Just do it

Useful interventions in General Practice

Action not words
Likewise let’s get going
Please share your tips with us

Excuses versus Action

Sometimes as we get older we just like to talk

“ Old men delight in giving good advice as a consolation for the fact that they can no longer set bad examples ”

La Rochelfoucauld 1613 -1680

Workshop options

- Feet
- Mulligan
- Spot pain
- Caudals
- Type 1 WRULD
    - Carpal Tunnel
    - Tendon Entrapment
        - De Quervain’s, Trigger finger & thumb

“A.I.M.E.D.” Dr Peter Broad

A - available

I - interested

M - medical knowledge

E - expertise (A niche skill)

D - detachment

Diploma of Musculoskeletal Medicine

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Interpretation of outcome

Natural history

Sequence or consequence

NNT

Non specific effects

Samuel Johnston 1709 – 1784

“It is incident to physicians, I am afraid, beyond all other men,
to mistake sequence for consequence.”

Voltaire 1694 – 1778

“The art of medicine consists in amusing the patient while Nature cures the disease”

Work Related Upper Limb Disorders

Michael A Hutson ISBN 0 7506 4548 2

Clinical Sports Medicine, 3rd Edition

Edited by Brukner & Khan ISBN 9780074715208

Considerations – diagnosis and informed consent

What are you doing this for?

Should you be doing this? (Dr Dick Wigley)

What are the alternatives?

What are the potential risks?

How certain are you of the benefits?

Workshop options

- Feet - common
- Mulligan – for elbow
- Spot pain – reasonably common, e.g. post knee arthroscopy, abd. wall
- Caudals – need is there, but in reality a niche skill
- Blomberg
- Type 1 WRULD

    Carpal Tunnel – reasonably common

    Tendon Entrapment - infrequent

        De Quervain's, Trigger finger & thumb

Foot Terminology

Supination of the foot – the ankle sprain position

- A simple rotation resulting in inversion, adduction and plantar flexion

Pronation of the foot – ‘walk like a duck’

- Eversion, abduction and dorsiflexion

Confusingly pronation and supination have been used to describe eversion and inversion

A concept from McRae

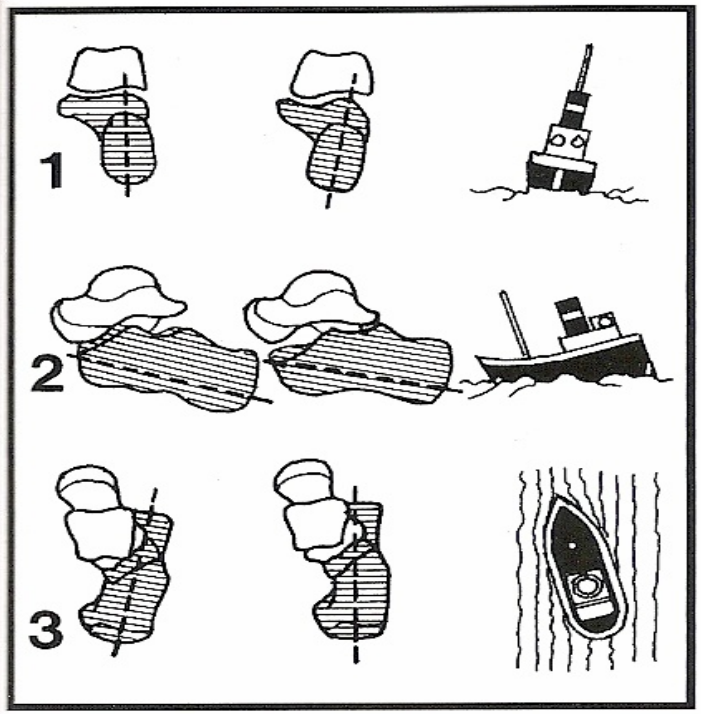


Fig. 14.G *Subtalar movements* (2): The complex pattern of calcaneal movements which occur in inversion are sometimes compared with the three-plane movements of ships or aircraft: the calcaneus rolls (1), pitches (2) and yaws (turns) (3) under the talus.

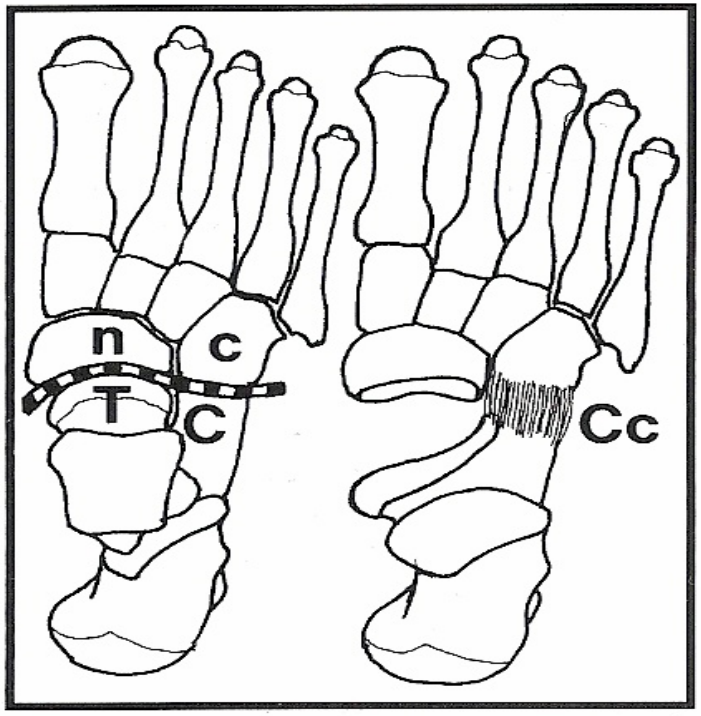


Fig. 14.H *The mid-tarsal joint* (1): This links the hind foot with the mid foot. It is formed by the head of the talus (T) and the navicular (n) on the medial side, and on the lateral by the calcaneus (C) and the cuboid (c). The latter joint (Cc), which permits only a limited range of movements, ensures that when the heel moves, the rest of the foot follows.

I think the podiatrists hold a different view

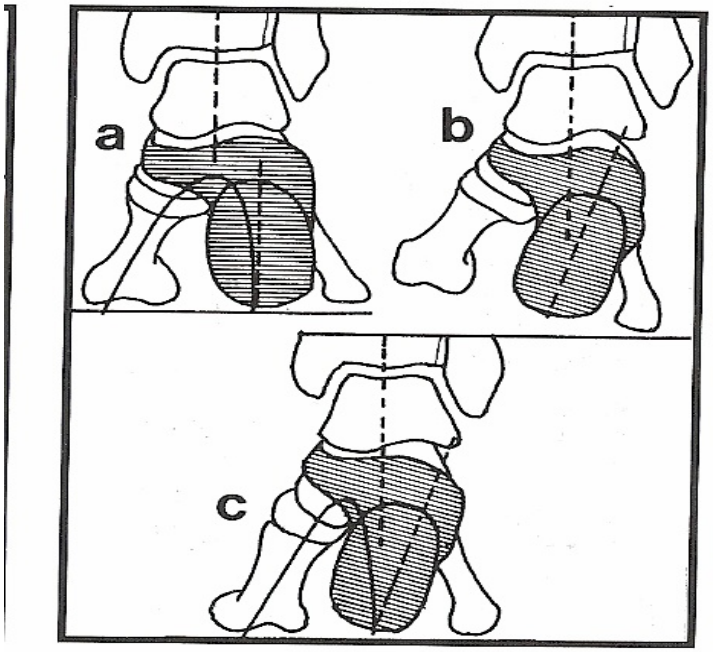


Fig. 14.L *Heel posture* (1): Normally, in the weight-bearing foot the axis of the heel is in alignment with the tibia (a). If the heel posture is abnormal, and tilts into varus, then under normal circumstances the foot would supinate and the first metatarsal head would not contact the ground (b). To correct this, the foot distal to the subtalar joint must pronate, and this leads to accentuation of the medial longitudinal arch (c).

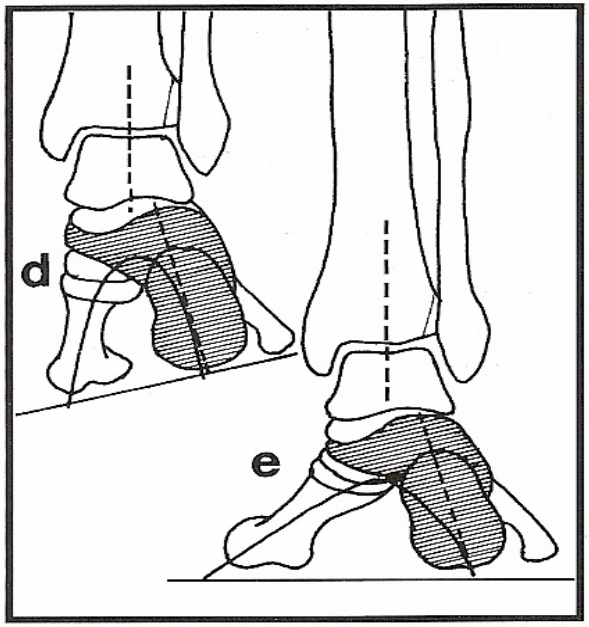
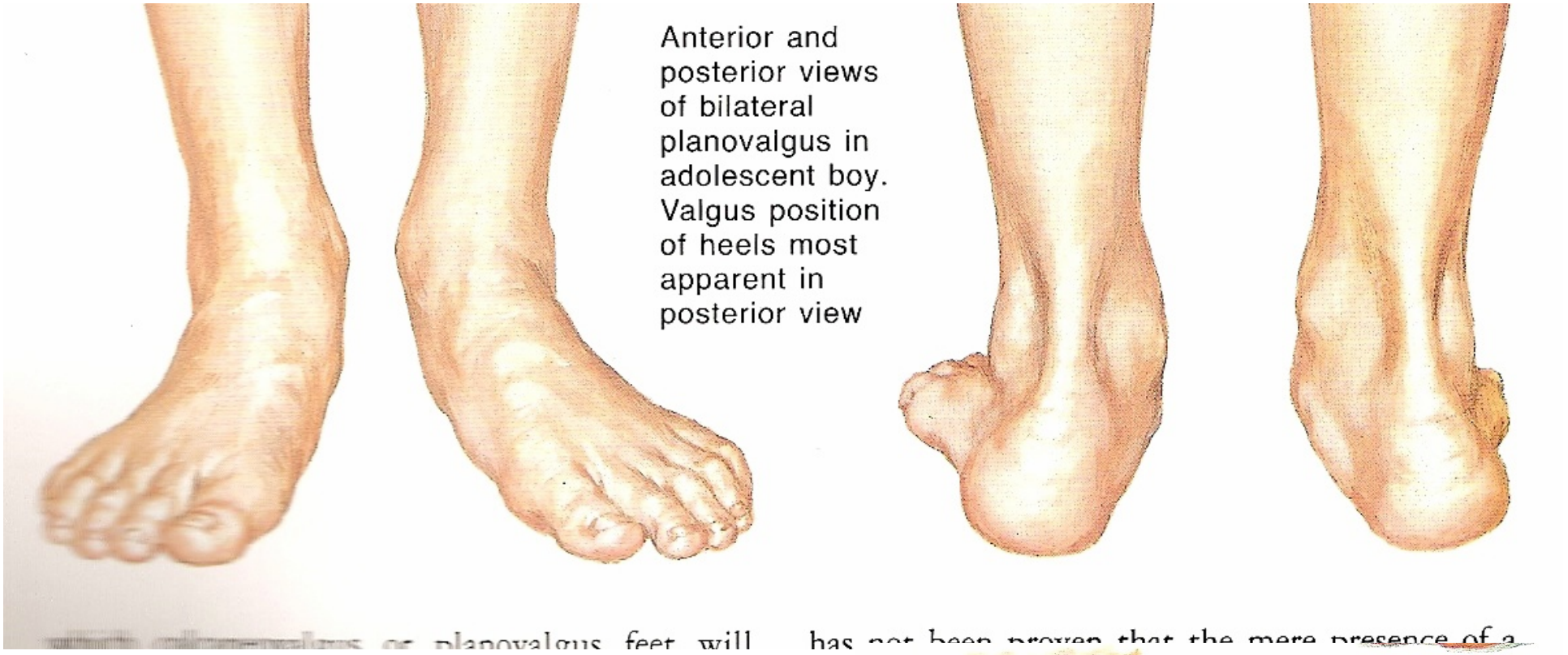
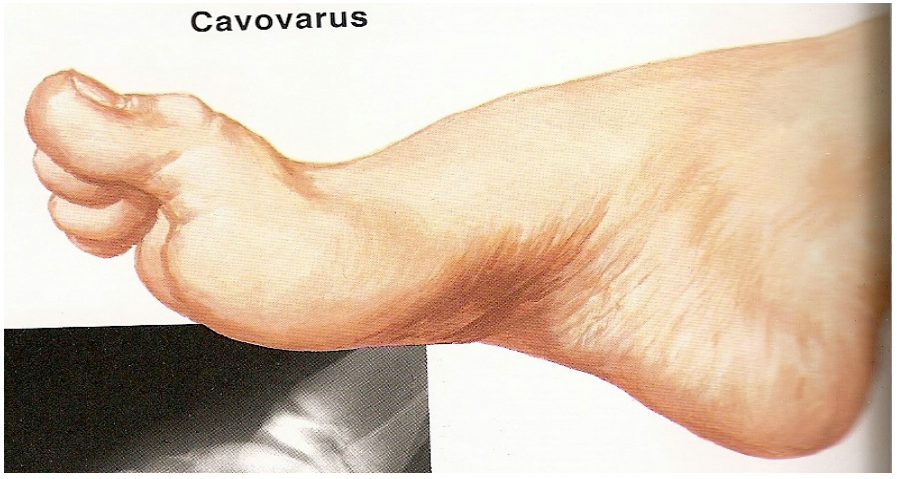
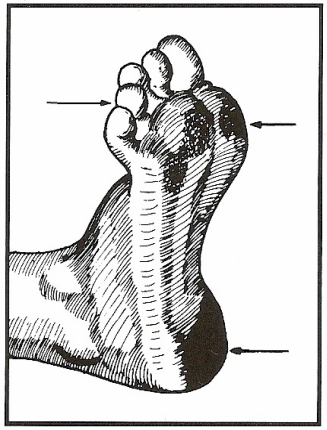


Fig. 14.M *Heel posture* (2): If, on the other hand, the heel posture is one of valgus (d), then to allow all the metatarsal heads to contact the ground the foot distal to the subtalar joint must supinate, leading to flattening of the medial arch (e). The important practical points to note are that *valgus heels are associated with flat foot, and varus heels with pes cavus.*

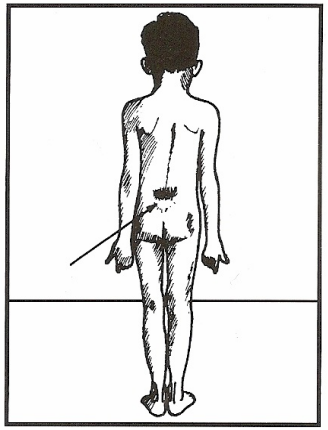


Anterior and posterior views of bilateral planovalgus in adolescent boy. Valgus position of heels most apparent in posterior view

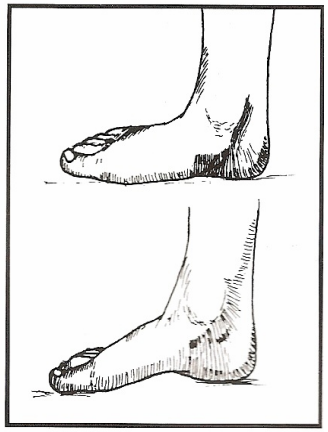




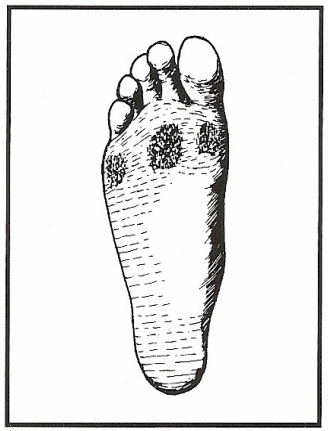
49. *Posture* (9): *medial arch* (2): If the arch appears high and accentuated, this suggests a degree of pes cavus. Look for confirmatory clawing of the toes, callus or ulceration under the metatarsal heads, and alteration of the footprint.



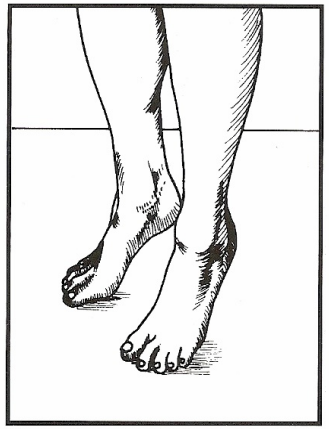
50. *Posture* (10): *medial arch* (3): If *pes cavus* is present, carry out a full neurological examination. Look at the lumbar spine for dimpling of the skin, a hairy patch or pigmentation suggesting spina bifida or neurofibromatosis. Radiography of the lumbar spine is desirable.



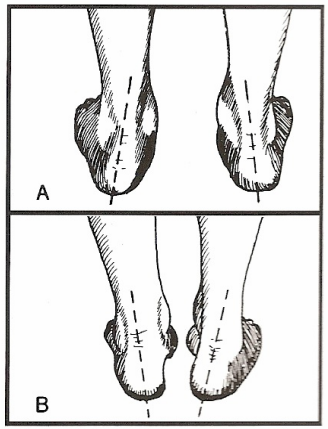
51. *Posture* (11): *medial arch* (4): In *pes planus*, the medial arch is obliterated. The navicular is often prominent, and the fingers cannot be inserted under it. Ask the patient to attempt to arch the foot. In mobile flat foot the arch can often be restored voluntarily.



52. *Posture* (12): *medial arch* (5): If pes planus is suspected, re-examine the sole for confirmatory evidence of callus under the metatarsal heads, and an increase in the area of the sole involved in weight-bearing (i.e. extension of the narrow lateral strip). The footprint will be abnormal in these circumstances. Note also the presence of any knock-knee deformity.



53. *Posture* (13): *medial arch* (6): In pes planus, assess the mobility of the foot first by asking the patient to stand on the toes, while at the same time examining the alteration in the shape of the foot by sight and feel. Later in the examination carefully note the range of inversion and eversion.



54. *Posture* (14): *heel* (1): Look at the foot from behind, paying particular attention to the slope of the heels. Note (A) valgus heels are associated with pes planus; (B) varus heels are associated with pes cavus.

Use your Sports Med book to look up the various overuse injuries associated with these Essentially the cavus is rigid so trauma from energy of the footfall occurs in the soft tissues.

The planus is soft and an inefficient platform for propulsion, so the muscles have to work harder

Podiatry 101 Corns

Foot corns are very painful

(Plantar warts duct tape works a treat– www.dermnetnz)

Many a resistant plantar wart is a corn

Magnification helps with the diagnosis

Corns are a marker of biomechanical problems

Removing corns will endear you to your patients

(cf Ear wax)

Caution: the ischaemic foot

Dry corns: use 15 scalpel
Good light & magnification
Get comfortable
Close your mouth!
Pare overlying skin away
See the translucent/clear skin that is the base of a cone of compressed skin, the apex is acting like a hard Foreign body
Angle down and in to cut it out
Temptation is to try & get too much & the result then is blood, bad luck

Wet corns: between toes
As for dry add LA (Plain) and toothed forceps
Assistant to hold toes
Use the curve of the blade scoop out upper layers and define the moist pearly skin that has collected and is acting like a foreign body. Hold with forceps & undercut it & remove

Brian Mulligan, ‘Manual Therapy’

ISBN 0-476-01154-X Plane View Services, Box 14 488 Wgtn

- Mobilisation with movement (MWMS)
- www.bmulligan.com for a teacher near you

Consider one for a peer review or CME meeting

- Ankles
- Knees
- Shoulders
- Elbows
- Wrists
- Digits

BMJ 2006;333; 939

Vicenzio et al,

Brisbane

Brian Mulligan

www.bmulligan.com

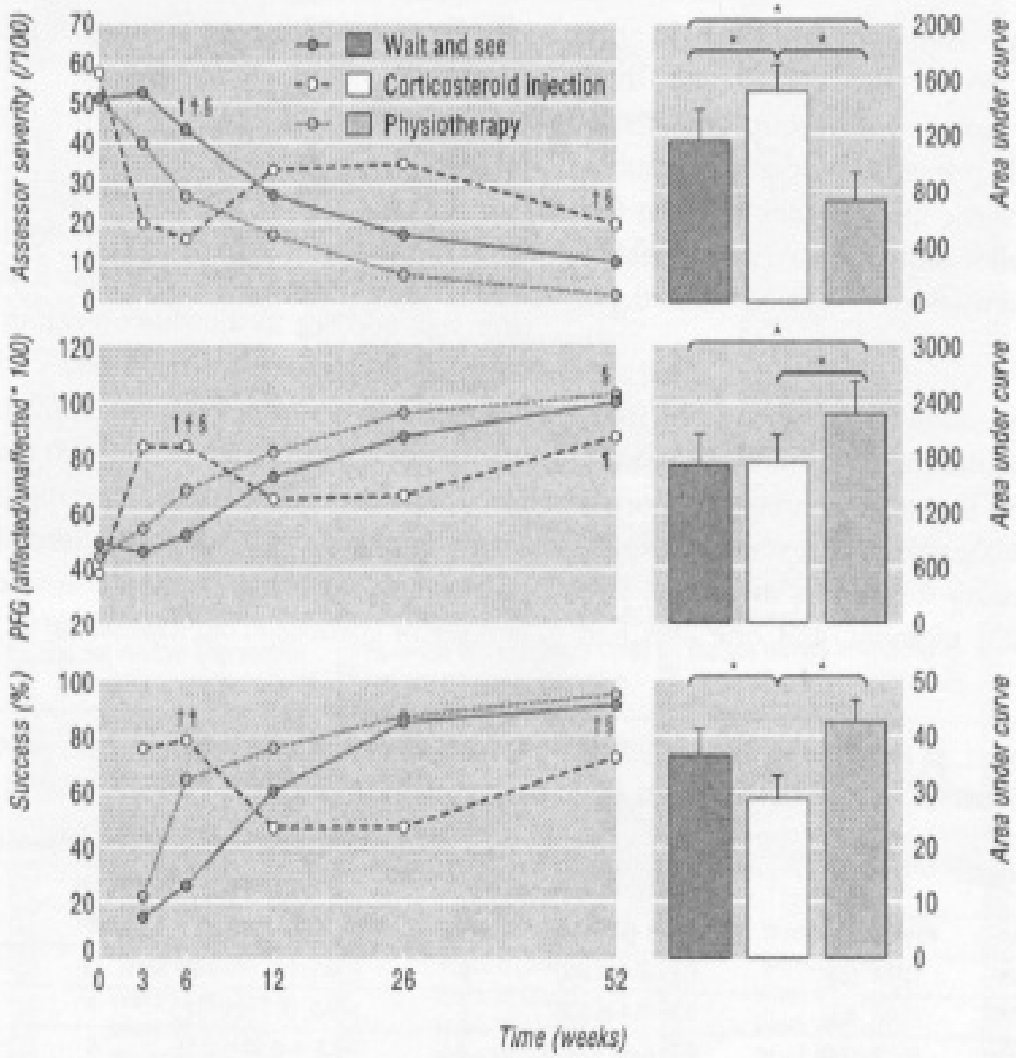
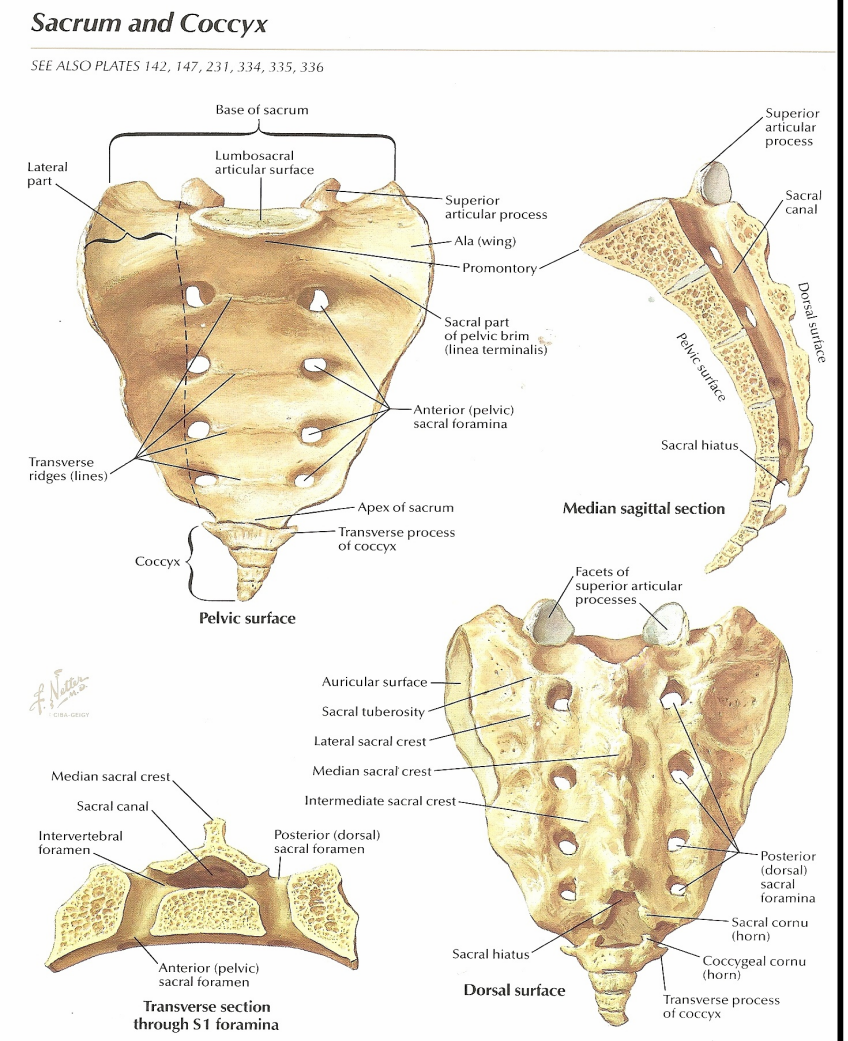


Fig 2 Primary outcome measures: mean assessor's rating of severity (visual analogue scale), mean pain-free grip (PFG—affected/unaffected, expressed as a percentage), and percentage success. Significant differences between study arms at six and 12 weeks: †corticosteroid injection *v* wait and see; ‡physiotherapy *v* wait and see; §corticosteroid injection *v* physiotherapy. ¶Significant difference between corticosteroid and wait and see on per protocol analysis. Bar graphs represent mean (99% confidence interval) area under curve (trapezium method[24]) analysis of assessor severity, PFG, and global improvement. *Significant differences between groups ($P<0.01$)

B.B.C. (Bring back caudals)



Superb analgesia for radicular pain & spinal stenosis

Thecal sac ends at S2 (PSIS level)

(infection, allergy, bleeding diathesis)

Find cornua (Can be hard to do)

Mark cornua, Skin prep – alcohol

25G, bleb of 1% plain lig midline

4mls 1% plain lig. 40mg Kenacort

5 mls n.saline/10ml Syringe, 21G

Enter at midline, feel it penetrate the membrane, aspirate, slow i.e. over 10 mins inject contents

Generally SLR and pain better stat

Monitor (IV access?) Empty bladder

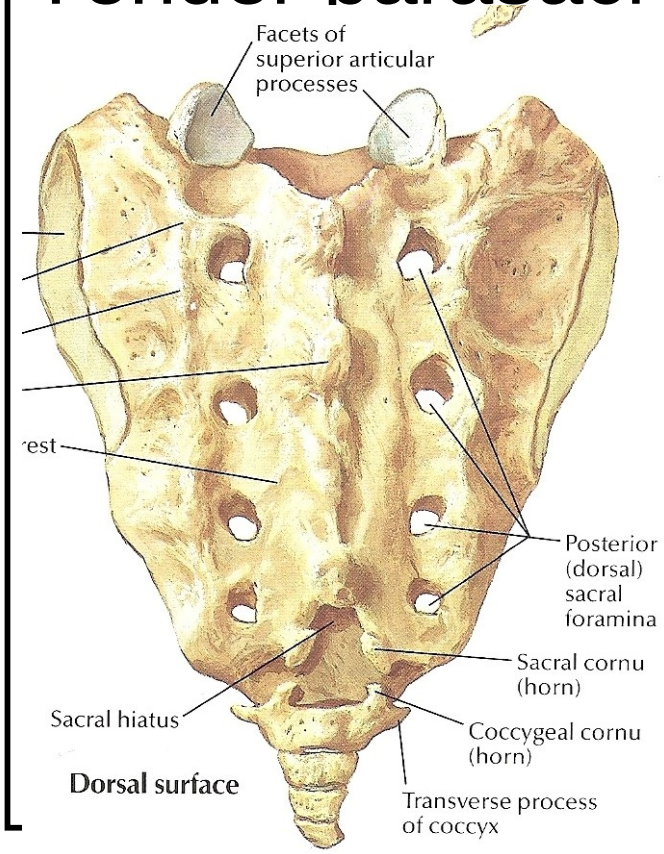
Keep back for allergy

Blomberg Technique for LBP

Poor response to manual therapy

Reduced straight leg raise, ‘pseudo-sciatica’

Tender parasacrococcygeal areas



40mg Kenacort and 5mls 1% plain lignocaine

Inject to the tender areas

Generally 80mg total dose

Immediate effect on SLR

Needling

Dry needling

“Shallow”
or
“Deep”

? Mechanism
of
Action

Wet needling

Needle effect

Non specific effects

Injectate effects

Injectate properties

Steroids – e.g. Kenacort
Inhibit collagen production; decrease mast cells and fibroblasts; reduce permeability of connective tissue & synthesis of hyaluronic acid; inhibit aminotripeptidase i.e. synthesis of neural peptides; stabilise lysosomal membranes; prolonged suppression of ongoing neuronal activity (LA action); suppression of sensitisation of dorsal horn neurons; blockade of phospholipase A2 activity

Recent studies show that tenocytes (Fibroblasts) produce Substance-P, Acetylcholine, Noradrenaline and Glutamate
Mast cells may be implicated in tendon pain.

The pharmacological effects as opposed to the anabolic effects may explain the pain relieving effects of steroid injections for tennis elbow and other soft tissue pain which do not have a compression factor in their etiology.

The patient must “earn” their steroid Rx

I regard a steroid injection as a chemical decompression

In my opinion the risks have been overstated.
(c.f. It’s a case of only an obstetrician can deliver a dead baby)
Complications: are few and far between
I have many patients who are grateful to have their pain relieved

The following have the factor of compression in their aetiology

- De Quervain’s
- Trigger finger/thumb
- Carpal Tunnel Syndrome
- ?Impingement Syndrome in the shoulder

Outcomes

Carpal Tunnel:

Better results if early Rx

Steroid injection:

Best if mild & early i.e. < 1yr

Time	Mild n=18	Severe n=32
3/12	94%	50%
6/12	75%	34%
12/12	39%	19%
18/12	39%	13%

Surgery:

Better results if NCS for Dx

Always NCS if occupational!!!!

97% if less than 6/12

75% asymptomatic 2-7 yrs

De Quervain's:

Harvey et al (1990)

J. Hand Surgery 80% success

Anderson BC Arthritis Rheum 1991

Prospective study De Quervain's

N=55, 40mg Methylprednisolone

F/U 52,

@ 6/52 81% complete 13% partial

@ 4 years 58% still asymptomatic

33% had a recurrence

3 in this series had surgery

Surgery:

83- 92% success rates

Strategies for injection

- Bring the patient back specifically for the injection Rx
  This avoids having to rush which can affect quality
  Regard it as you would a skin excision, don't rush

- Be aware of the anatomy
  Get the anatomy book out the first few times
  Know where you shouldn't go

- Prepare the patient – distract by inhalation as prick
- You cannot physically inject into a tendon
- "Feel" the needle as it traverses the tissue planes
- Go to periosteum, bevel parallel to fibres, pressure on plunger, withdraw slowly and when the needle orifice is in the potential space between the tendon and sheath, i.e. the target space, the contents will flow in. Watch for the 'propulsion' wave

Carpal Tunnel Syndrome

-there is no diagnostic gold standard

To inject 20mg Kenacort into the carpal tunnel (CT)

- 23 G needle, reasonably atraumatic and when you aspirate blood should come into lumen if in vessel.
- 3ml syringe, 1ml of 40mg Kenacort & 1ml of 1% plain lignocaine, waste just under 50% of this, so that you allow for dead space when you inject the 1ml
- Lie patient supine, support distal forearm so that the wrist is slightly dorsiflexed
- Identify the landmarks (see next slide), keep talking to the patient, and clean skin with alcohol swab
- As this is evaporating, open the Band-aid and have it handy by sticking to nearby surface

“Never trust a schematic diagram”

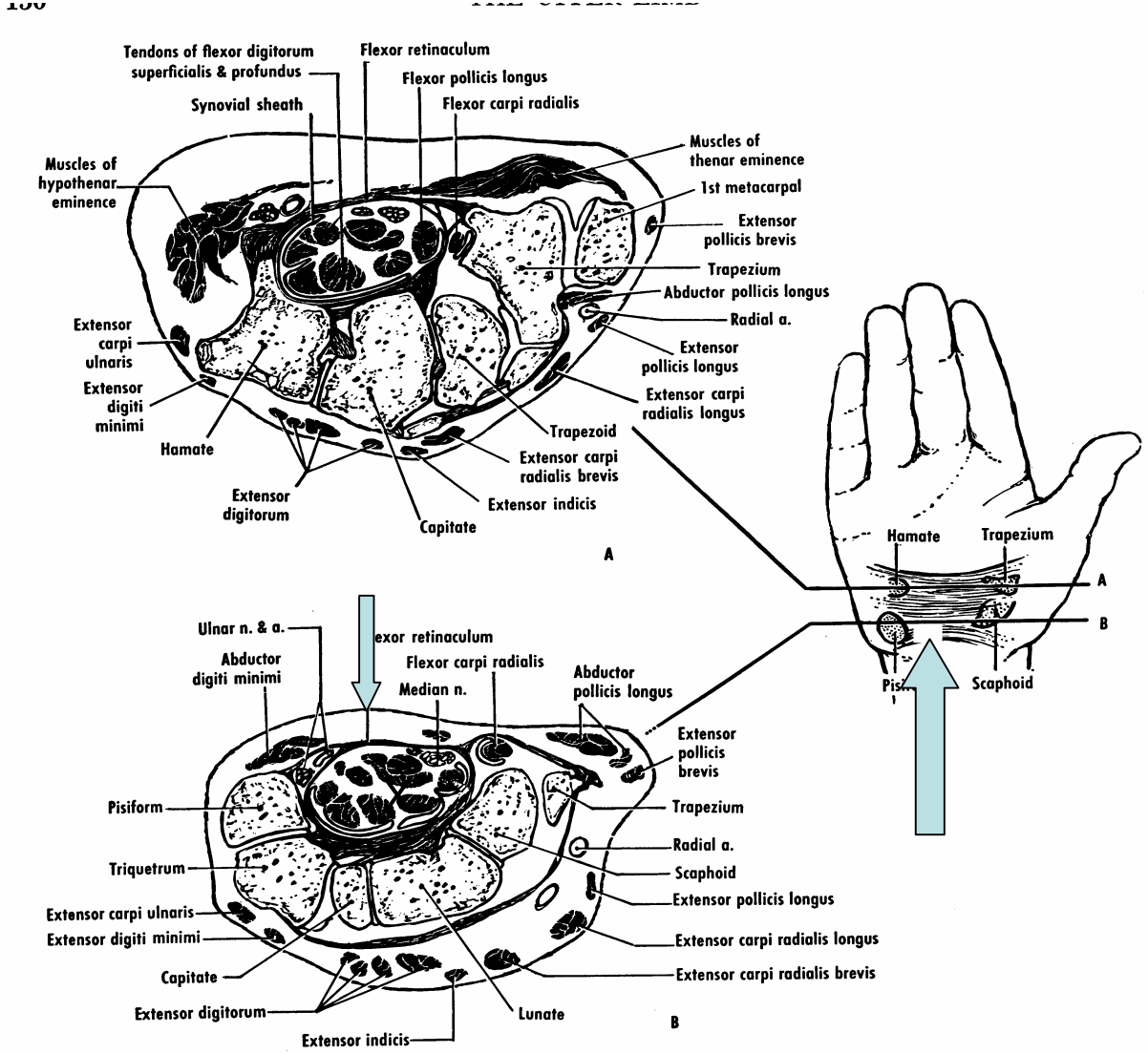


Fig. 16–2. Drawings of horizontal sections through the wrist at the levels indicated on the sketch of the hand.

Place your index pulp lateral to the pisiform, in line with the 4th finger, slide the finger proximally till the tip of your nail is on the distal nail crease, inject at the mid point of nail tip.

Angle needle to get into the carpal tunnel.

Feel the needle puncture the skin then the flexor retinaculum.

Aspirate, inject slowly

Reposition medially if hit nerve

Come back next week if you hit the ulnar artery

Reassure them that they may get a mild exacerbation of their CTS stat or in the hours following the injection, i.e. may wake more often that night or develop symptoms more easily

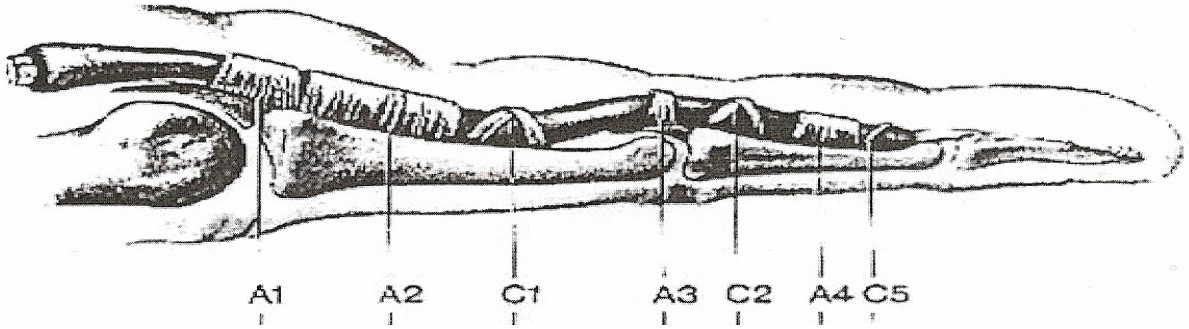
Important structures to identify

- Pisiform bone with attached FCU
- Distal wrist crease crossing pisiform
- Place angled needle tip in line with the 4th digit, on the distal wrist crease

  (We are trying to avoid injecting either the ulnar artery or nerve which are lateral to the pisiform and of course the median nerve which is medial to FCR)
- Patient inhales, you penetrate the skin, then the flexor retinaculum, so you are now in the CT
- Aspirate, inject, if won't you are in a tendon, so you withdraw slightly, aspirate and inject the contents of the syringe. If arterial blood, abandon till next week

Carpal Tunnel Injection (continued)

- Leave syringe sticking out and get Band-aid
- As remove needle apply Band-Aid
- Have patient open and close hand to spread the injectate around carpal tunnel
- Remind them that the injection volume may aggravate their symptoms for a night or two
- See in a week to review



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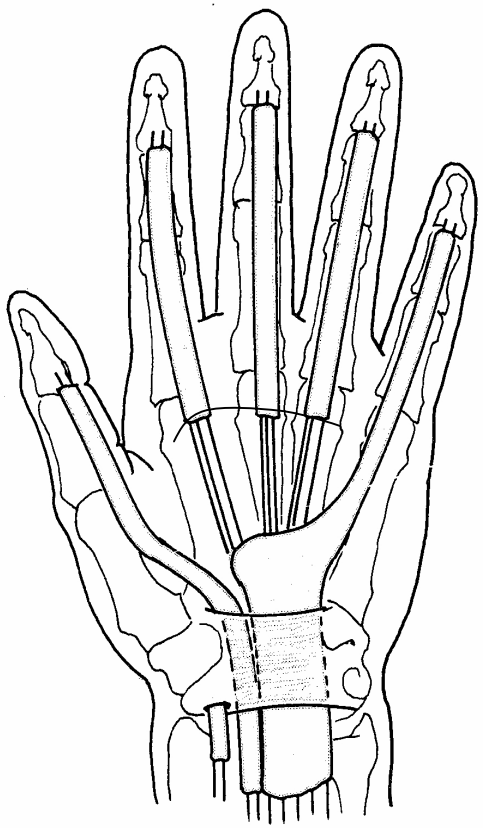
Flexor Tendon

Entrapment of the Digits

J Steven Moore



6.12.4

Synovial sheaths begin at distal palm crease

Inject between MCP and distal crease

Studies:

77% improvement/resolution in 338 fingers

49% after one injection

23% after two injections

5% after three injections

Marks and Gunther	*Finger*	*Thumb*
One	*84%*	*92%*
Two	*91%*	*97%*

Trigger finger and thumb

Thickening of the first annular (A1) pulley at the level of the MCP (Response to compression & shearing)

Palpable tender nodule volar aspect of the MCP
Gives a triggering,
- i.e. resistance then sudden release
- often worst or apparent when first wake

Finger fails to release after gripping firmly
Sometimes the patient reports an inability or difficulty to flex the finger
Typically thumb or 3rd or 4th fingers
Association with CTS, females, bimodal age distribution, below 6 and above 40
If typical triggering in presence of Dupuytren's, don't attribute it to the Dupuytren's
One injection usually suffices and tendon frees up by day 5
You can repeat the injection a month later if not 100%
Depending on the interval between injections, i.e. a third injection could be entertained after 9 months (arbitrary, consider tissue atrophy and weakness)
Consideration of a third injection after a brief interval is an indication for surgical opinion
Though the effectiveness of surgery is generally accepted there are relatively few studies that report results that are not susceptible to bias according to J S Moore.
Success rates of 95% have been reported
Note: Apparently the technique can be used for a digital block (We'll see shall we?)

Materials for trigger digits

- Alcohol swabs & Band-aid
- 3ml syringe
- 25G needle, not too long or short
- ?Larger needle to draw up
- Kenacort 40mg/ml
- Lignocaine 1%

Draw up 20mg of Kenacort (0.5ml)

Draw up 1 ml of lignocaine, mixing bubble

Waste half, so maximum Kenacort is 10mg

Injecting trigger thumb and finger

- It’s a tactile thing, appreciate the space
- Aim to spear through the nodule onto the head of the metacarpal, so must clean the skin
- Warn of pain, get them to inhale, talk to them
- Be definite, this is best done firmly and calmly
- Penetrate to periosteum, bevel parallel to fibres, pressure on plunger, withdraw slowly and when the needle orifice is in the potential space between the tendon and sheath, the target space, the contents will flow in. Watch for the ‘propulsion’ wave

Note: Apparently the technique can be used for a digital block (We’ll see shall we?)

De Quervain's Disease

Exquisitely painful spot at end of distal radius

4-8 cm distal to the Intersection Syndrome

Nursing mothers – wrist cocked to hold bottle

Direct trauma – cleaning and hit the edge of a surface

Fish filleter – repetitive radio-ulnar wrist deviation

Unaccustomed action – e.g. sweeping a large area

Bowstringing of the tendons against the retinaculum results in compression & shearing

Histology:

Increased fibroblastic activity, vascular proliferation, increase in glycosaminoglycans, synovial thickening, fibrocartilaginous

Transformation and scanty perivascular lymphocytic infiltrate

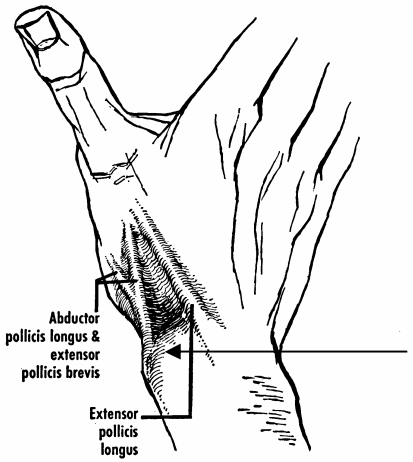


Fig. 15–5. The "anatomical snuff-box." Note how the tendons of the abductor pollicis longus and extensor pollicis brevis diverge in proceeding distally.

extends from the anterior border of the radius to the styloid process of the ulna and to the back of the triquetrum. It is crossed by the superficial branch of the radial nerve and by the dorsal branch of the ulnar nerve. From its deep aspect, septa attached to ridges on the radius and ulna form six compartments. Each compartment has a synovial sheath. The compartments contain the following tendons from lateral to medial side (fig. 15–7):

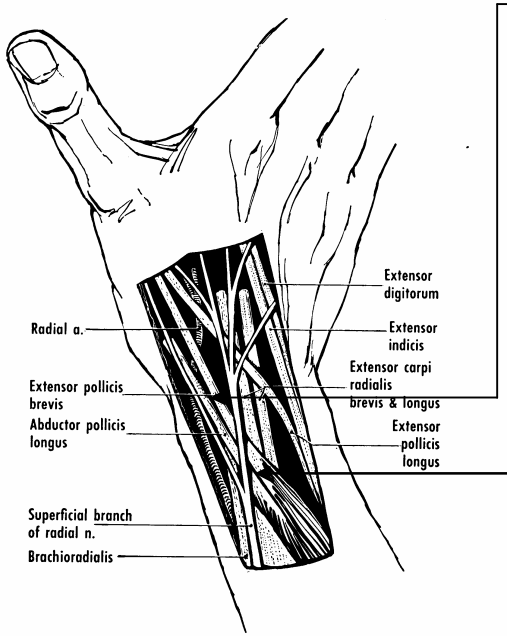


Fig. 15–6. The "anatomical snuff-box."

First dorsal compartment contains

- Ext. pollicis brevis (EPB)
- Abd. pollicis longus (APL)

Please distinguish between two conditions that involve these tendons, one where they cross the distal radius, the other where they cross the wrist extensors.

De Quervain's is where the pain is felt on the lateral aspect of the distal radius Styloid is posterior to it, between EPB & EPL

Intersection Syndrome is pain where EPB & APL cross the wrist extensors

Materials for De Quervain's

- Alcohol swabs & Band-aid
- 3ml syringe
- 25G needle, not too long or short (?Larger needle to draw up)
- Kenacort 40mg/ml
- Lignocaine 1%

Mark skin over 1st dorsal compartment with nail indentation
Clean skin with alcohol swab, have Band-aid prepared & close by
Draw up about 15 – 20mg of Kenacort (0.5ml)- studies use 40mg!
Draw up equal amount of lignocaine (mixing bubble)
Needle to skin, talk to patient, tell them to inhale as you penetrate to the periosteum, pressure on the plunger and slightly withdraw stopping when plunger start to depress, inject contents, pull out the needle and cover with Band-aid.
Review in two weeks – repeat if partial relief

Dry needling for “spot pain”

Spot pain: possibly an area of neural hyperactivity

- Found in skeletal muscle and their tendons; the capsules and ligaments of joints; the periosteum; the skin
- It seems that a marked increase in the C nerve fibre sensitivity develops (ill defined, persistent, dull ache)
- Exquisitely tender spots
    - latent (asymptomatic till pressure)
    - overt with local and/or referred pain

Cause? I have no idea – trauma, scars, viscera, nerves

Caution the patient that they may experience a flare

How do you decide?

Action follows history – dull aching pain

You will recognise the exquisite pain with touch

Keep an open mind about differential diagnoses

Just do it – what is the possible harm?

Generic ones of bleeding, infection, trauma

The attraction of dry needling can be the **INSTANT** effect

(The addictive effect of an irregular ratio reward)

- the pain is gone or improved or ISQ
- It is a diagnostic and treatment tool

General practice is about living with uncertainty

Deep or shallow

- It is easier, safer and just as effective to insert the needle into the tissue overlying the spot pain **(*Baldry, page 93, ISBN: 0-443-04580-1*)**
- A-delta fibres are present mainly but not exclusively in the skin and just beneath it
- The hypothesis is that A-delta fibres evoke activity in the CNS which reduces the afferent activity of the C-polymodal nociceptor fibres (Gate Theory)
- The immediate effect supports a neurogenic mechanism

Technique

- Wash your hands
- Acupuncture needle, solid, 25mm disposable
- Insert 5-10mm immediately over the ‘spot pain’ to so that the A-delta and C-fibres project to the same dorsal horn segment
- Due to sensitisation often no additional manipulation of the needle is needed to evoke the same spot pain your palpation has elicited
- Leave in situ for about 30 seconds and remove
- Repeat the palpation

Responses

1) The patient often guards, & then realises that there is no pain & is now confused/amazed

- No further action needed, review for 3rd point

2) Pain is less

- Reinsert needle, leave in situ for up to 2-3 mins

-Very occasionally a further insertion for a longer time is needed

3) Pain is worse – need a shorter insertion time

4) Pain is unchanged – bad luck, either back to the drawing board or plug on as some will respond after several treatments

Follow up

In chronic pain – see **one** or two weeks later
In acute pain – see in another 2-3 days

The "*hole in one*"- pain gone with one Rx, rare but memorable
Or a "flare" for a day or two can occur, but if you have cautioned the patient then this is not a problem.
(However, best to reduce the stimulation on subsequent visits)
How many visits? – *Arbitrarily a Par 5*
Once an improvement occurs, then further sessions enhance this.
Be comfortable with this concept, *you are not over servicing*.

On the contrary, it is amazing how repeat visits focused on a single issue may solve the pain, either by the needling or you get more information and this information gives you the solution.

Number of sites to be needled

- Needle every *active* spot pain
- One spot at a time on the first Rx visit and for *strong reactors on subsequent Rx visits*
- For others you will learn to have several needles in situ simultaneously at follow up Rx sessions
- Systematically search for the tender spots
- As many as 12-15 spots can be dealt with
- Conclude by reviewing the spots and test the range of movement if the adjacent joint is restricted

The End

P.S. Diploma of Musculoskeletal Medicine

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