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Midfoot miscellany and lateral ligament repair

John P. Negrine F.R.A.C.S.
Latest Orthopaedic Updates
Saturday 2nd November 2013
The changing demographic

Never start your talk with a graph
Life expectancy in Australia

![Graph showing life expectancy trends for males and females in Australia from 1900 to 2005.](image)

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Adult Foot & Ankle Surgery
Changing demographic

• Modern medicine has “gifted” people 20 years
• People expect to be active, play tennis, golf and party!
Senior moments

The elderly don’t have sex? Carers in nursing homes are seeing otherwise and often butting heads with families and the law over how to deal with it. By Peter Munro.

He’s asleep now, curled to one side in bed, his lower half covered with a blanket. Lying there with the television on and the door to his nursing home room open, he is the picture of an aged man, grey hair and eyes closed in the early afternoon. He has put away his blow-up sex doll. Time was, before his dementia advanced, they would be together in his room all day with the door closed. Away, too, is the pornography he owned before leaving his home for full-time aged care. Hard though it is to conceive of this elderly man as a – from the penis-in-vagina-orgasm-fireworks experience to quiet intimacy.

“We reach a time in our life when sitting side by side and holding hands may be the ultimate in sexual intimacy.” People are sexual beings their whole lives, she says. “We call it womb-to-tomb sexuality.”

Yet about a quarter of Australians aged 18–24 believe older people don’t have sexual relationships. Even the meaning of “old age” is skewed: younger respondents reckon you’re old at 56; for older people it is 67.
People are outlasting their joints and tendons
This is a boom time for orthopaedic surgeons and physiotherapists
Tibialis anterior

- Largest muscle of the anterior compartment
- The principle dorsi-flexor
- Little literature available
- Spectrum of pathology seen
Tibialis posterior tendinosis
(like gall stones)

- Fat
- Fifty
- Female
- Diabetes
- Hypertension

Mann and Holmes
Foot Ankle Int 13:70-79, 1992
Tibialis anterior tendinosis

- Active (Golfers/walkers)
- Age 70
- Female > Male
- Not obese
- Systemically well

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My practice year

- Foot and ankle exclusively in a group of 10 orthopaedic surgeons
- 5000 patients in consultation
- 500 operations
- Six cases of tibialis anterior tendinosis
- Four cases of rupture
Patient Demographics

Tendinosis (6)
- Average age 66
- All females

Tib. Ant rupture (4)
- Average age 75
- All males
Tibialis anterior tendinosis
Examination

• Observe the swelling medially
• Patient is point tender at the insertion
• Walking on heels often aggravates the pain
• Pain in bed at night
Differential diagnosis

- First TMT OA
- Neoplasia (PVNS, synovial sarcoma)
- Rupture presents as a foot drop → c. peroneal n. palsy/L4 radiculopathy
Tibialis anterior tendinosis

Imaging

- Ultrasound: Thickened heterogeneous tendon
- MRI: Intrasubstance Signal changes/oedema/
- The elusive spur
- Assists differential diagnosis
Tibialis Anterior Rupture

- Sagittal T1
- Tendon “Missing”
- Oedema around stump
- Fluid on axial View

MRI Images courtesy J. Linklater

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Tibialis anterior tendinosis treatment

- Rest
- Aircast boot/Foot drop splint
- Anti-inflammatories
- Physiotherapy to stretch and strengthen
- No cortisone - ?? PRP/Stem Cells/Autologous tenocytes
Tibialis anterior tendinosis
Surgery

• Transfer peroneus tertius
• Debride the tendon
• Remove any TMT joint spurs
Surgery

• Weave peroneus tertius (spare tendon) into the thickened stump of tibialis anterior
• Day surgery 2 weeks non-weightbearing 2 weeks in a boot
• Seems to work!
Midfoot arthritis
Talking about primary not post-traumatic
Biomechanics

TMT sagittal joint Motion Degrees:
- 1st 1.6
- 2nd .6
- 3rd 3.5
- 4th 9.6
- 5th 10.2

Demographics

- Patients in 6th or 7th decade
- Present with a burning aching pain across the top of the midfoot
- Worse in tight shoes
- Classic history of having to loosen the laces to keep walking
Anatomical location

- Most commonly 2\textsuperscript{nd} and 3\textsuperscript{rd} joints
- Theorised that not only are they among the least mobile but they take more stress as a result of being the longest metatarsal
- Medial navicu-lo-cuneiform also common
Radiology

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Treatment non-surgical

- Anti-inflammatories
- Rocker soled shoe
- Skip lacing shoes
- Steroid injection under x-ray or ultrasound control
- Stem cells/PRP: Quelle horreur!!!
Definitive treatment

- Arthrodesis
- 6 weeks in plaster non-weightbearing / 4 weeks in a walking boot
- Good for pain relief
- Patients do not notice any loss of movement
- Fusion rate approx. 80%
Bob’s Balls
Ankle Ligaments
The commonest orthopaedic injury

- 1:10,000 population/day
- 460 people will sprain their ankles in Sydney today
Who needs surgery acutely?

• Acute ligament repair never indicated in my opinion
• Displaced osteochondral fracture mechanically blocking the joint
• Acute tendon tear or dislocation peronei
• Displaced syndesmotic injury
Natural history

- Most ankle sprains get better regardless of treatment and many never see a doctor, most ankle sprains do not cause ankle arthritis even with talar osteochondral fractures.
Who needs surgery late?

- Ligament instability failing a good physiotherapy program
- Ongoing pain from osteochondral fracture
- Scarring / failure to regain range of motion
How to diagnose ankle instability

• You must talk to the patient
You must examine the patient
Ligament instability is not an MRI diagnosis
Ligament anatomy

- Commonly anterior talo-fibular ligament
- Calcaneofibular ligament
- Less commonly the syndesmosis
Calcaneo-fibular ligament

- Anatomy highly variable
- Ligament usually stretches before it tears
- Frequently re-attaches anteriorly
Skin incision

- From tip of fibular malleolus
- 4cm anteriorly
- Extensile
- Previously described incision along the anterior edge of the fibula is **not extensile**
Capsular incision

• Open capsule parallel to anterior fibula leaving a 5mm cuff
• Take care not to injure peroneal tendons inferiorly
Capsular incision
Open peroneal sheath

- Inspect peroneal tendons
Re-attach calcaneo-fibular ligament

- I use a suture anchor
- A “screw in” anchor is easier to remove in case of revision
Calcaneo-fibular ligament
ATFL repair

- Basically “double breast” the capsule
- Contains the ligament
- I use #1 PDS sutures and oversew with #1 Vicryl

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ATFL repair
Gould modification

- Attach the inferior extensor retinaculum to the anterior fibula
- Said to reinforce the repair
- Adds to the subtalar stability
Gould modification
Post operative regime

- 10 Days in plaster non-weight bearing
- 4 weeks in an airstirrup
- Physiotherapy at 6 weeks
Rehabilitation

- At 6 weeks wobble board, peroneal strengthening
- Patients allowed to walk, cycle, swim
- Run at 3 months
- Return to non-contact sport at 3 months
- Return to contact sport 4 – 6 months

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