DUPUYTREN'S CONTRACTURE

It Is a condition of palmar fascia is due to proliferation and contracture of the fascia leading to deformities of the finger.

Clinical Features

Common in Caucasian males

Incidence: 70 yrs: 30% (<50: 3%)

Contribution of risk factors:

Family history, 4 fold.[AD trait]

Cirrhosis: 4 fold [Free radicals]

Alcoholism: 2 fold.

Epilepsy: 2 fold.

Smoking: strong association

Diabetes

Fingers can be asymptomatic or may be symptomatic.

Washing face

Combing hair

Placing hand in the pocket

Placing hand in glove

Racquet sports and golf

Deformity assessment

Inspect the dorsal aspect of the hand for Gerrod's pad at MPJ and PIPJ

Palmar skin may show cord with puckered skin

Simplest way is to ask patient to extend fingers, then measure MPJ and PIP with a goniometer

Assess range of movement of small joints of the hand.

Secondary boutonniere may be present.

Tabletop test [Hueston]: positive when the hand cannot lie flat.

Check for sensation [may be more important in revision situation]

Allan test: check contribution of digital circulation.

Diathesis

Young men with a family history are more at risk

Dupuytren's elsewhere: Gerrod's knuckle pads

Ledderhosen syndrome (plantar fibromatosis) 5%

Peyronie's disease (penis) 3%

Luck's classification

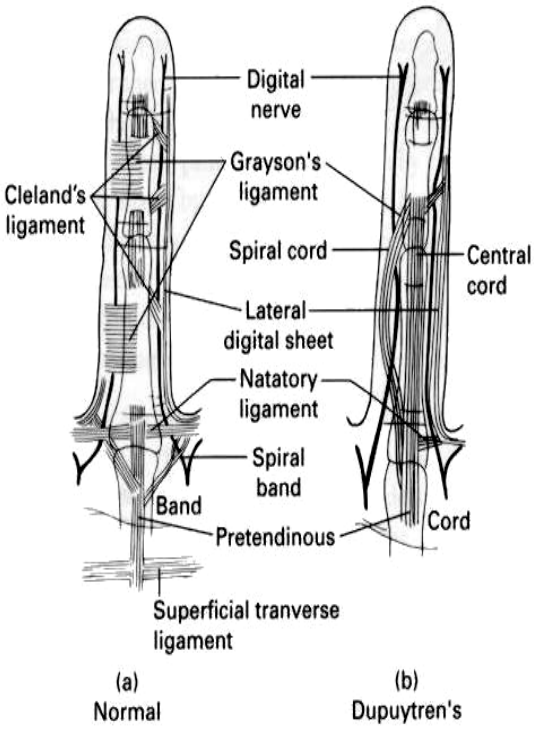
I Proliferative stage	Intense proliferation of myofibroblasts
II Involution stage	Alignment of the myofibroblasts along lines of tension
	More collagen than cells
	More collagen III than I type

[]Collagen in normal tissue has 10% Type III collagen in contrast to Dupuytren's tissue which has 30% type III collagen]

III Residual stage	The tissue becomes mostly devoid of myofibroblasts

Pathology

'Band' = healthy fascia; 'Cord' = diseased fascia.



Aetiology

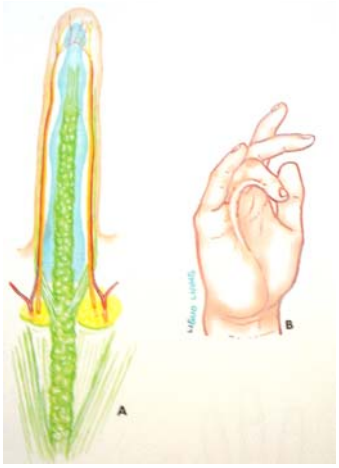
1. Oxygen free radicals stimulate myofibroblasts proliferation
2. Increase in Type III collagen
3. Increased expression of PGDF-B

Pretendinous cord

Involvement of pretendinous band
Neurovascular bundle not displaced
Causes flexion of MPJ
Good out-come with surgery

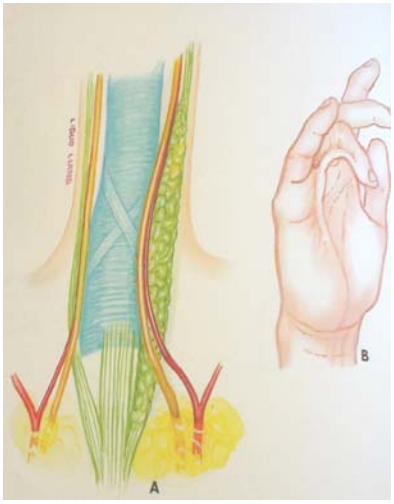
Central cord

Starts in the pretendinous band and ends at the fibrous flexor sheath and bone of the middle phalanx.
Neurovascular bundle not displaced
Deformities: MPJ and PIPJ flexion
Outcome better than spiral cord and not as good as pretendinous cord



Spiral band

Pathological thickening of : Pretendinous band + Spiral band + Lateral digital sheath + Grayson's ligament ending in the middle phalanx
Deformities: MPJ and PIPJ flexion
Neurovascular bundle is displaced medially
Surgical outcome is not good



Natatory ligament causes web space contractures.

[I web space]

Fibres not involved

Superficial transverse ligament

Sagittal fibres

Cleland's ligament

TREATMENT

1. When not progressive leave it alone.

2. Educate primary-care physicians to ensure that referral is recommended before severe contractures become established.

3. Painful Nodule: NSAID

Intralesional steroids

4. Surgery

MPJ: any deformity may be fully corrected; however, PIP flexion contracture can be refractory.

The tabletop test provides a good guideline for consideration of surgery surface.

Patient needs to know before consent that:

Recurrence rate is 50%. When it recurs, the deformity may be milder than the original deformity

Skin necrosis and infection may occur.

Chronic regional pain syndrome arises in 1-2% of cases.

Digital nerve damage can occur in 1-4%, more so in revision situation.

Types of surgery

1. Percutaneous tenotomy:

Popular in Europe

Good knowledge of anatomy is required, to minimize nerve damage

It is preferable in elderly patients with co morbidities

2. Partial fasciectomy: safe and commonly performed.

3. Radical fasciectomy: rarely done.

4. Excise and thick skin grafting [Houston].

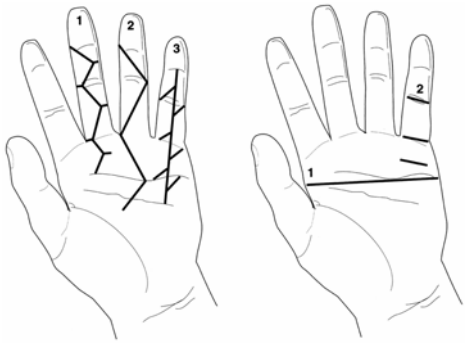
5.Open technique [McCash]. Excise Dupuytren's tissue with the skin. Leave the wound open.

6. Amputation: in some cases of severe recurrent contracture

or, more rarely, severe primary contracture.

6. PIP joint fusion may be a reasonable alternative.

Common Technique



Loop; Bruner or Z plasty

Proximal identification of neurovascular bundle,

to protect the nerve

Resect only the contracted cord

Haemostasis: tourniquet

Splint: night splints for six weeks

Basic skin incisions

1. Longitudinal incisions: multiple Y-to-V advancement flaps
2. Bruner zigzag incision
3. Midline longitudinal incision closed with Z-plasties.

Possible complications

1. Digital nerve division < 5%.

2. Ischaemic digit.

3. Haematoma.

4. Skin loss due to necrosis

5. Infection (treat with early debridement)

6. Scar contracture along longitudinal incision [avoid longitudinal incision]

7. Joint stiffness from violation of the volar plate

8. CRPS - look for swelling, pain, stiffness, and discoloration.

Causes: neuroma formation, nerve scarring at the incision site, excessive wound tension;

9. Secondary carpal tunnel syndrome (from oedema)

10. Secondary trigger finger

11. Recurrence: 50% [1/3 recurrence and 1/3 extension].

Plantar Fibromatosis

Often painful thickened fascia with nodules

0.5-3 cm in diameter.

Age: 20-60 years

More common in men than in women

Bilateral in 25 % of cases.

Predisposing conditions:

Diabetes mellitus

Seizure disorders

Treatment:

Leave it alone

Occasionally: Wide resection of nodules with surrounding normal margin