The Ponseti technique

3. Tenotomy & final POP cast
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The Ponseti Method - timing of the tenotomy

HFCS = 3
MFCS = 2.5

Proceed with tenotomy as soon as MFCS is one or less, NOT = zero. The heel should be in valgus.

HFCS = 2.5    MFCS = 0.5

Ponseti Casting
The Ponseti Method: correction of equinus & tenotomy

- Once the heel is in valgus, assume that the calcaneus has abducted out from under the talus
- Now the equinus can be corrected by dorsiflexing the foot
- The tendo Achilles may need to be percutaneously sectioned to facilitate this correction if at least 10 degrees of dorsiflexion cannot be obtained
- Ninety percent of babies will require a tenotomy
The Ponseti Method: tenotomy & final cast

- The Columbian clubfoot score indicates when the foot is ready for a tenotomy
  - MFCS is one or less & HFCS more than one
  - LHT = 0
  - Heel in valgus
Correction of Equinus & Tenotomy

- Complete percutaneous Achilles tenotomy
  - Important step
  - Can be accomplished with ease by any medical practitioner.
  - The decision when to perform the tenotomy rests with the treating orthopaedic officer/physiotherapist
  - Medical officer to perform this minor surgical procedure.
  - The mother should stay with the baby and breast-feed it during the procedure.
  - Performed in clinic
  - Small amount of local anaesthetic, some antiseptic, a #11 or #15 scalpel blade, a small syringe with small gauge needle (25g. or smaller - an insulin syringe is perfect), gloves and gauze.
Tenotomy – technique (1)

- An assistant is necessary, preferably the orthopaedic officer. With one hand the assistant holds the limb firmly at the knee, holding the knee straight. The other hand holds the toes and dorsiflexes the foot to stretch the Achilles tendon.
Tenotomy – technique (2)

- The medical officer looks at the tendon from the medial aspect and palpates the spot where the tendon feels most prominent, usually about 1 cm. above the calcaneus. A very small amount of lignocaine is injected into this site. No more than 0.5cc is required.
Tenotomy – technique (3)

- The scalpel blade is inserted immediately anterior to the tendon from the medial side with the orientation of the blade in the same direction as the tendon, i.e., the initial entry causes a small longitudinal incision. The blade is then rotated posteriorly and the tendon cut completely. Care must be taken to be gentle so as to not accidentally make a large skin incision.

- **Note:** This is a complete section of the tendon, not a tendon lengthening. In infants the tendon rapidly heals.
Tenotomy – technique (4)

- Due to the dorsiflexion stress the assistant is continuing to apply, the tendon usually gives an obvious clicking or snapping sensation as it is cut and the foot immediately dorsiflexes. A small amount of bleeding is normal.
Tenotomy – final POP cast

- A piece of clean gauze is placed over the incision and the orthopaedic officer applies a new above knee plaster. This is usually the last plaster required in the treatment program and will stay on for 3 weeks. The baby and mother may go home immediately and no analgesic is necessary.
The Ponseti Method: tenotomy & final cast

- The last cast (above knee) is applied with the foot in 70 degree external rotator and 10 degree dorsiflexion.
- The foot after removal of the last cast 3 weeks later shows correction of cavus, adductus, varus and equinus.
Tenotomy - notes

- **Indications**: HFCS > 1, MFCS < 1
- **Need not be done in theatre**
- **Needs no suture**
- **General reluctance** of staff to perform
- **Up to 90% of pts may require**