Diastasis of the Ankle

Diagnosis and fixation
Diastasis

- Medial Clear space < 4mm
- Talar tilt
- Shortening of fibula
- Shenton’s line disrupted
Spurious Lateral shift
Diastasis

Yablon: JBJS(A) 59(2):169-173 1977
Talus follows the lateral malleolus

1mm talar shift = 42% joint contact area

Significant contact loss with post malleolar #
. 33%
Fixation: When?

Obvious diastasis needs to be fixed

Fractures 3.5-4.5cm from joint
No: Boden: JBJS(A) 71
Chisel: JBJS (B) 77

Accurate stable fixation of fibula should mean no further stabilisation of the syndesmosis required “Safe Zone”
Fixation: When?

Fractures 3.5-4.5cm from the joint

YES:

McConnell, Tournetta: JBJS(A):86 2171-2178 2004
Egol: JBJS(A): 86 2393-98 2004

These injuries are not stable and assessment of the medial deltoid ligament is unreliable

No “Safe Zone”
Fixation:

Accurate reduction and fixation of fibula

Fix the Tillaux fragment if present

Direct repair of the ligament
Fixation:

Stress test fibula:
- Direct pull on fibula
- External rotation force on fibula
- > 2mm widening of the fibula: FIX

If mortice not reduce think Deltoid ligament
Fixation

Screws:
- Parallel to the joint
- Close to the plafond as possible
- Direction is posterior to anterior
- “Much more than you think”
- No compression
Fixation

Foot position

? Neutral

Tornetta JBJS(A) 83: 489-92 2001

Position not relevant
Fixation

Screws:
- Small or Large fragment / Big screws stiffer
- 3 or 4 cortices
- 1 or 2

Look at the patient and bone quality

Technique is not as important as recognising that normal Ankle biomechanics will result in loosening/breakage
Fixation

Removal of Screws:
“So what if it breaks”
de Souza no problems with broken screws

Sanders: removes 4-6 months wt bearing before
Fixation

Bioabsorbables:
  Sinus formation

Tightrope™
The construct is secured with three half-knots. The suture ends are cut about 1 cm long to allow the knot and suture to lay down, reducing knot prominence.

Repair is complete using one Tightrope.

A second Tightrope should be used to treat Maisonneuve injuries, or if further syndesmosis stability is required. The second Tightrope should be placed 1 cm above the first, with slight axial divergence to increase rotational stability. (see illustration B and x-ray insets)

Postoperative Management
Following wound closure, immobilize the ankle in the neutral position in a below-knee cast, non-weight bearing for the first two weeks. Depending on fracture fixation stability and satisfactory wound healing, partial weight-bearing (50% body weight) may then be permitted in cast or walker boot, until six weeks postoperatively. Full weight-bearing cast can be allowed out of cast at six weeks.

Implant Removal
Routine removal of the Tightrope is not required. If, for any reason it needs removal, small incisions over both fracture and cutting the suture makes removal of the buttons and suture easy.
Conclusions

• Recognise the possibility of syndesmosis injury
• Fix it adequately
• Screen ankle and stress test the joint on the table
• If post op film not adequate go back
• Remember the Deltoid ligament