

11:00 am – 11:12 am

Outcomes of Fusions vs. Replacements

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In this talk, rather than review the literature and give levels of evidence, I will try and summarize where our knowledge is based on literature review, and the information available from the COFAS (Canadian Orthopaedic Foot and Ankle Society) prospective database to date.

There are three groups to consider – arthroscopic ankle fusions, open ankle fusions, and total ankle arthroplasty.

Ankle joint replacement outcomes are prosthesis specific and I will summarize the strengths and challenges for the joint replacements we have experience with.

TAA = total ankle arthroplasty.

OAA = Open ankle arthrodesis.

AAA = Arthroscopic ankle arthrodesis.

Open Ankle Arthrodesis

1. Initial cost – Higher than arthroscopic and less than TAA.
2. Equipment cost - lowest (no scope, no shavers)
3. Pain postop – higher than arthroscopic fusions.
4. Wound complications – higher than arthroscopic fusions. Lower than TAA.
5. Recovery time – Longer than arthroscopic and ankle replacement.
6. Return to clinic rate – higher than arthroscopic – similar to TAA
7. Outcome – lowest satisfaction, poorest outcome on function and pain scales, least likely of the three surgeries to achieve expectations.
8. Reoperation rate – lower than TAA, similar to arthroscopic fusion.

Arthroscopic Ankle Arthrodesis

1. Initial cost – higher than open, lower than TAA.
2. Equipment cost – intermediate
3. Pain postop – lowest
4. Hospital stay – shortest
5. Wound complication rate – lowest
6. Swelling postop – least
7. Repeat clinic visit rate – lowest

8. Outcome (Pain and function) equivalent to TAA and much better than open (at 2 and 4 years).
9. Expectations met – more than open – similar to TAA
10. Reoperation rate- similar to open – less than TAA
11. Satisfaction similar to TAA
12. **Total Ankle Arthroplasty**
 1. In hospital cost: Highest
 2. Equipment cost: Highest
 3. Pain postop – intermediate
 4. Swelling postop - moderate
 5. Repeat clinic visit rate – highest
 6. Reoperation rate – higher than arthrodesis
 7. Resource utilization rate after primary surgery – highest (repeat surgery, hours of additional surgery time, and hospital bed utilization)
 8. Most likely to be satisfied
 9. Most likely to meet expectations
 10. Long term pain and function equivalent or best result depending on how it is measured.
 11. Outcomes of ankle replacement have improved considerably over the last 15 years and the inception of the COFAS database
 12. Dependent on joint replacement. For the COFAS database in order of success and survivorship
 - a. STAR and Hintegra perform best
 - b. Agility and Mobility perform worst
 - c. Minimal data is available for current designs used - Inbone, Infinity and Zimmer ankle

Demographics

Different for treatment

Ankle arthrodesis– younger – more male – less inflammatory arthritis – less extensive arthritis – more patients with diabetes – more smokers

Ankle replacement – older – more female – more inflammatory arthritis – more extensive hindfoot arthritis – less diabetes – less smokers

Treatment Pearl

Some patients are only suited to replacement, others only suited to fusion, many could have both. As the treating physician you need to engage the patient in the discussion and ensure that they are making the final choice based on your reasonable expectations of outcome.

Patient education of outcomes

Education is critical to outcome. Patients need to be informed as to their choices. They need to know what to do to ensure a good result.

They need to know what to expect from each operation to decide if the surgery is for them, and which operation will suit them best.

The future

Better ankle designs

Better definition of patient groups

Better outcomes

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