Ankle Arthritis - Treatment Options

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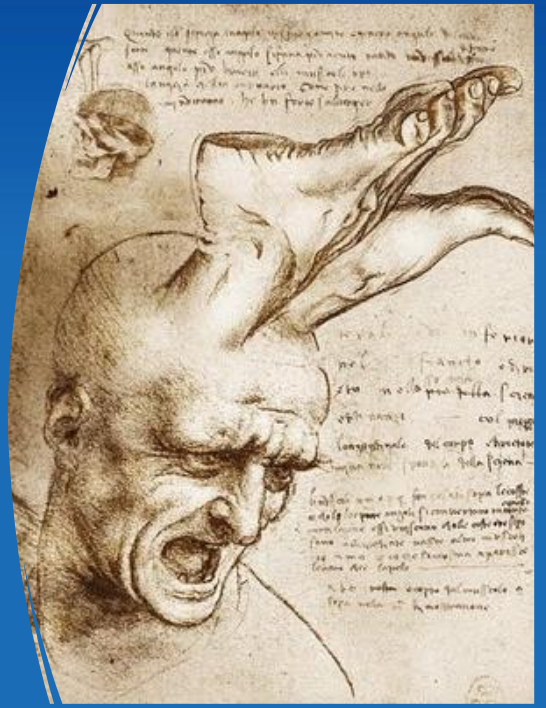

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THIS IS MODERN MEDICINE

Australopithecus afarensis – Lucy

Evidence for a bipedal gait 3-4 million years ago

Fossil footprints - the pattern of weight transfer through the foot/ankle was quite modern.

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Ankle arthritis

Tibio-talar joint - resilient

Causes :
Single trauma/ fracture
Chronic Instability/malalignment

Infection, Inflammatory,
Haemochromatoisis, AVN
Charcot arthropathy

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Ankle arthritis

Pain, stiffness, deformity and swelling, limp
Second rocker compromise
Crouching, descending stairs, inclined surfaces
Ultimately all ambulatory activity

Tx
Activity and lifestyle modification
Ankle braces, strapping, lace-up footwear, rocker designs
NSAIDs
Injections- steroids/viscosupplementation/PrP
Cheilectomy arthroscopic/open – mechanical symptoms

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Ankle arthritis surgeries

Surgeries

Osteotomy ?? Knee
Joint Preserving surgery

Total Ankle Replacement
Ankle Fusion

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Focal Osteochondral defect: pot-hole

AMIC (autologous matrix induced chondrogenesis 2008)

Debride defect, stimulate the marrow MSC
Chondro-Gide ; bilayer collagen I and III matrix
Create a Seal to contain cells

'Fibrocartilage'

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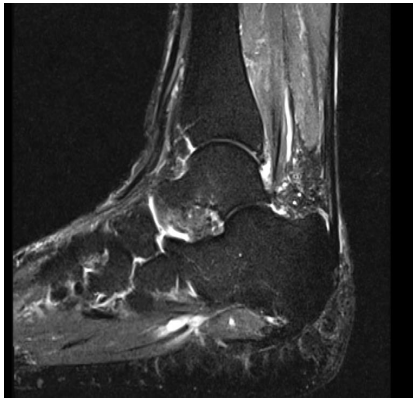
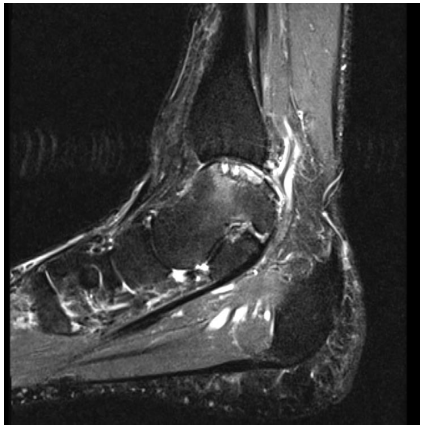
Local OC damage, 43 yrs





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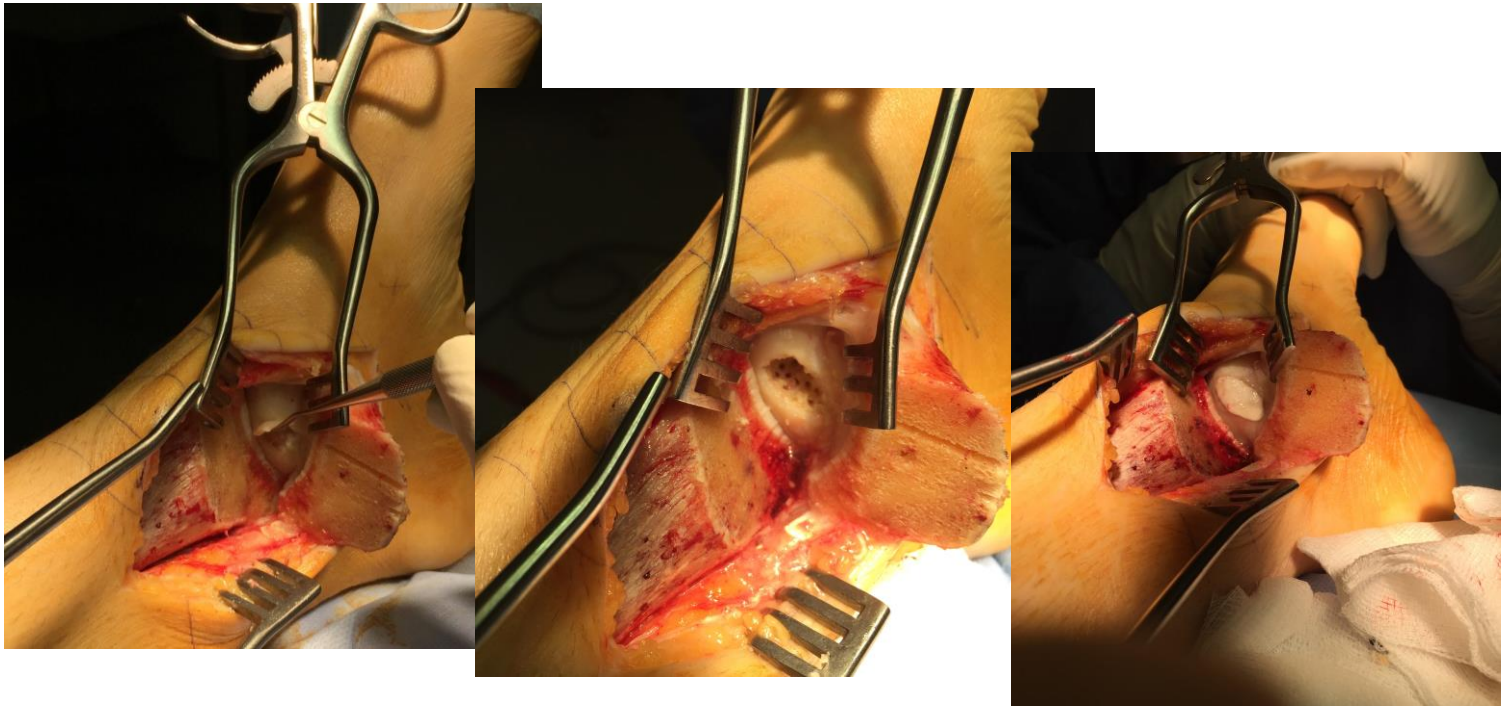
AMIC



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Access - osteotomy

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AMIC – results

Lengthy recovery – 6 mths

Promising results

Review

Autologous Matrix-Induced Chondrogenesis (AMIC) for Osteochondral Defects of the Talus: A Systematic Review

Filippo Migliorini [1,2,*], Nicola Maffulli [3,4,5], Andreas Bell [2], Frank Hildebrand [1], Christian David Weber [1] and Philipp Lichte [1]

Data from 778 patients (39% women, 61% men) were collected. The mean length of the follow-up was 37.4 ± 16.1 months. The mean age of the patients was 36.4 ± 5.1 years, and the mean BMI was 26.1 ± 1.6 kg/m^2. The mean defect size was 2.1 ± 1.9 cm^2. Following the AMIC technique, patients demonstrated an improved VAS ($p < 0.001$), AOFAS ($p < 0.001$), and FFI ($p = 0.02$) score. The MOCART score also improved from the baseline ($p = 0.03$). No difference was observed in the Tegner score ($p = 0.08$). No graft delamination and hypertrophy were reported in 353 patients. 7.8% (44 of 564) of patients required revision surgeries, and 6.2% (32 of 515) of patients were considered failures.

N = 30 +

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End stage disease

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Ankle fusion 1930s

		Stiffness
Tibiotalar		+
Tibio-talo-calcaneal		++
Pantalar		+++

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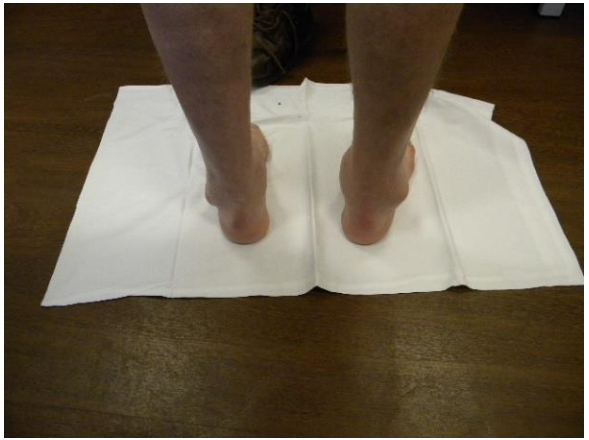
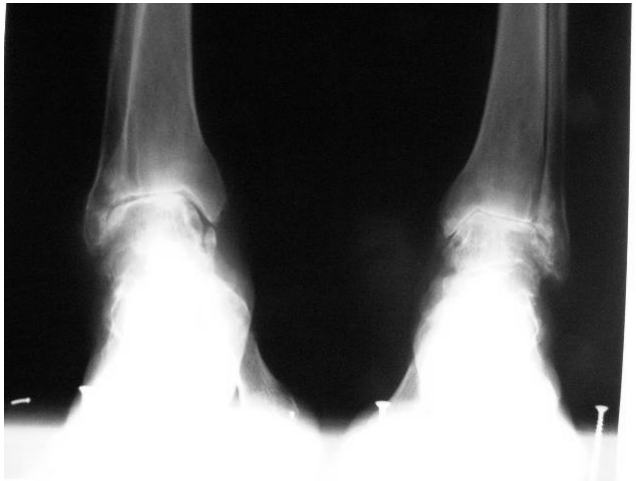
62 yrs farmer





Ankle fusion

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Fusion

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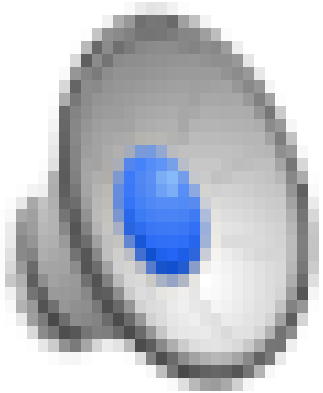
Fusion – if no pain…



Results

Pain relief – Excellent, if isolated ankle pathology

Restricts sagittal motion - reduces stride length and cadence

At average 20 years post Fusion, 67% patients ‘happy with their result’ and 92% would recommend it to someone else

20 year follow-up : radiographic distal articular disease in 100%

Coester et al 2001

Total ankle replacement 1970s

3rd Generation

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63 year old female 2014

‘Wanted an Ankle Replacement’

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TAR year 1

Salto Tolaris

2014

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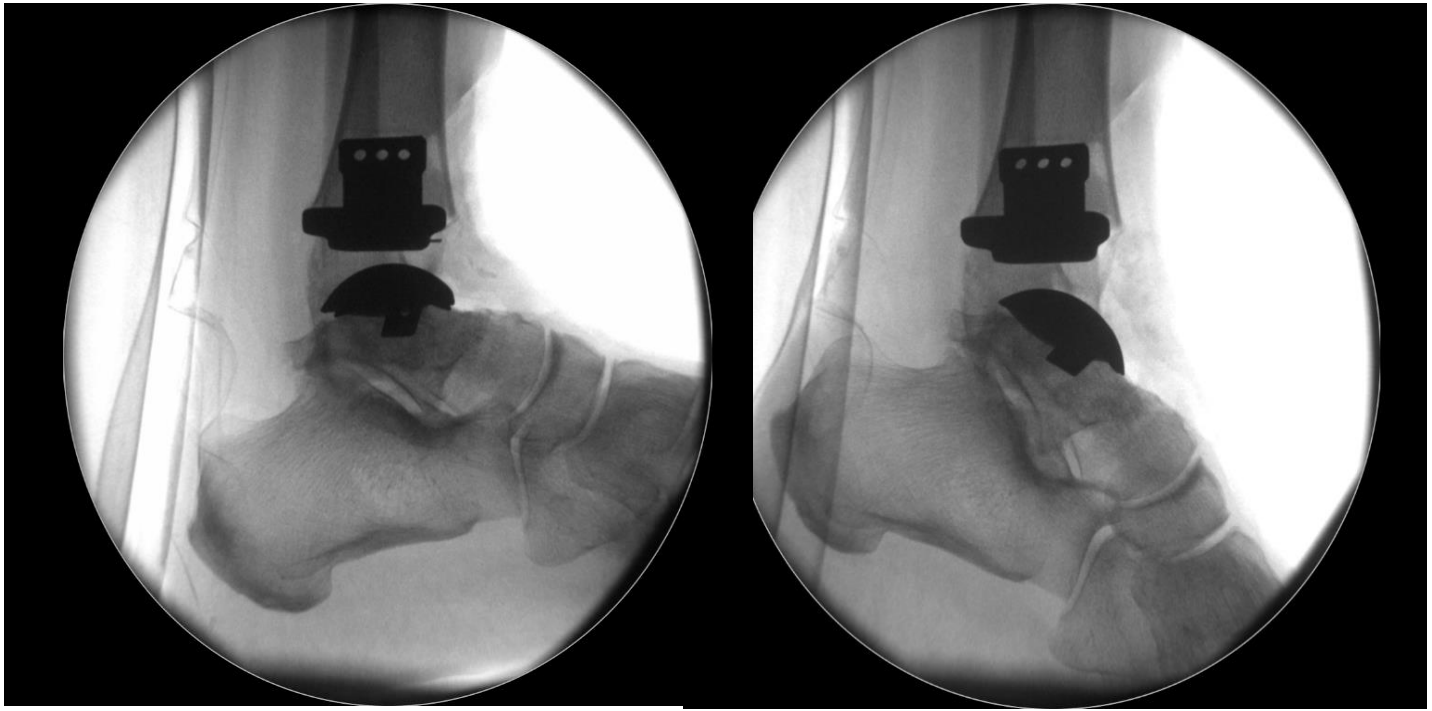

2014

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TAR year 10

Ideal patient : Lightweight, low demand, no hindfoot deformity 2024

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Fusion or Replacement?

Decision can be difficult

Overall, early and intermediate term outcomes after FUSION and TAR are comparable

TAR attempts to maintain normal biomechanics

3rd generation TARs are doing well

Every patient is different

Important to discuss individual expectations for : pain relief, postoperative function, return to activities and sport

Thank you

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