Subtalar Joint damage associated with calcaneal lengthening osteotomy for adult flatfoot

E TOULLEC, F BONNEL, H BOUIN, JA COLOMBIER and AFCP (FRANCE)
Calcaneal lengthening osteotomy

A blind procedure
Anatomic variations of subtalar joints

Bunning and Barnett classification

A1: 2 anterior separated joints

A2: 2 anterior just separated joints

B1: 1 anterior joint with narrowing part

B2: only 1 large anterior joint

B3: no anterolateral facet
What happen if the osteotomy is 15mm proximal to the Calcaneocuboid joint parallel to the joint like described by Mosca?

A1: 2 anterior separated joints

A2: 2 anterior just separated joints

B1: 1 anterior joint with narrowing part

B2: only 1 large anterior joint

B3: no anterolateral facet

Joint damage
How to know the anatomic shape before flatfoot surgery?

3D CT scan of the isolated calcaneus

Osirix software
Results: 12 feet $\rightarrow$ 3 cases of subtalar damage

All in Bunning B2
Factors of joint damage:

- Bunning & Barnett B2
- Osteotomy < 10mm or > 15mm to CC joint
- Bad direction of the osteotomy
Conclusion (1)

Plannification on a dorsal view of the calcaneus with a 3D CT scan before Evans’ calcaneal lengthening osteotomy.
Conclusion (2)

Two non evaluated options in Bunning B2

a- classical cut but crossing the joint
  => arthritis evolution?

b- osteotomy in the sinus tarsi
  between posterior and anteromedial facet
  => same efficacy? (Hintermann)