NHS
Royal National
Orthopaedic Hospital
NHS Trust

ANKLE ARTHRITIS – Are ankle replacements the answer?

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BACKGROUND

- Ankle Arthritis less prevalent than hip and knee arthritis
  - 40% Over 60 vs 5%
  - ?different cartilage properties
    - Thinner but keeps tensile strength, more resilient to load.
- 29,000 new cases per year
- Most often post traumatic
  - Fracture
  - Ligamentous.

HISTORY

Pain

Deep seated.
Dorsal ankle.
On WB and movement.
Rarely at rest or night.
Affects other joints

Stiffness

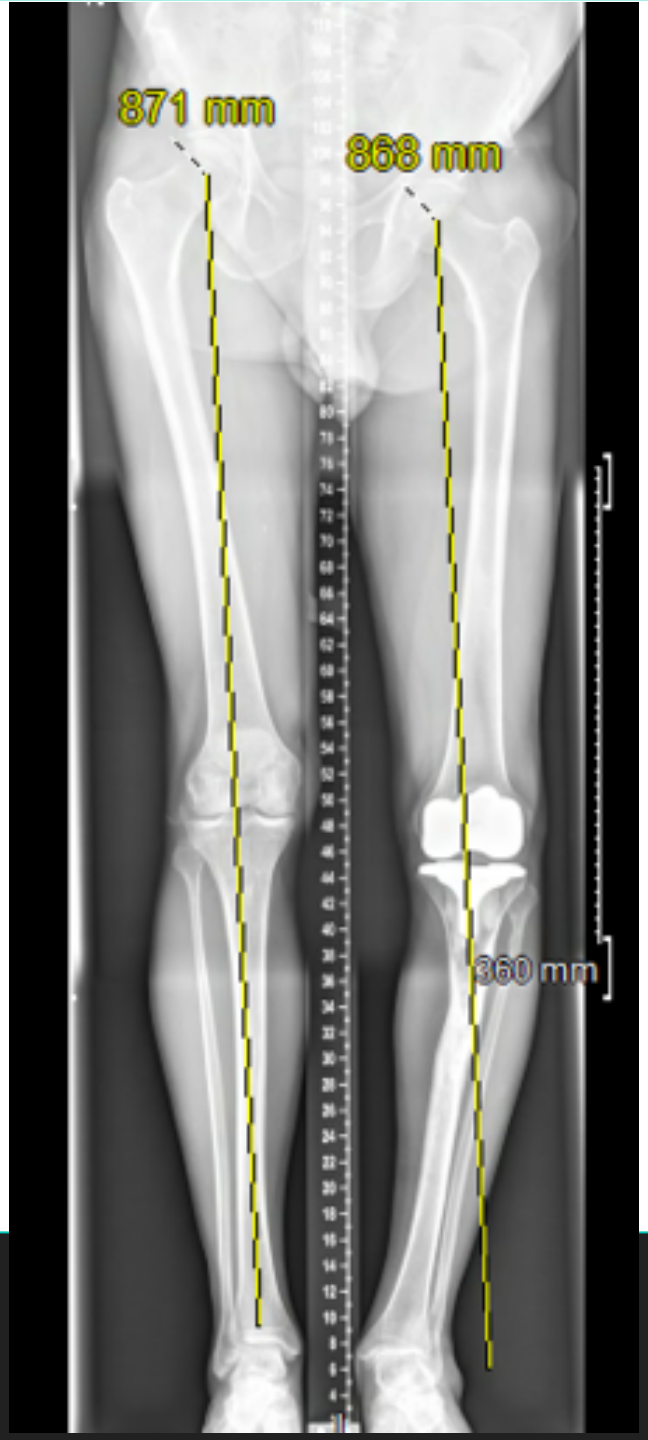
'Cracking'

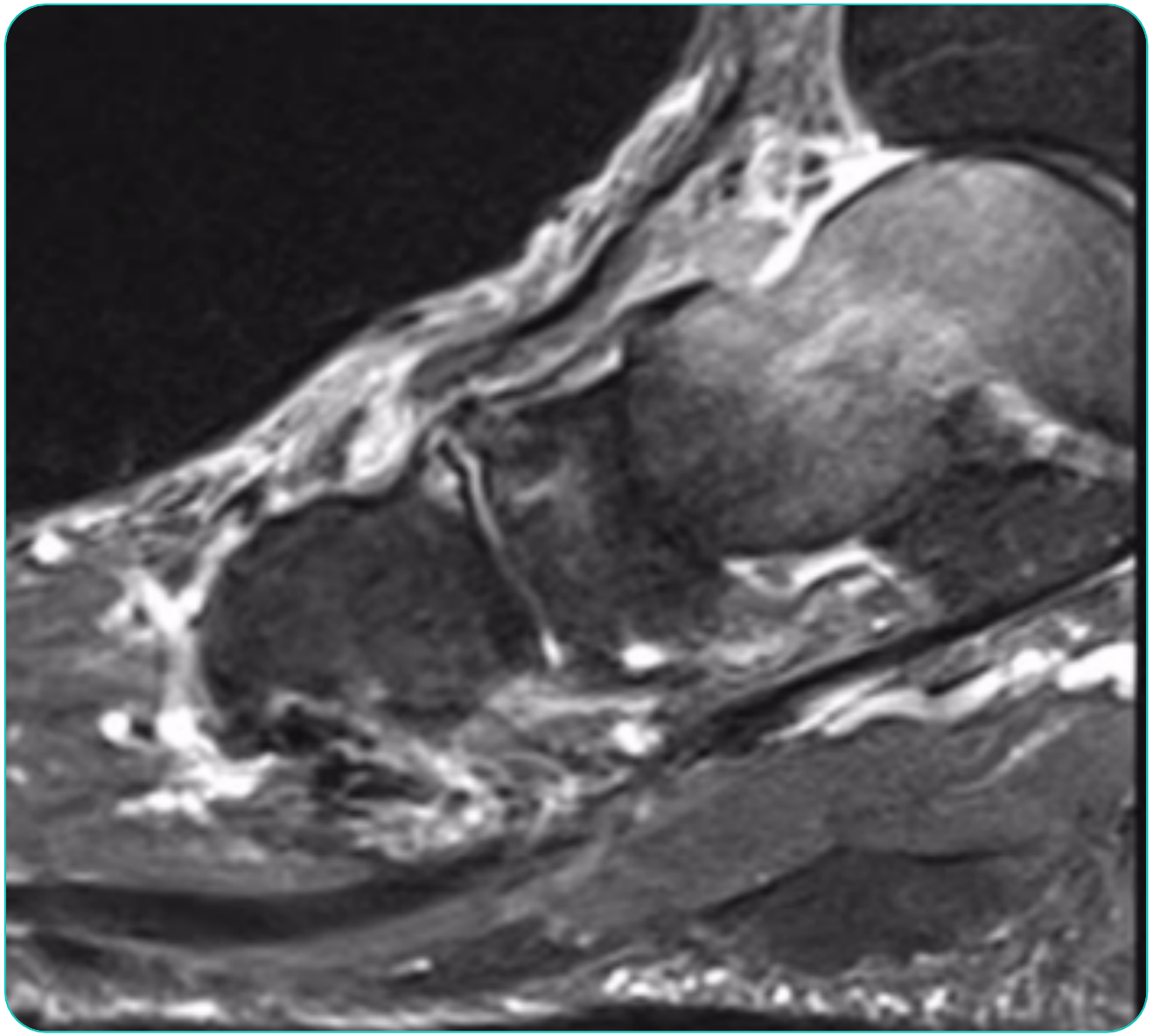
Deformity

Locking

O/E

- Look
  - Deformity, Swelling, Allignment.
- Feel
  - Osteophytes, Tenderness
- Move
  - Reduced ROM of the ankle
  - Compare to other side
  - How to demonstrate ankle movement
  - Examine Achilles
  - Examine STJ, TNJ
- Examine Ligaments
  - ?Laxity as cause
- Pulses
- N/V
  - Makes a difference!


871 mm
868 mm
360 mm



DIFFERENTIAL DIAGNOSIS

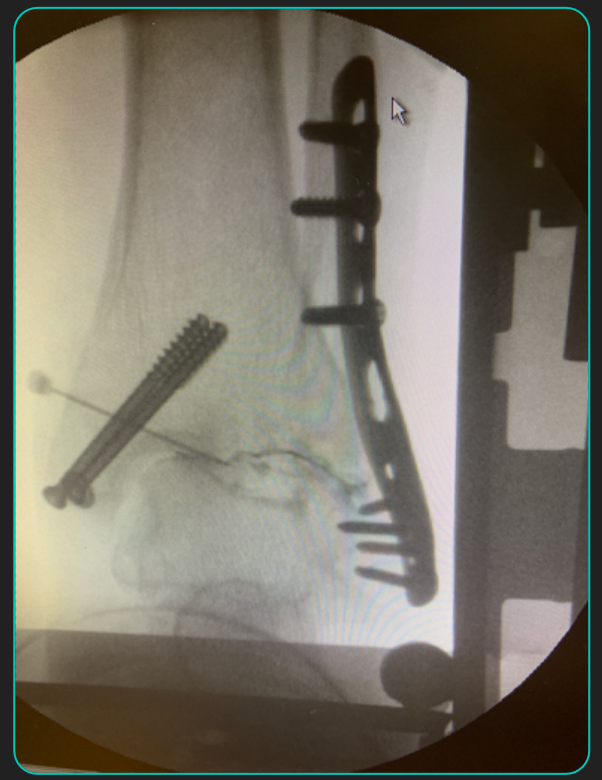
- OCD
  - Localised. Deepseated. Clicking. Locking
- Gout
- Septic Arthrits
- Trauma
  - Stress fracture
- Impingement:
  - Anterolateral, Anterior, Posterior

IX

- XR
  - Weight bearing. Ankle and Foot
  - ?long leg alignment
- PEDCT
  - Where is deformity coming from?
  - Surrounding joints
- MRI
  - Amount of OA
  - Surrounding Joints

RX – NON OP

- Activity modification
  - Less impact loading, less accelerations.
- High top **boots**
- Rocker bottom shoes
- Ankle brace
- AFO
- Injections
  - Steroid and LA
  - PRP
  - Stem Cells?



RX - OP

Indications: Refractory to Conservative.

Arthroscopy

Debridement, Microfracture, Cheilectomy

Arthrodesis

Arthroscopic or Open

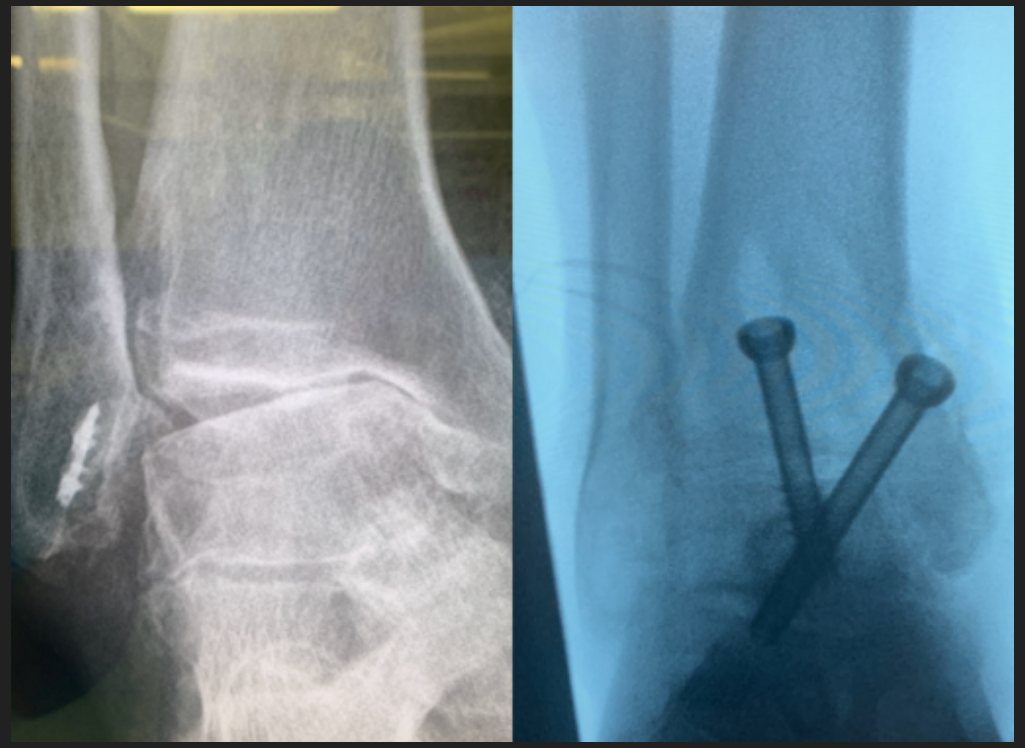
3:1 fusion to replacement

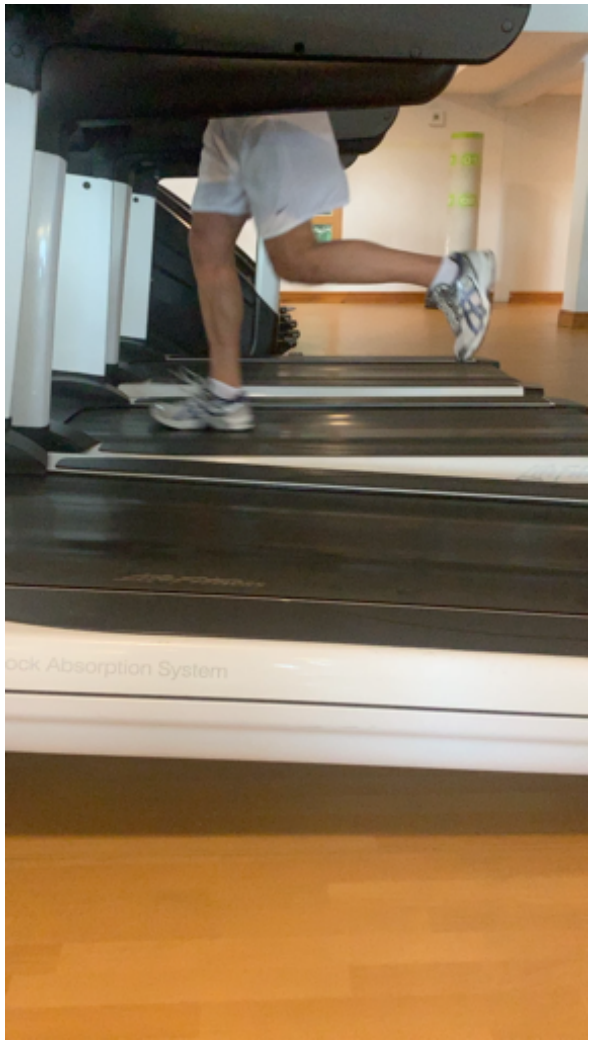
Arthroplasty

Arthrodesis – Arthroscopic or Open

- If Successful will stop ankle pain for long term
- If isolated can have near normal gait pattern (forum)

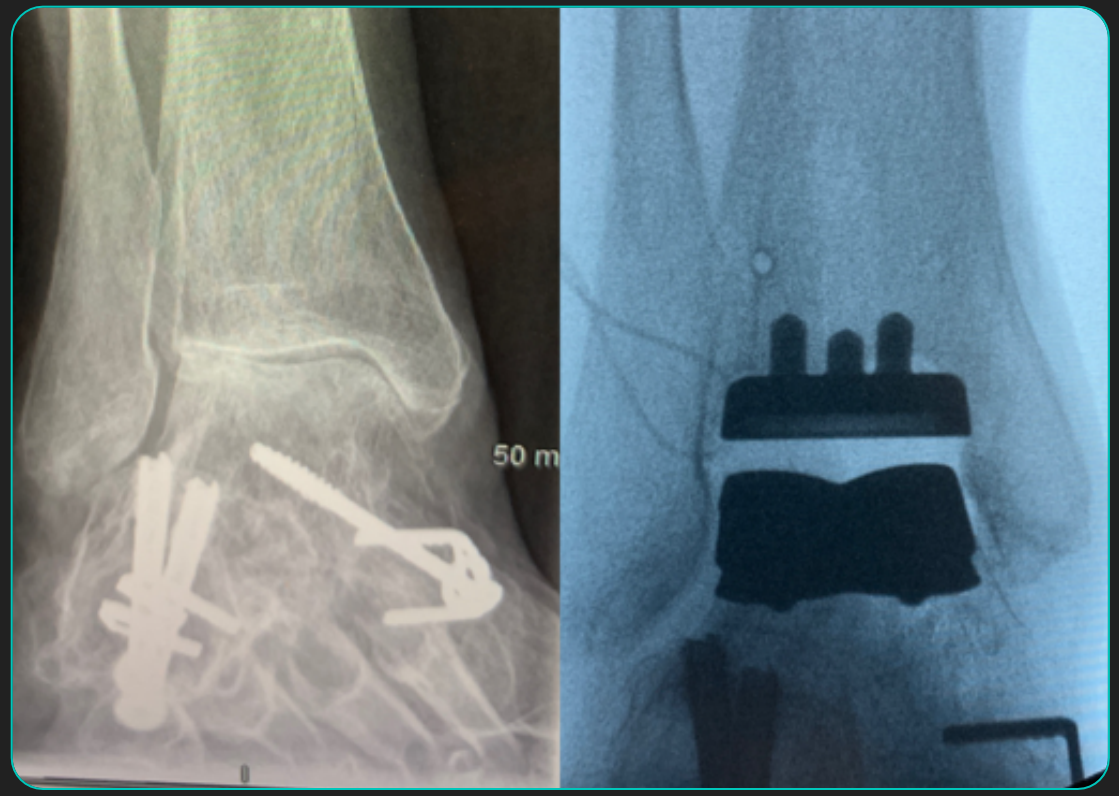
- BUT
- Puts pressure on adjacent joints that can wear out
  - STJ, TNJ, Knee, hip
  - When STJ,TNJ then altered gait
- Post op
  - 4/4/4

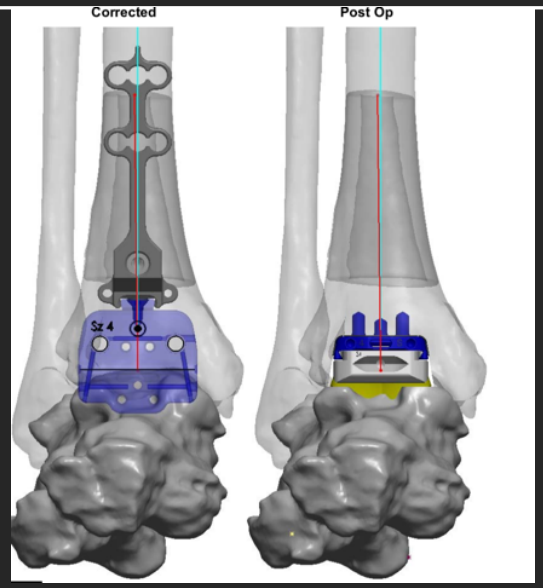




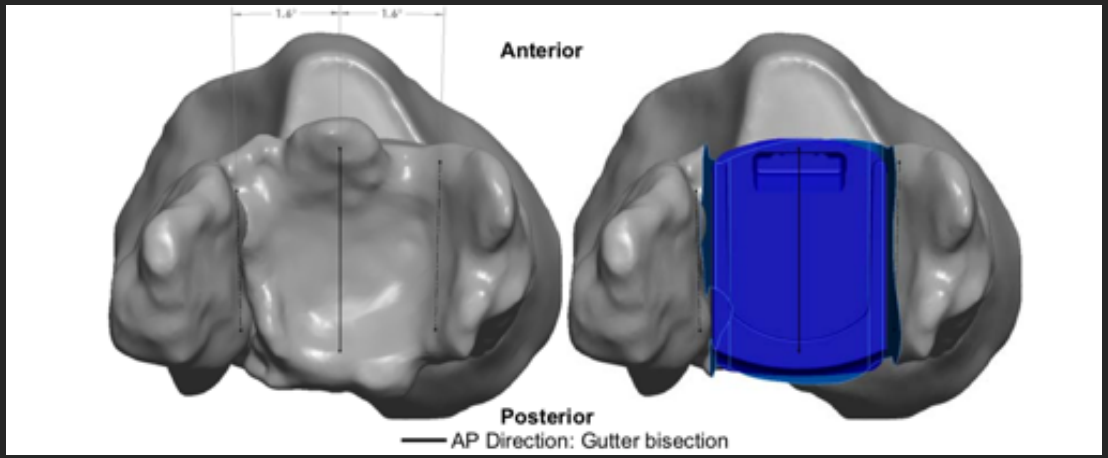
Arthroplasty

- Metal tibia, metal talus, Polyethylene insert
- Allows more physiological movement
- Theoretically protective to adjacent joints with more normal gait.
- Wear at approx. 1-2% per year.
  - 10 years 80—90%
- Post op
  - 6 weeks plaster
  - 2/52 then 4/52.




Corrected
Post Op
Sz 4


VB
50 mm
R
L


Anterior
Posterior
AP Direction: Gutter bisection


Series: 60
R
80

Contraindications

- Active Infection
- AVN/Marked Osteoporosis
- Severe deformity
- Neurological dysfuction.
- Obesity.
- Age

Number of primary replacements during each year	Year of primary								
	≤2010[1]	2011	2012	2013	2014	2015	2016	2017	2018
Operations (n)	417	523	583	557	551	618	725	770	843

Age at primary (years)	n	Time since primary			
		1 year	3 year	5 years	7 years
All cases	5,587	0.71 (0.52-0.99)	3.80 (3.25-4.43)	6.86 (6.03-7.81)	8.51 (7.46-9.71)
Male					
<65 years	1,072	1.05 (0.56-1.94)	5.23 (3.88-7.04)	8.62 (6.65-11.15)	*10.65 (8.24-13.70)*
65-74 years	1,406	0.62 (0.31-1.24)	3.40 (2.45-4.69)	6.83 (5.24-8.88)	*8.48 (6.52-11.00)*
75+ years	849	0.53 (0.20-1.40)	1.77 (0.97-3.21)	3.12 (1.87-5.16)	*3.12 (1.87-5.16)*

16th Annual Report 2019

National Joint Registry for England, Wales, Northern Ireland and the Isle of Man

Surgical data to 31 December 2018

	Primary procedures	
	No.	%
Total ankle primaries	890	
Patient physical status		
P1 - Fit and healthy	103	12%
P2 - Mild disease not incapacitating	622	70%
P3 - Incapacitating systemic disease	165	19%
P4 and P5	0	0%
Indication for surgery		
Osteoarthritis	811	91%
Rheumatoid arthritis	50	6%
Other inflammatory arthropathy	21	2%
Other	15	2%
Tibia-hindfoot alignment		
Physiological neutral	370	42%
5-15° Varus	229	26%
16 - 30° Varus	65	7%
>30° Varus	7	1%
5-15° Valgus	139	16%
16-30° Valgus	39	4%
>30° Valgus	1	<1%
Not available	40	4%
Pre-operative range of movement ankle dorsiflexion		
5-20°	355	40%
Neutral	411	46%
Fixed equinus	95	11%
Not available	29	3%
Pre-operative range of movement ankle plantarflexion		
5-15°	480	54%
16-45°	353	40%
Not available	57	6%

	Primary procedures	
	No.	%
Total ankle primaries	890	
Total ankle primaries with patient data	859	97%
Female age	328	38%
Average	66.94	
SD	11.56	
Interquartile range	60.86-74.33	
Male age	531	62%
Average	69.44	
SD	9.08	
Interquartile range	63.52-75.89	
Female age groups		
<45 years	14	4%
45-54 years	34	10%
55-64 years	71	22%
65-74 years	135	41%
75-84 years	63	19%
>85 years	11	3%
Male age groups		
45-54 years	37	7%
55-64 years	124	23%
65-74 years	210	40%
75-84 years	145	27%
>85 years	15	3%

SO SHOULD YOUR PATIENTS HAVE A FUSION OR A REPLACEMENT?

Effectiveness and Safety of Ankle Arthrodesis Versus Arthroplasty
A Prospective Multicenter Study

Effect of Total Ankle Arthroplasty and Ankle Arthrodesis for Ankle Osteoarthritis: A Comparative Study

The Bone & Joint Journal, Vol. 98-B, No. 5 | Foot and ankle

Total ankle arthroplasty *versus* ankle arthrodesis

a comparative analysis of arc of movement and functional outcomes

D. I. Pedowitz, J. M. Kane, G. M. Smith, H. L. Saffel, C. Comer, S. M. Raikin

Total ankle arthroplasty versus ankle arthrodesis—a comparison of outcomes over the last decade

International Orthopaedics
January 2017, Volume 41, Issue 1, pp 101–109 | Cite as

Total ankle arthroplasty versus ankle arthrodesis for the treatment of end-stage ankle arthritis: a meta-analysis of comparative studies

Ankle Arthrodesis Versus Total Ankle Arthroplasty

Joel Morash, MD, FRCS(C)[a,*], David M. Walton, MD[b], Mark Glazebrook, MD, FRCS(C), MSc, PhD[a]

KEYWORDS

Click to increase/decrease image size

• Ankle arthroplasty • Ankle replacement • Ankle arthrodesis • Ankle fusion

KEY POINTS

- Reoperation rates are higher in total ankle arthroplasties (TAAs) compared with ankle arthrodesis. Infection rates for primary TAAs are 1.4% to 2.4%.
- The survival rate of TAA is approximately 75% to 90% at 10 years.
- Arc of motion is maintained with TAAs compared with ankle arthrodesis. Ankle arthrodesis increases arc of motion through the talonavicular joint, which is a cause for concern for adjacent joint disease in the future.
- Several factors are strong reasons to favor ankle fusion rather than TAA; patients without protective sensation or clear neuropathy should not undergo TAA.
- TAA and ankle arthrodesis both are effective treatments of end-stage ankle arthritis but the choice must be tailored to individual patients.

My conclusion… Individualise, don't generalise

- My feelings…!
  - Age – at **present** I feel that surrounding joint arthritis is easier to deal with than a failed TAR
  - Deformity
  - Bone stock
  - Activity levels
  - Weight
  - Neurology
  - Adjacent joint disease.

Thankyou

- Mr Matthew Welck
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