstable after closed reduction; internal
fixation is done and fibular fracture must also
reduced by closed method if failed , internal
fixation must be done

Undisplaced type B fracture can be treated with a •
below –knee cast with ankle in the neutral
position.X ray is taken at 2 weeks to confirm that
fracture remain undisplaced.The cast can usually
be discarded after 6-8 weeks.

Displaced type B fracture ; if there is spiral •
fracture of the fibula and an oblique fracture of
the medial malleolus, closed reduction by
traction and then internal rotationof the foot if
failed internal fixation is needed

Type C fracture displaced or not need open •
reduction and internal fixation.

complications

- Early : vascular injury , wound breakdown and infection
- Late: incomplete reduction , non-union, joint stiffness, algodystrophy and osteoarthritis.