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Ankle injuries – what a family doctor needs to know

Alastair Younger

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Conflict of interest

- Consultant:
- Acumed, Wright /Stryker medical, Zimmer, Bioventus, Biocomposites, Precision OS.
- Royalties
  - Acumed, Wright /Stryker medical
- Institutional support:
  - Acumed, Arthrex, Wright medical, Zimmer, Bioventus, Biocomposites.
- Medical associations: AOFAS, COA. COFAS
- Reviewer: JBJS, BJJ, BMJ, FAI, CJS, CORR
- Partner at Footbridge clinic
- Shareholder at Cambie and Specialist referral clinic

Who I am…

- British Columbia Orthopaedic Association President for last 5 years
  - Now Lane Dielwart
- On faculty With UBC department of Orthopaedics
- Professor, head of Distal Extremities
- Work out of St Paul's Hospital and Footbridge clinic

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Topics covered

- Accessibility
- Affordability
- Assessment
- Pathologies
  - Acute sprains
  - Ankle, talus, midfoot fractures
  - Achilles tendon
  - Injuries in patients with neuropathy

Accessibility

- The issue – the massive volume of these patients seeking care
  - They are not cancer
  - They will not die
- But they may lose their employment and mobility
- Recovery may be longer than need be if diagnosis is delayed
- What conditions?
  - Ankle sprains, fractures, tendon tears, midfoot injuries

Accessibility

- The reality – system issues
  - There is a scarcity of fracture clinic time
  - Scarcity of family doctors
  - New EMR's can confuse
  - COVID
- Concerns
  - Patients get lost to follow up
  - Patients fail to present

Action items

- Be aware
- Support your colleagues
- Advocate
- Manage the situation as it is
- "we are here now – lets see what can be done"

Affordability

- Many patients cannot afford
  - Physiotherapy
  - Walker boots
  - Travel for follow up
  - Braces and orthotics
  - Medication – NSAID's

Action items

- Find work arounds
- Online physio tools
- Recycle walker boots
- Ask donors to help

Assessment

- Essentials of history and physical in the acute injury patient
- What investigations to get
- Follow up care

History

- Tells you a lot
- Have learnt a lot from Ski patrol and talking to FP's and EHS
- Mechanism of injury??

A mechanism of assessment

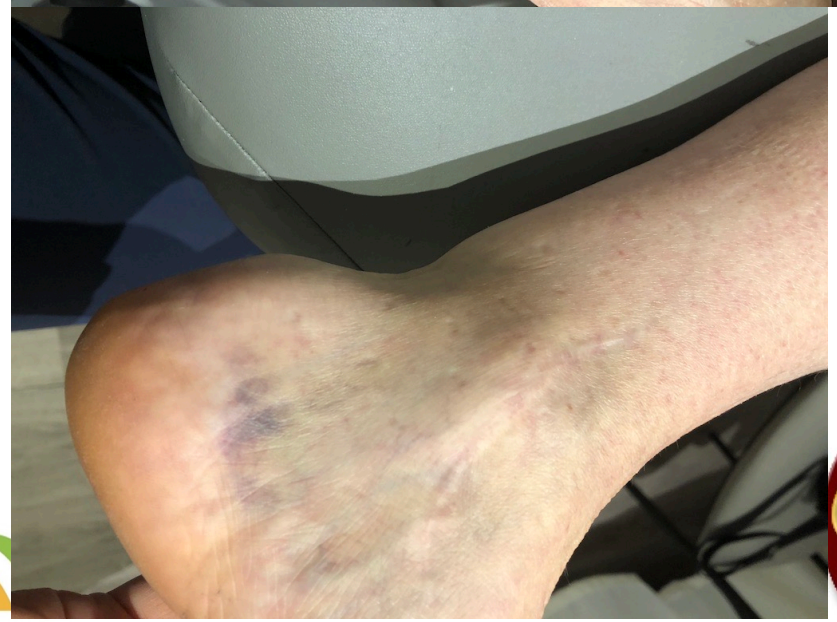
ACTION ITEM:

Always examine the patient's feet

- Need a process to make it easy
- How to assess a trauma patient in the office / urgent care/ walk in clinic

First step

- Introduce yourself
- Immediately after ask them to remove their socks and shoes
- Allows the pt to point to where they hurt
- Allows you to examine them

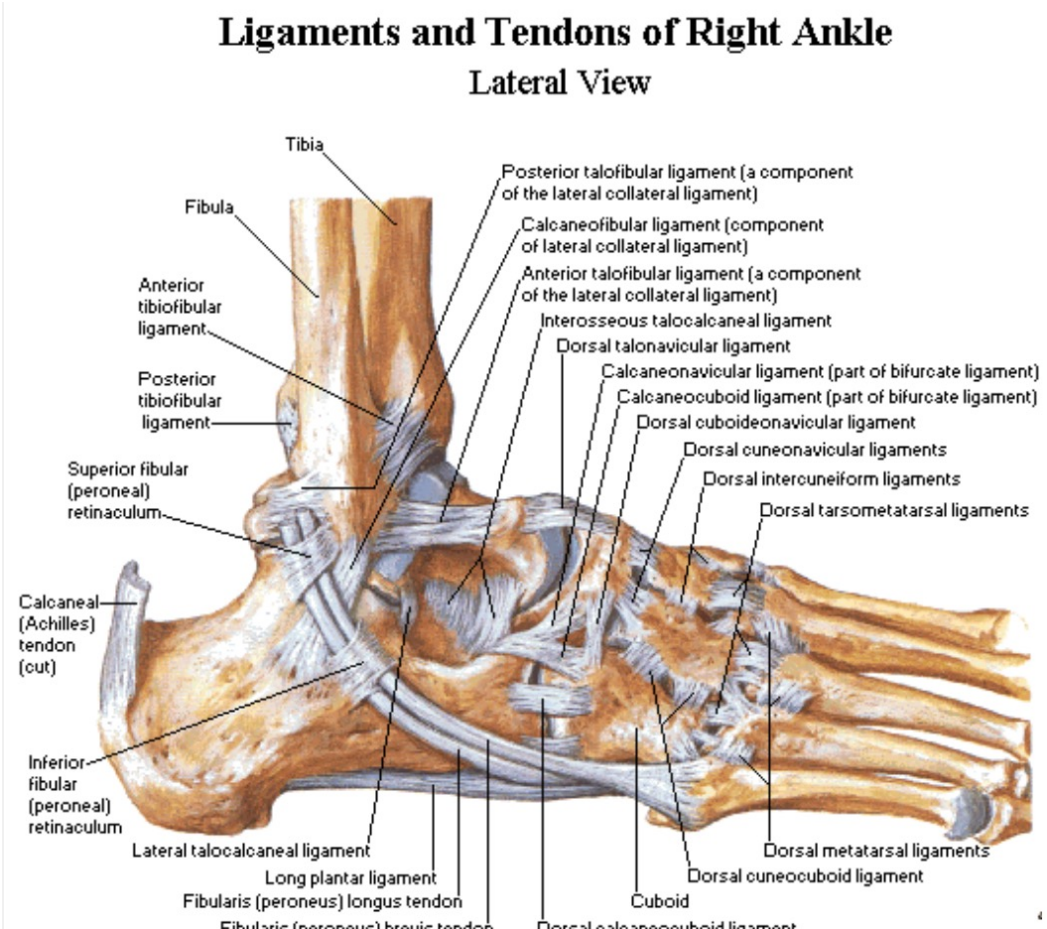


Three important pieces of information on History and physical

- 1. Where do you hurt?
  - Finger to the point of maximum tenderness
- 2. What can't you do because of the pain?
  - Can't walk; can't work; can't do sport;
- 3. What is the location of the point of maximum tenderness

Foot and ankle examination is easy

- Because all the major structures are millimeters away from your finger tip



Example

- Pt presents with an inversion injury to the ankle
- They localize pain over the peroneal tendons
- They report that they have been unable to walk more than a block since the injury three weeks ago
- Examination demonstrates pain over the peroneal tendons at the ankle

- Dx? Peroneal tendon sheath injury or peroneal tendon tear

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How to examine an ankle injury

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1 : Alignment -Standing examination (valuable if the patient can stand)

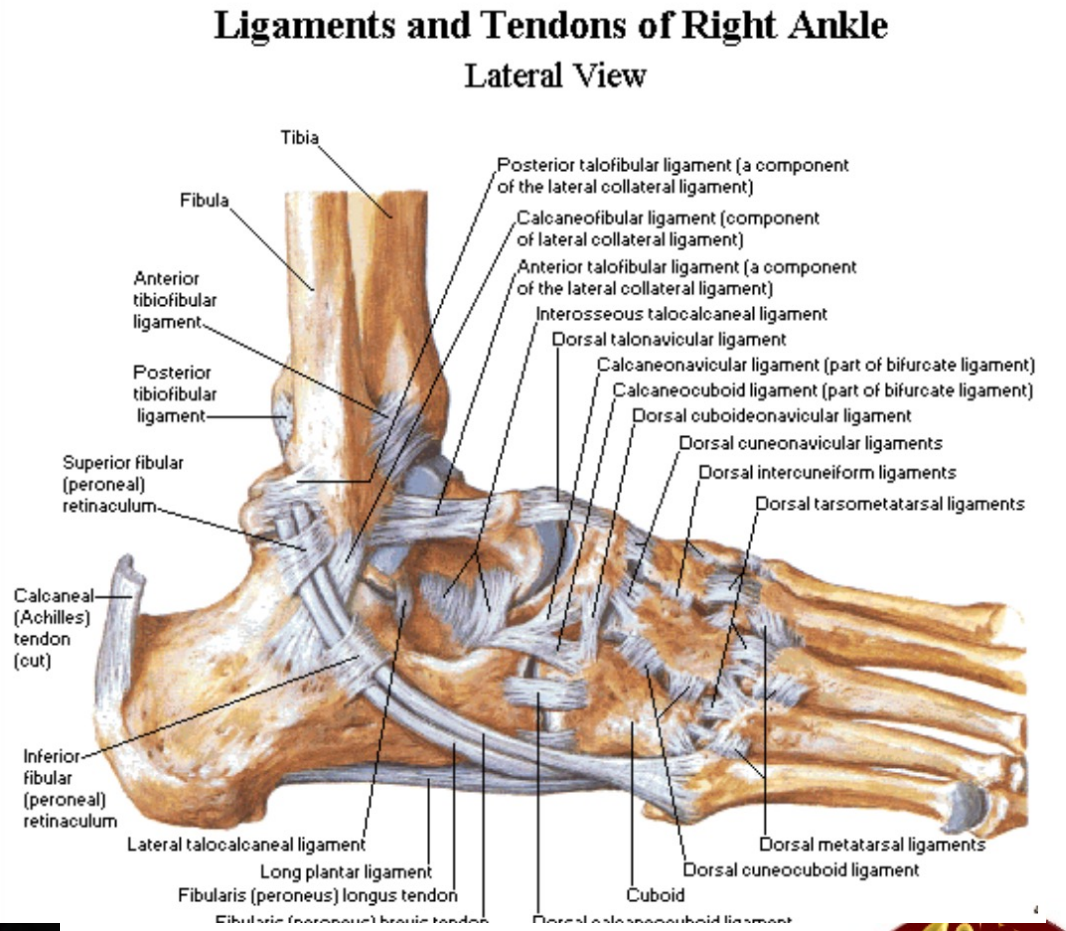
2. Joint line examination

3 Stability exam: ankle stability

4 Stability: Evaluation of the syndesmosis and deltoid

5: Peroneal tendon examination

Anterior drawer



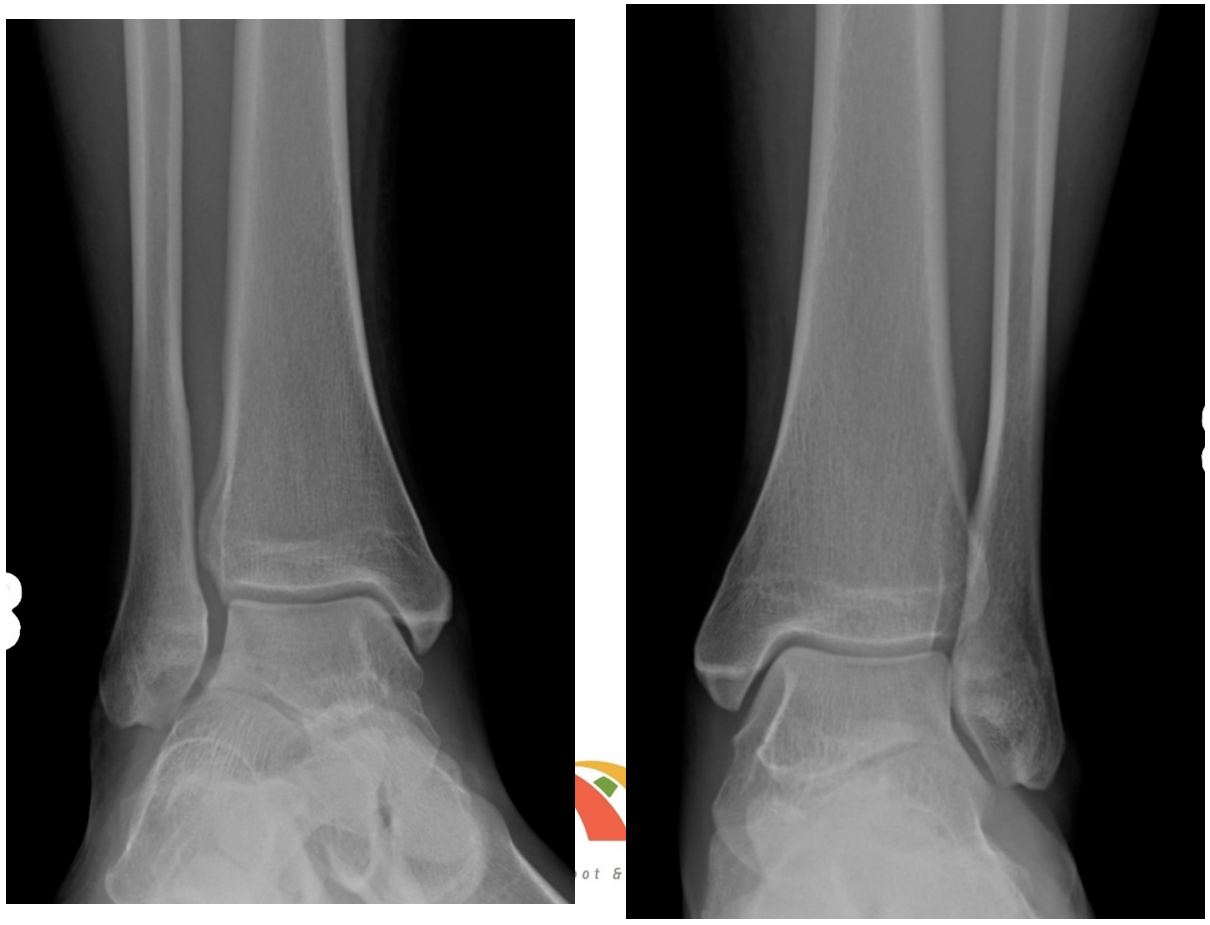
Inversion stress

Key investigations

- Plain x ray
- Always

Standing views if possible

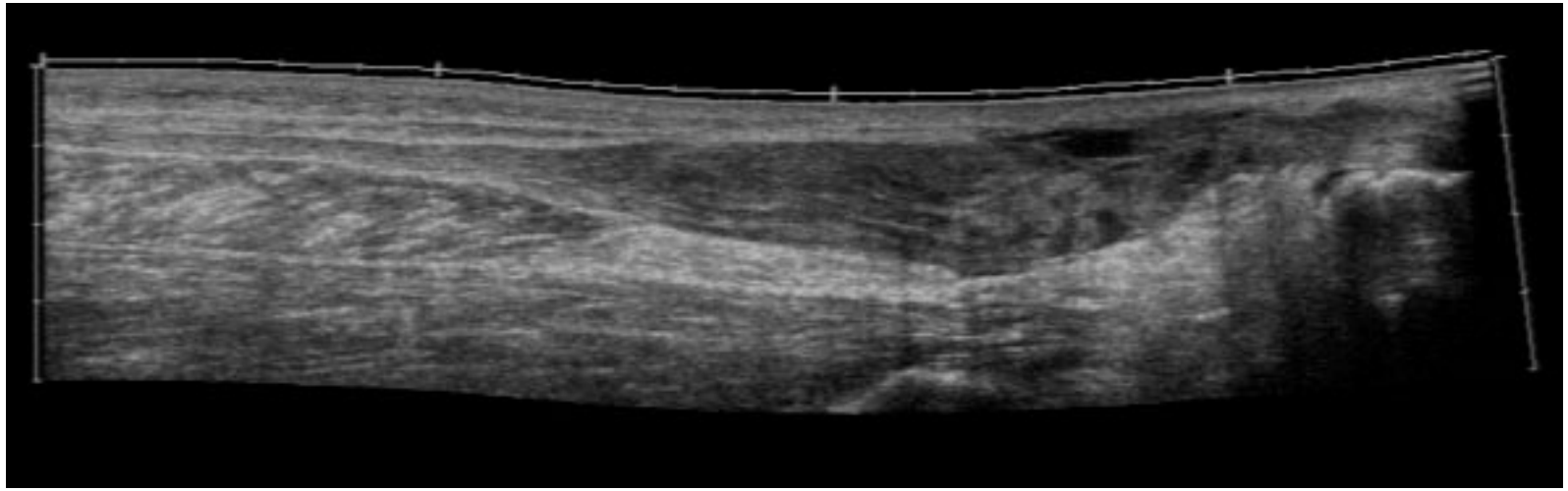
- Opening of the syndesmosis seen on x ray



Don't forget the knee x ray if the knee hurts

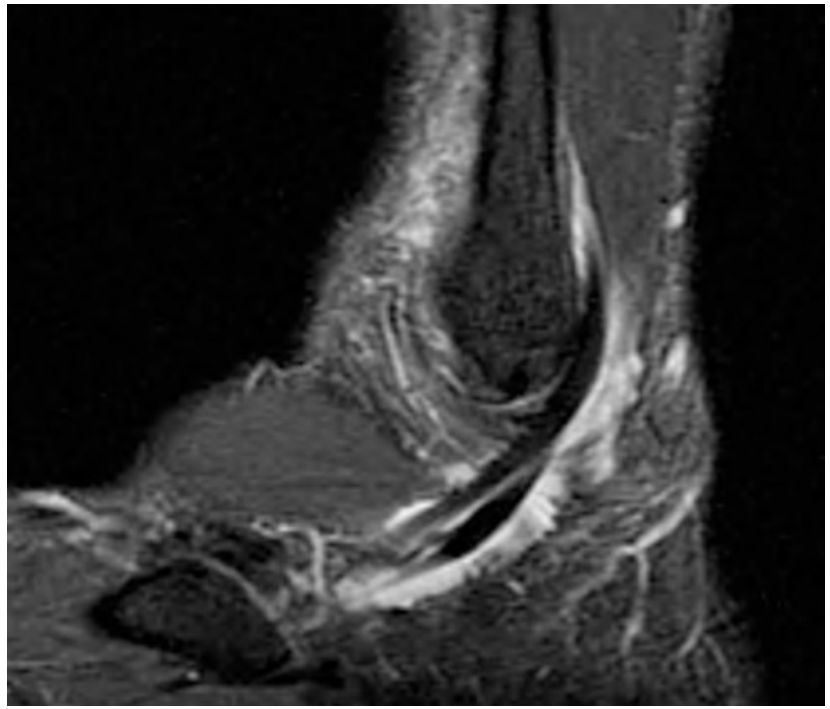
Second investigation

- Ultrasound



Third investigation

- MRI or CT



The ugly – the injury that is almost normal on plain x ray and bad on CT…

you won't miss this....

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But you might miss this

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Posterior talar body fracture

What if this presented to you?

- How can you tell the good from the bad?
  - Mechanism of injury
  - Location of swelling and discomfort
  - Unable to remobilize
- Follow up and cascade of investigations is the key
- I follow all my patients weekly until they are progressing

If you are unsure?

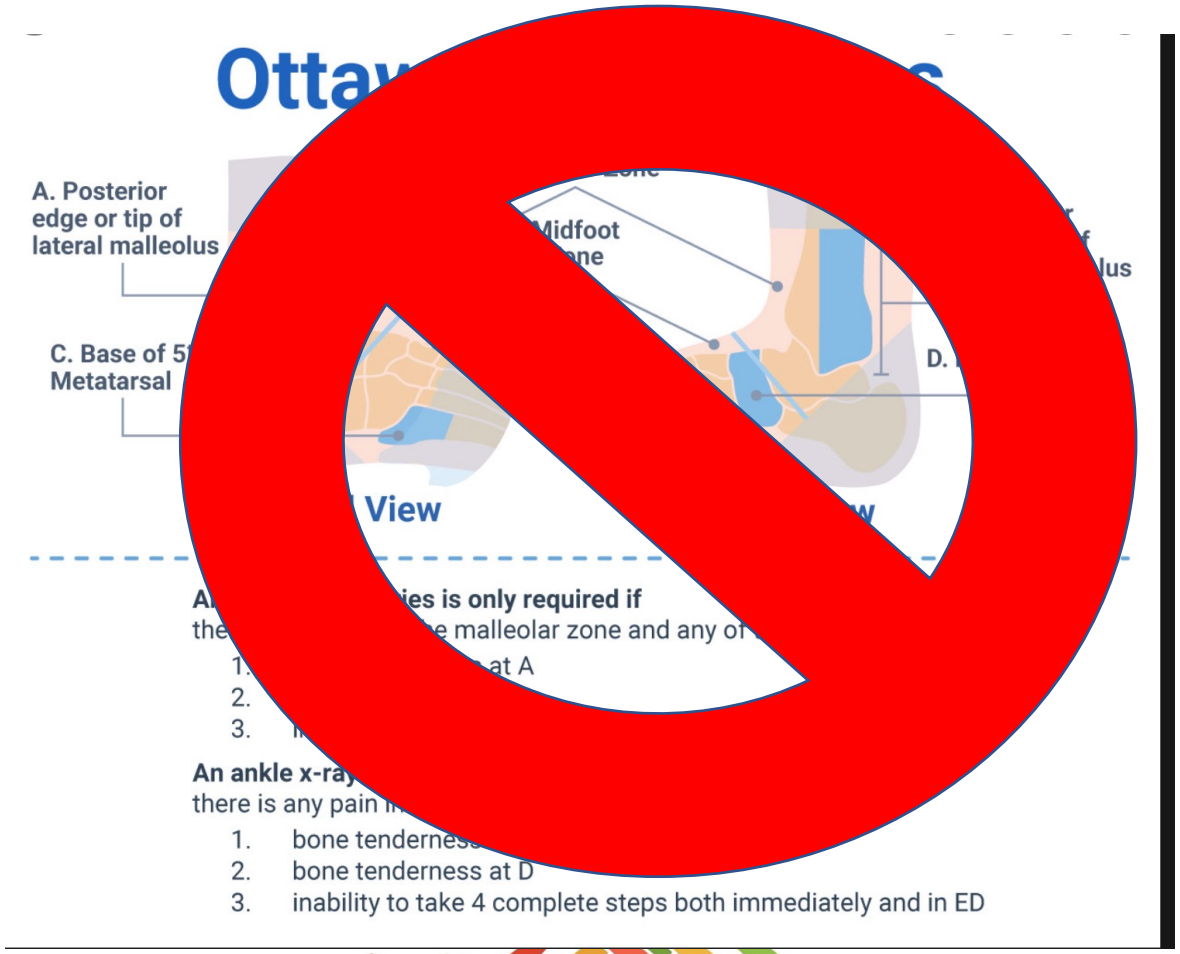
- Follow up is key
- Benign ankle injuries get better
- The rest do not
- Risk signs
  - Prolonged non weight bearing
    - Non weight bearing beyond 2 weeks
    - Reduced mobility for over 6 weeks
- Require further investigation

Ottawa ankle rules

- Know them
- Big concerns
- 1. Generalizability
  - What works in a research teaching hospital setting does not work in Rural BC
- 2. Liability
- 3. One arm of the study has no tangible gain for the physician or patient, only the health system
- 4. Get the films you need

Hospitals love them – patients should hate them

Having defended rural physicians – usually Emergency FP's against these rules for CMPA



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COVID road trip….

Legal risk

- Not getting an x ray exposes you to legal risk
- Protect yourself
- Protect your patients
- As an SHO in emergency in Scotland I defended my need for x rays
- 45 years later I feel the same way

Neuropathy

- Always x ray
- Diabetes the most common cause
- Fractures often missed or thought to be an infection

Neuropathy

- No infection occurs in foot and ankle without a local skin lesion
- Intact skin with no prior ulcer is likely a fracture not an infection

Jul 2010

Jan 2011

- I have had to defend this also in court…
- NEUROPATHY = GET an XRAY

Management of Achilles tendon tears

- Can be operative or non operative
- Both should be discussed

How to examine

- The Achilles tendon

- Palpate the gap
- Determine the length using dorsiflexion with the knee extended

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Beware the partial rupture!

- Is likely complete

Excessive dorsiflexion in knee extension

Should we repair Achilles tendons

- Willits paper JBJS 2010
- Demonstrated similar re rupture rates in surgical and non surgical repair
- However – re rupture not the whole answer
- Strength more important

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Non operative treatment results in weakness

- Willitt's paper documents this

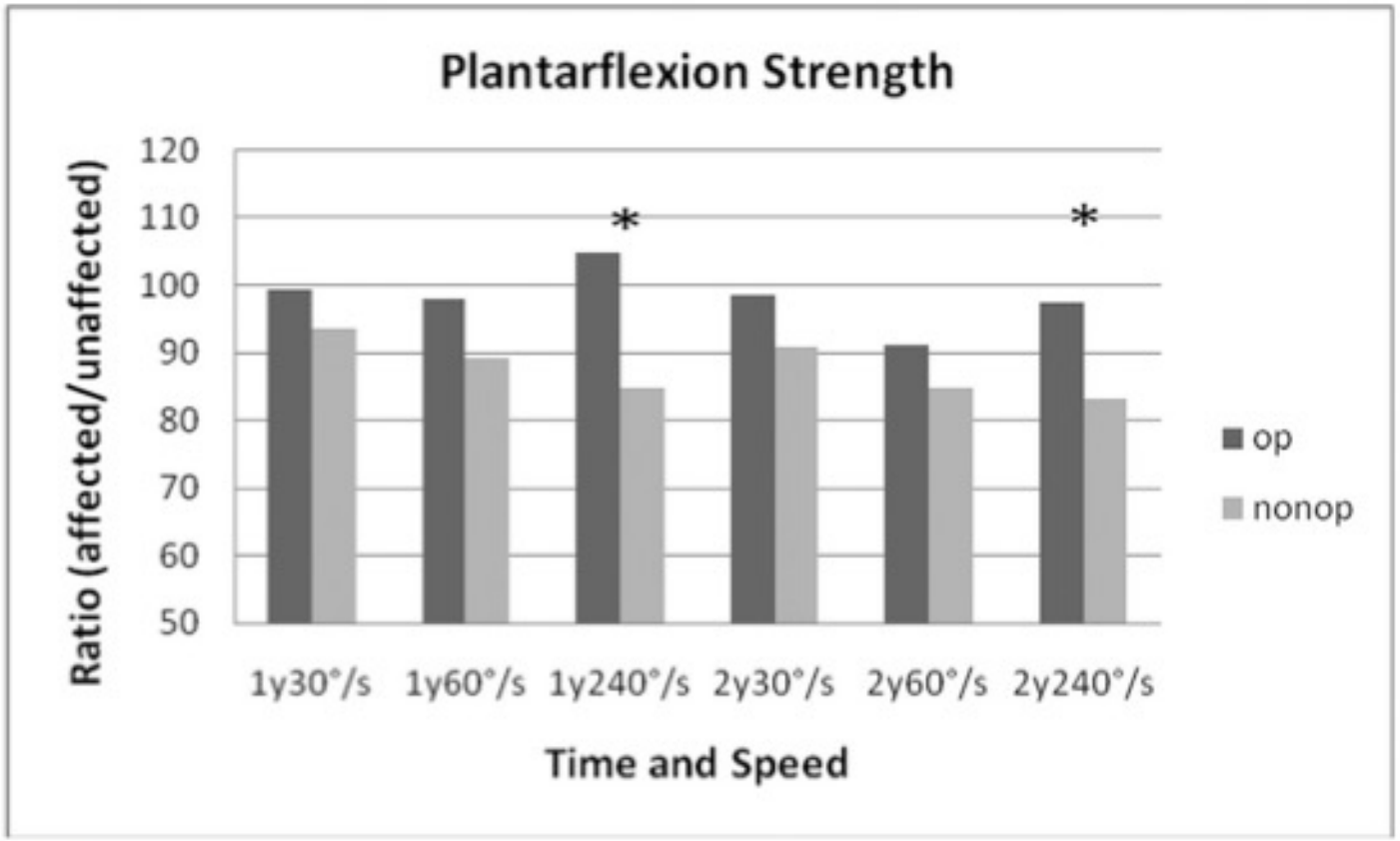
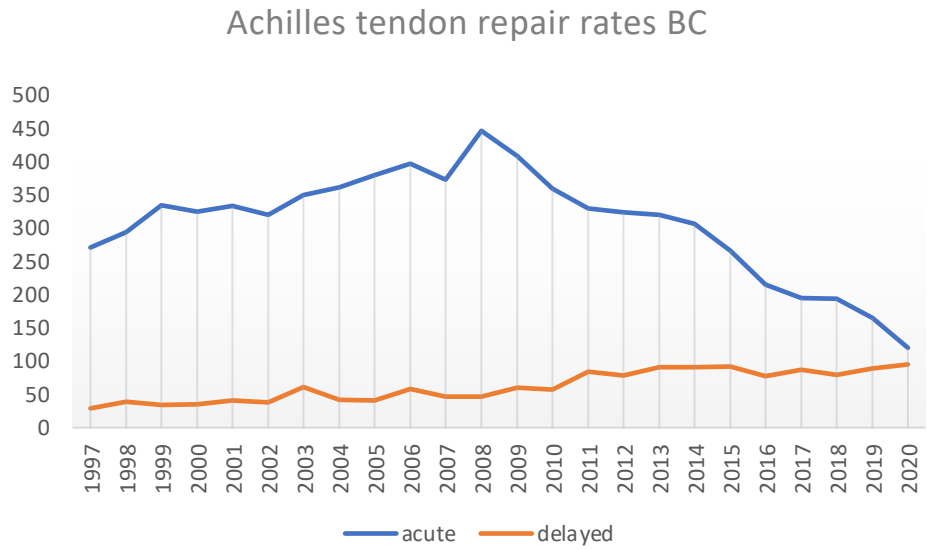
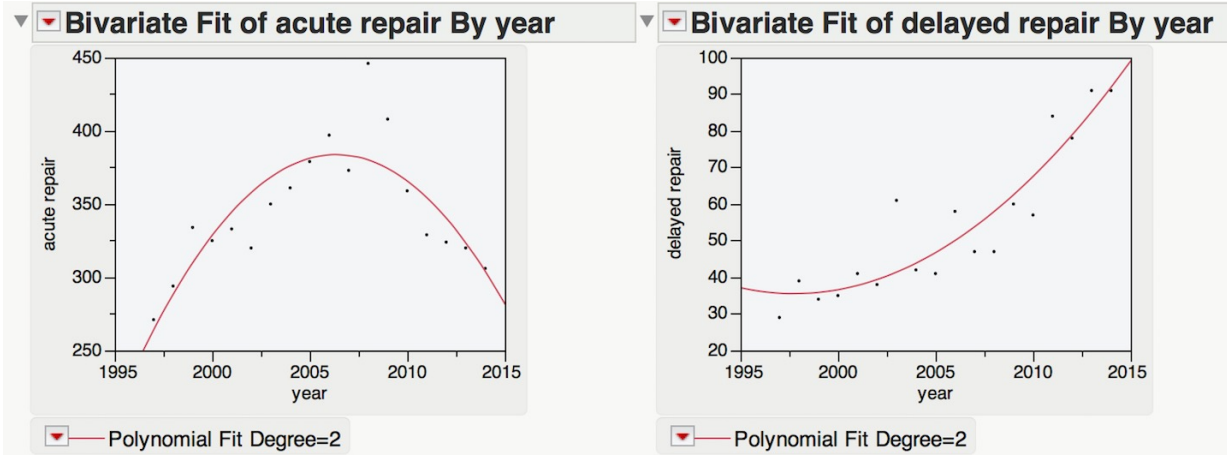


Fig. 2-A

Since this paper in our province…





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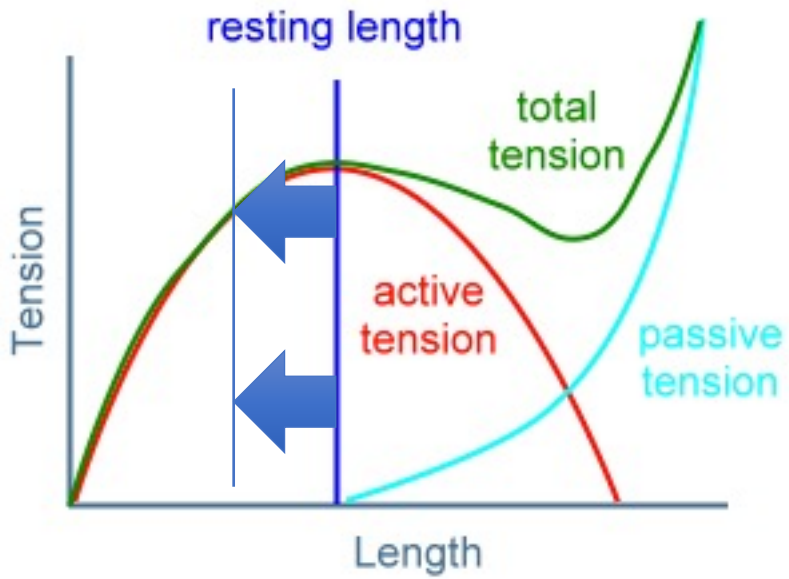
After healed too long

- No plantar flexion strength – 2 cm lengthening



Length-Tension Curve of a Muscle

Non op does not mean neglect

FOWLER KENNEDY *stay active*

fowlerkennedy.com

ACHILLES TENDON RUPTURE
Accelerated Functional Rehabilitation Protocol

0 – 2 WEEKS

- Aircast boot with 2 cm heel lift
- NWB with crutches

2 – 6 WEEKS

- Aircast boot with 2 cm heel lift
- Protected weight-bearing with crutches as required
- Active plantar and dorsi flexion to neutral, inversion /eversion below neutral
- Modalities to control swelling
- Knee/ hip exercises as appropriate
- NWB fitness/cardio work
- Hydrotherapy (within motion and weight-bearing limitations)

6 – 8 WEEKS

- Aircast boot
- D/C heel lift
- WBAT
- Dorsiflexion stretching, slowly
- Graduated resistance exercises (OKC, CKC, functional)
- Proprioceptive and gait retraining
- Modalities as indicated
- Fitness/cardio to include WBAT
- Hydrotherapy

8 – 12 WEEKS

- Wean off boot
- Return to crutches/cane as necessary; then wean off
- Continue to progress ROM, strength, proprioception

>12 WEEKS

- Continue to progress ROM, strength, proprioception
- Retrain strength, power, endurance
- Increase dynamic WB exercise, include plyometric training
- Sport specific retaining

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Issue of generalizability

- What works in a teaching hospital in Ottawa, or London Calgary may not be applicable in Rural BC
- Patients may not be able to afford or get access to the non op protocol
- Environment and patient dependent

Things that don't mean much

- Weber a fractures- they represent an avulsion injury

Don't forget the Vitamin D

- Deficiency is very common – particularly in indoor athletes

17 yo

- Ballet Dancer
- Posterior ankle pain
- Normal x ray

Severe Vitamin D deficiency

Summary

- Always examine ankles and feet
- X ray often
- Follow up until mobile
- Patients do fall through the system
- Minor injuries get better
- Major ones do not
- These patients need further investigation

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Thanks from BCOA and UBC Ortho for all your care!

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