Total Ankle Replacement at Guy’s and St Thomas’ NHS Foundation Trust

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Ankle Arthritis

• Ankle arthritis is about 10 times less common than knee arthritis

• Most often secondary:
  – Trauma
  – Neurological disease
  – Rheumatoid arthritis
Normal Ankle vs Arthritic Ankle
Case 1

- 60 year old lady
- Very fit and active
- Suffered an open ankle fracture dislocation 20 years ago
- Now has daily ankle pain limiting walking distance and eroding quality of life
Case 1

• Options:
  – Pain relief, walking aid, splint
  – Keyhole surgery
  – Ankle fusion or replacement
Arthrodesis (Fusion)

- Current gold standard for end stage ankle arthritis is arthroscopic ankle arthrodesis ie keyhole surgery to fuse the ankle joint
Arthrodesis (Fusion)
Case 1

RW: “I recommend ankle fusion”

Patient: “I don’t want to limp”

“I want to keep some movement in my ankle”

“What about ankle replacement?”
Knee and Ankle Similarity
Knee and Ankle Similarity
Total Knee Replacement
Total Ankle Replacement (TAR)
Total Ankle Replacement History

• Total ankle replacement first attempted in 1970 by Lord and Marrotte

• Poor results of early designs with very few surviving more than years
First Generation TAR
Implant Evolution

• Implants have become much more like modern total knee replacement components

• Now on the 3rd generation of implants

• Uncemented fixation into the bone

• Mobile bearing polyethylene inserts
3rd Generation TAR
Why Don’t Ankles Do As Well As Knees?

• Much smaller joint

• Higher stresses go through the implant

• The talus is small, hard and can have limited blood supply

• Soft tissue cover of the ankle is very thin
Current Evidence

FOOT AND ANKLE
The outcome of total ankle replacement
A SYSTEMATIC REVIEW AND META-ANALYSIS

Intermediate-Term Results of Total Ankle Replacement and Ankle Arthrodesis
A COFAS Multicenter Study

NB: Very few good quality comparative studies using 3rd generation implants
Current Evidence

- TAR 10 year survival 89%
- AOFAS score improved from 40 to 80/100
- Average range of motion 34 degrees

- Slightly better pain relief and functional outcomes with TAR versus fusion

- More complications with TAR versus fusion
Fuse or Replace

Fusion:
• More reliable
• Safer
• Good pain relief

• Loose motion
• Other joints become arthritic
• Not all patients are happy with a fusion

Replacement:
• More movement
• Potentially better function
• Quicker recovery

• Harder to get right
• More risky for patient
• Harder to revise later
Case 1
Case 1
UK Perspective

• 626 TARs in the UK last year compared with around 100,000 knee replacements (NJR)
GSTT Perspective

• 41 primary TARs over last 5 years
  – Average age 67
  – 3 failures
  – Currently 1 case per month

• Significant tertiary revision caseload
  – 19 revision operations
Case 2
Case 2
Case 2
Case 2
The Future at GSTT

• 2 surgeons currently performing TAR and developing GSTT as a centre of excellence

• Following up our cases and presenting our experience at national conferences

• Demand increasing all the time
Summary

• Total ankle replacement is an evolving procedure, offering potentially excellent function and pain relief in appropriate patients

• Still much to be learned, with developments in technique and implants all the time

• GSTT well placed to offer this treatment for local patients and tertiary referrals