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REVIEW

Total ankle arthroplasty versus ankle fusion

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Despite the increasing numbers of ankle arthroplasties, there are limited studies on their survival and comparisons between different implants.[1]

Hip and knee arthroplasties are very successful surgical procedures and continue to evolve as we attempt new techniques and improve outcomes of the patients.[2,3]

Total ankle arthroplasty (TAA) is a surgical option for patients with arthritis of the ankle. This operation can relieve pain and maintain motion in the arthritic ankle joint and is an alternative to ankle fusion (AF) which can relieve pain but eliminates motion in the joint. Although it does not have the same long-term track record of hip or knee arthroplasties, shorter-term studies on ankle replacement look very promising.[4]

A link between frontal, axial leg alignment, and ankle joint line orientation (AJLO) can be demonstrated, indicating that a valgus leg alignment and relative femoral retrotorsion are associated with an increase of valgus AJLO in healthy subjects while placing their feet in a neutral position. Alteration of the frontal, or rotational profile after realignment surgery or by implant positioning may influence the AJLO, when the foot progression angle is kept constant.[5]

Existing literature on the superiority of patient-specific instrumentation (PSI) in TAA over standard referencing (SR) is limited. The PSI method did not show an advantage over SR in regard to positioning of the components or the duration of the surgery. The current study suggests that no initial advantage of PSI over SR is to be expected in standard TAA.[6]

The amount of correction of the subtalar joint differed depending on the ligament dissection of the subtalar joint and shape of the talar component.[7]

A meta-analysis showed no statistically significant difference between TAA and AF in clinical outcome, patient satisfaction, complications, and survival. This revealed that TAA and AF could appear to have similar results in these aspects.[8]

In another systematic review and meta-analysis, 37 comparative studies were included.[9] The TAA had advantages over AF in the short term due to better performance in terms of patient-reported outcome measures (PROMs), complications, and reoperation rates, but its complications become a disadvantage in the medium term. In the long term, AF seems to be favored due to lower complications and revision rates, although there is no difference in clinical scores.

In conclusion, TAA and AF tend to have better performance in some aspects. However, it is difficult to claim which is superior. Based on the current findings, there is no statistically significant difference between TAA and AF.

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