Pronation external rotation stress test and isolated reconstruction for the calcaneofibular ligament

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My disclosure is in the Final AOFAS Program Book. I have no potential conflicts with this presentation.
Backgrounds: Athletes sometimes complain of their ankle "giving way", even when stress XP examinations do not demonstrate ankle joint instability.

Apprehension (+)

Stress XP (-)

(Talar tilt / Ant. Drawer)

? Functional Instability?
Backgrounds: When the ATFL is sufficiently stable, detecting calcaneofibular ligament insufficiency is difficult.

- CFL cut Only
- Varus stress test negative
- CF cut + ATF
- Varus stress test significant
Backgrounds: CFL tension was measured using a force probe during the weight was loaded circumferentially.

Round disk: 45 cm in diameter, 2.3 kg, Arm: 53 cm, 1.2 Kg
Loading weight: 1 Kg, Rotation every 10°.
Backgrounds: Maximum CFL tensions were observed at postero-lateral loading point and foot was in the pronated, external rotated, and plantar flexion.

Ozeki, S. et al. Foot and Ankle Int. 27:965-969, 2006
Manual test for CFL insufficiency: We devised a pronation Pronation - External Rotation - Stress Test (PERST).

By placing an index finger tip on the insertion site of the CFL, the examiner can use his or her hand to pronate the patient’s foot and then slowly rotate the foot externally. This causes a sliding motion in the subtalar joint. Thus, the examiner can detect varying degrees of CFL tension and reproduce the subtalar joint pain.
Materials and Methods

• 2004 to 2009
  PERST + : 21 feet in 20 patients
  Arthroscopy : subtalar joint and CFL
  Isolated CFL reconstruction : 5 feet
  The Brostrom : 16 feet

• Age at surgery : 27.1 years old
• follow up period : 2.1 years.
Procedure: Isolated CFL Reconstruction using gracilis tendon substitute

Doubled gracilis tendon

A drill hole in 5 mm diameter was made at the insertion site of lateral wall of the calcaneus, and a bone tunnel of the same diameter was made just distal from the ATF ligament origin to the proximal prominence of the lateral malleolus. Care was taken not to damage the origin of the ATF ligament.
Results: Complaint of "giving way" was resolved in all patients.
Conclusion

- PERST in plantarflexion was useful for detecting CFL insufficiency, and CFL reconstruction effectively improved subtalar joint function.

Reference