Posterior talar shifting in mobile-bearing and fix-bearing total ankle replacement

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DISCLOSURE

Our disclosure is in the Final AOFAS Mobile App.

We have no potential conflicts with this presentation.
“In mobile bearing total ankle replacement there is a significant shift in the position of the talar component within the first 6 months postoperatively”
• Line parallel to the ground: from talar posterior end to most anterior talar point on the line

• Tibial Axis: line between middle points of tibial shaft measured 5 and 10 cm proximal to articular line

• TT ratio: ratio between the posterior talar portion (AC) and the full talar length (AB), in percentage
95 Total ankle replacements

- Between May 2011 and December 2014
- Mostly post-traumatic osteoarthritis
- Clinical evaluation at 6 and 12 months post-op
- Radiographic evaluation at 2, 6 and 12 months post-op
RESULTS

MOBILE BEARING

Statistically different in T1 (2m) and T2 (6m) (34.4% → 37.0%, p<0.0001)

Statistically improved from T0 (pre-op) to T3 (12m) (32.7 → 72.7 p<0.0001)

FIXED BEARING

Not statistically different in T1 (2m), T2(6m) and T3(12m) (35.7±6.7%, p=1.0)

Statistically improved in T3 (34.6 → 85.0 p<0.0001)
DISCUSSION

• TT-ratio change in mobile-bearing total ankle replacement is related to the mobile interface between the tibial component and the insert.

• This movement ends 6 months after surgery because of the restored strength and function of the posterior muscles.

• The same movement is not found in fixed-bearing total ankle replacements with lateral approach.
CONCLUSIONS

• In **fixed-bearing design** with lateral approach, the new ankle starts working with a correct **centre of rotation**

• A malpositioning could lead to periarticular stresses for the lack of the **compense system** of mobile-bearing design