

Pathophysiology

- Direct penetration or haematogenous spread
- Inflammation- Tension
- Impaired circulation
- Microvascular thrombosis
- Ischaemia
- Necrosis and sloughing off of tissues

Bacteriology

- Commonest organism is Staphylococcus aureus = 50%
- Others Streptococcus
- Gram negative
- Mixed cultures
- Viruses
- Fungi
- Tuberculosis

Clinical features

- Throbbing pain
- Raised local temperature
- Redness
- Tenderness
- Swelling
- Illness and fever
- Limitation of flexion of fingers

You are using the device audio.

Investigations

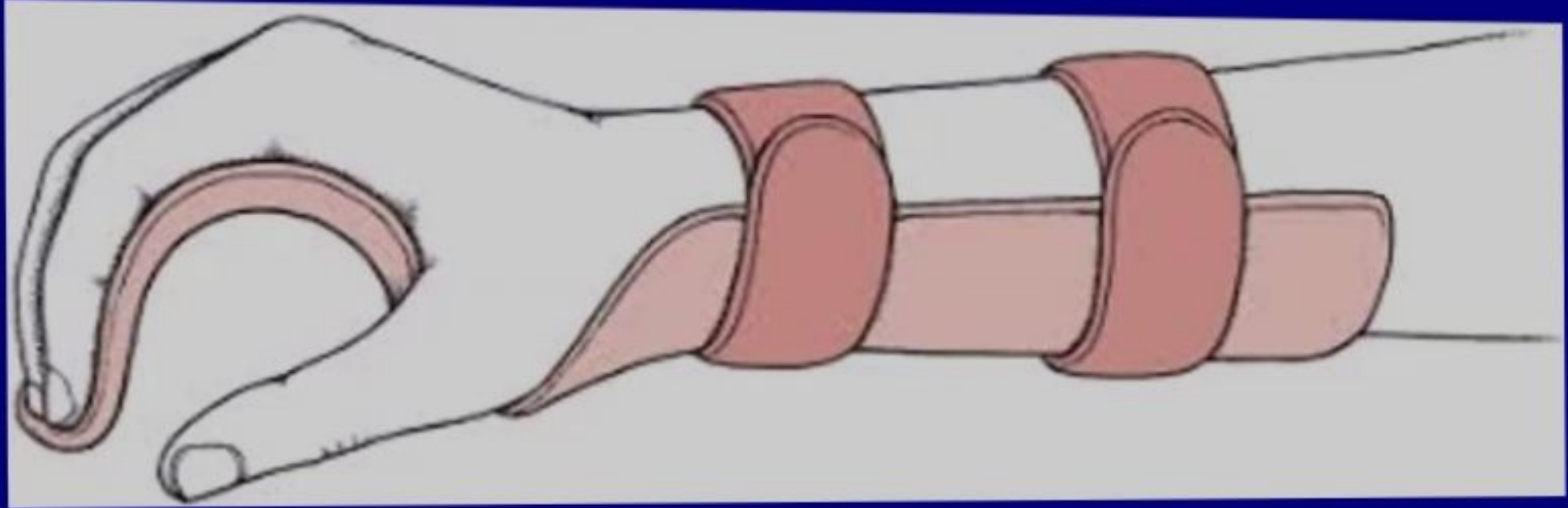
- Haemogram
- Pus aspirate for C/S
- Xrays
- Tissue biopsy
- Biochemical analysis

Differential Diagnosis

- Gout
- OA
- Tenosynovitis
- Soft tissue calcification
- Stenosing tenovaginitis
- Peripheral vascular disease
- Tumors
- Allergic reactions
- Tendon rupture . . .

Treatment- General guidelines

- Antibiotics
- Analgesia
- Debridement
- Splintage
- Elevations
- Dressing
- Rehabilitation



Surgery principles

- Anaesthesia
- Bloodless field
- Incisions- do diamond shaped to avoid early closure
- Debridement – break all loculations

Pus location

- Subcuticular-beneath epidermis
- Intracutaneous
- Subcutaneous
- Subfascial- beneath the palmar aponeurosis
- Collar stud abscesses

When do you drain the pus?

- 1- in presence of pus always incise over the point of maximum tenderness, if difficult to locate use a probe.
- 2- pus is present even if not seen, if
 - (a)the patient complains of throbbing pain
 - (b)has lost a night's sleep
- 3-do not wait for fluctuant swelling







Complications

- Chronicity- due to
- Persistent drainage
- Joint stiffness
- Spreading infection
- Gas gangrene
- Gangrene

ACUTE PARONYCHIA

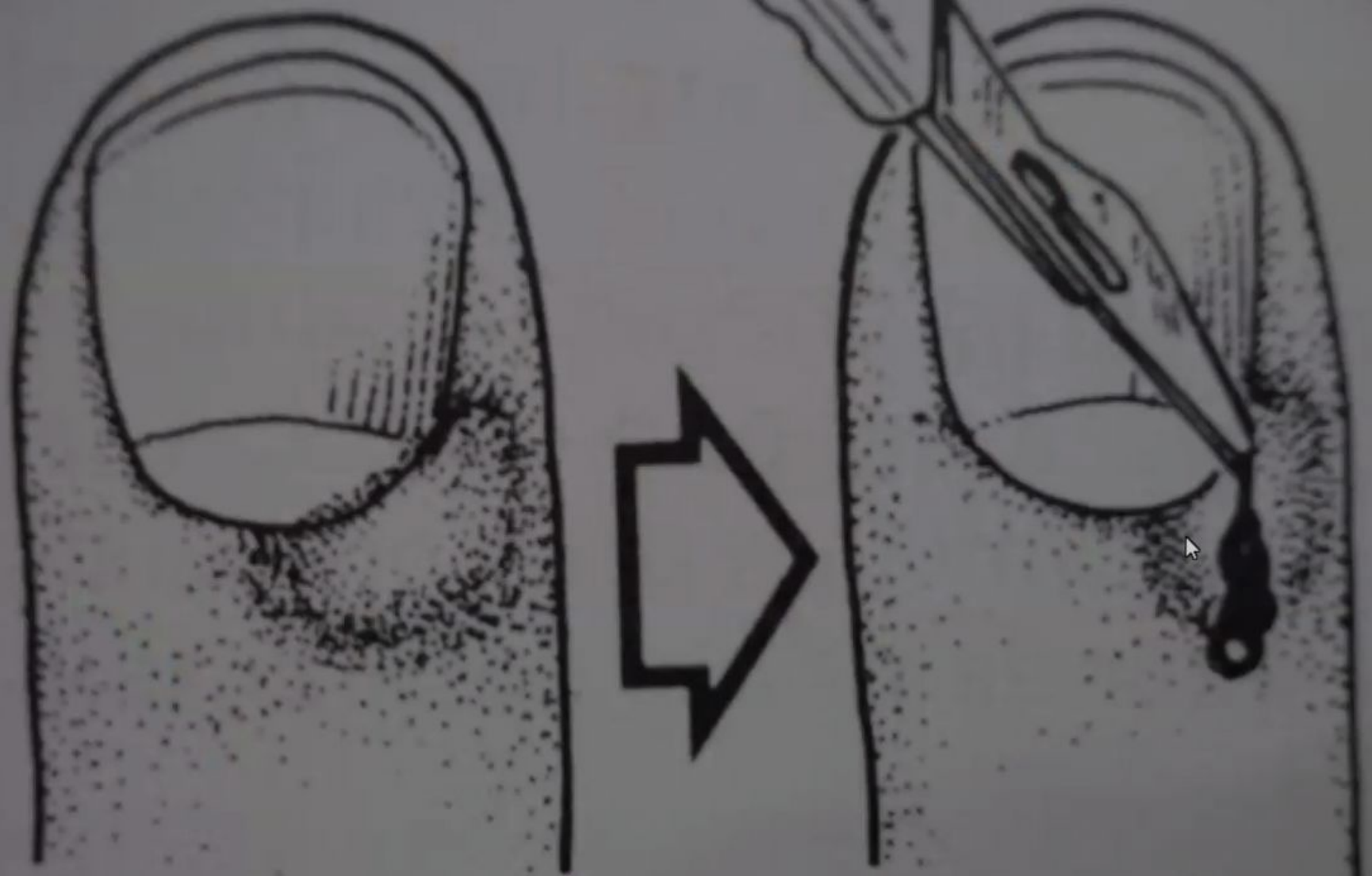
- Commonest hand infection
- Due to manicure, skin pricking
- Red, swollen, and painful, with purulent drainage around the margin of the nail.
- Aetiology- Staph. aureus



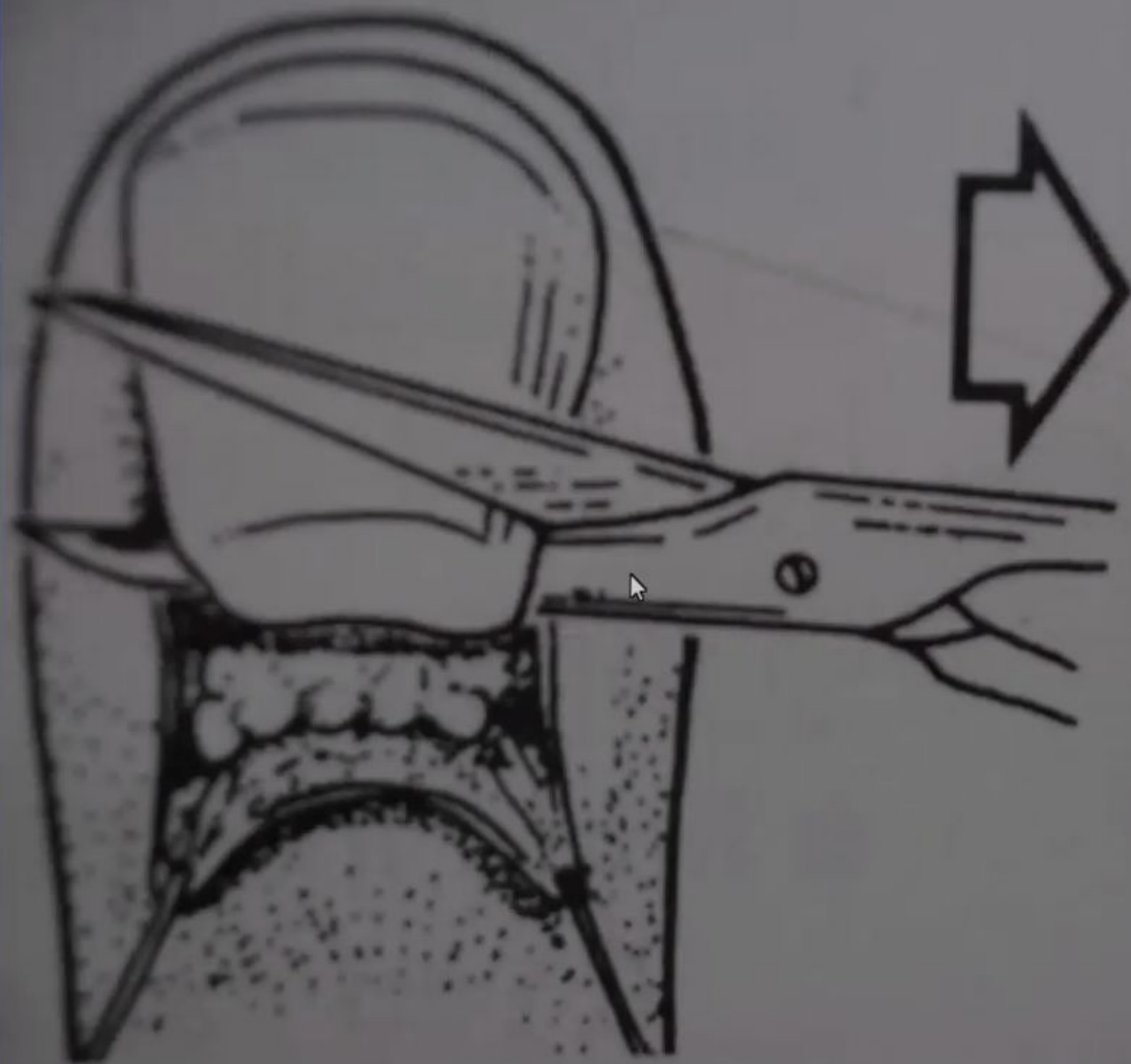
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INFECTION ON SUPERFICIAL TO
THE NAIL ONE SIDE ONLY



CIAL AND DEEP TO THE NAIL ON BOT

Chronic paronychia

- Regular contact with water
- Possibly fungal infection

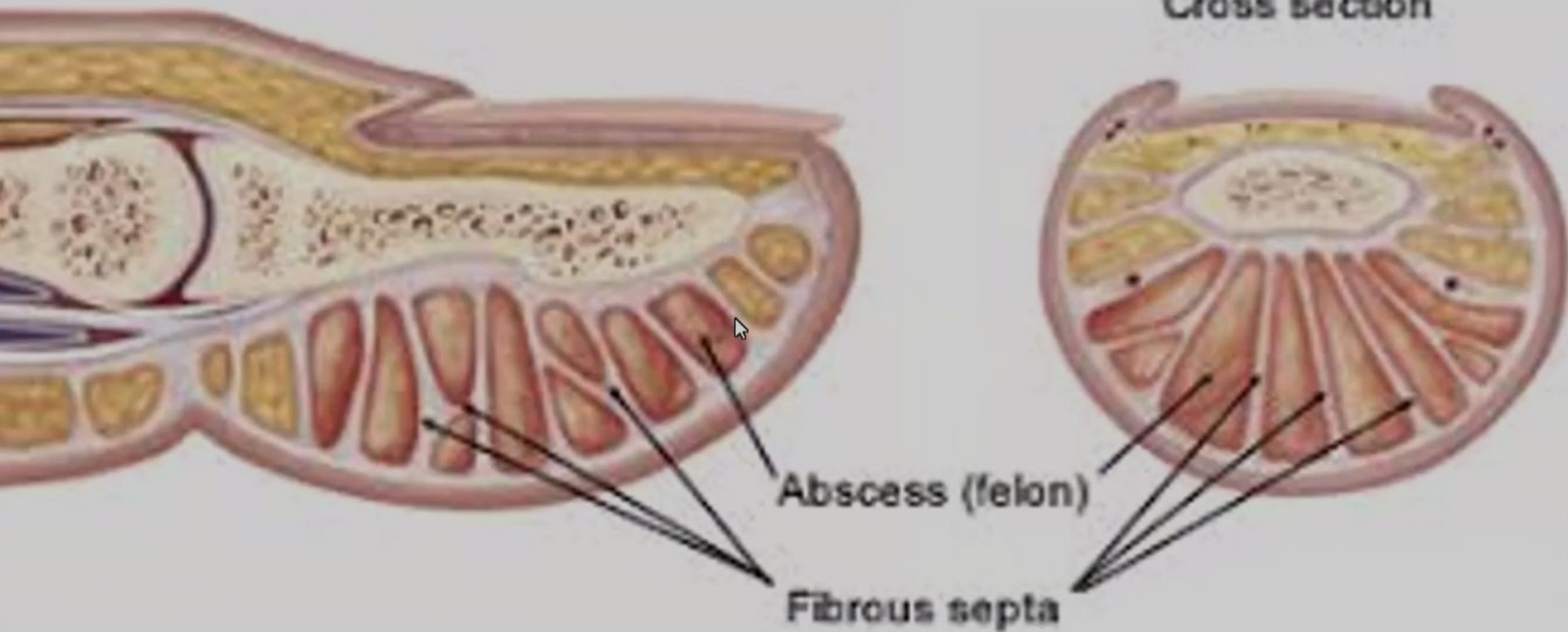
Chronic paronychia



FELON

- Infection of the pulp space distal segment of finger.
- Swollen, red and extremely painful

Cross section



Felon







Tendon sheath infection

- Kanavel signs:-
- 1-finger held in fixed flexion deformity
- 2-The finger is uniformly swollen and red
- 3-There is intense pain on attempted extension
- 4-Tenderness is present along the line of the sheath

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Cont.

- Pyogenic tenosynovitis is uncommon but dangerous.
- Follows a penetrating wound
- Pressure builds up in the tendon sheath risking ischaemia and leading to tendon necrosis.

Treatment

- Started as soon as possible
- Hand is elevated
- Splinted in safe position
- Intravenous antibiotics
- If no improvement in 24hrs, surgical intervention.
- 2 incisions are made ,at proximal and distal end of sheath.



Cont.

- Thumb or small digit - involved may spread to the wrist where they communicate leading to a horseshoe infection.
- Sheaths of the middle three fingers extend to the palm but not the wrist.
- Common organisms are streptococcus and staph,
- Serious infection and needs to be drained immediately.

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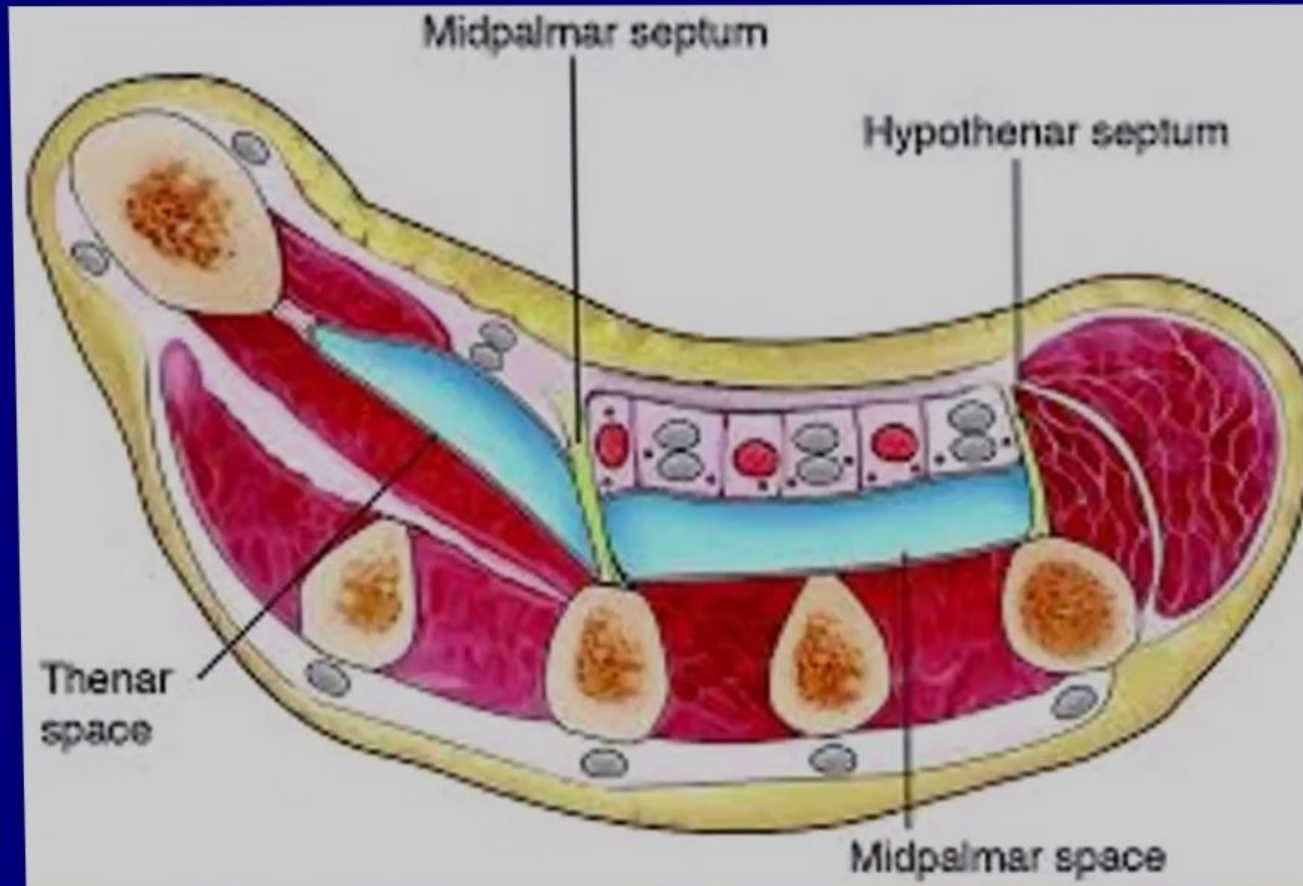




Cont

- Then catheter passed thro for irrigation with saline, from proximal to distal.
- Irrigation is done 3-4 times/day for 2 days

DEEP PALM INFECTIONS





MID-PALM INFECTIONS

- Very severe pain, gross swelling, loss of normal palmar concavity and a fixed posture of the fingers.
- Hand dorsum bulges like an inflated glove.
- Due to oedema of periarticular structures of the MP joints and voluntary splinting
- Preserved finger movement



Deep Space Infections

Midpalmar Space Infections

- Clinical:
 - usually due to direct penetrating trauma, rupture of tenosynovitis
 - loss of palmar concavity, dorsal swelling, tenderness volarly



Cont.

- Infected by direct penetration or spread from a tendon sheath infection.
- Antibiotics are started as soon as possible.
- Splinting
- Drainage of pus is directly over it, follow skin creases and avoid nerves, vessels and tendons.



THENAR SPACE INFECTION

- Less common
- Part of the deep palmar space and is in the lateral aspect bounded dorsally by the adductor pollicis and palmar fascia anteriorly. Medially separated from mid palmar space with a fibrous septum
- Tenderness and swelling over the thenar area

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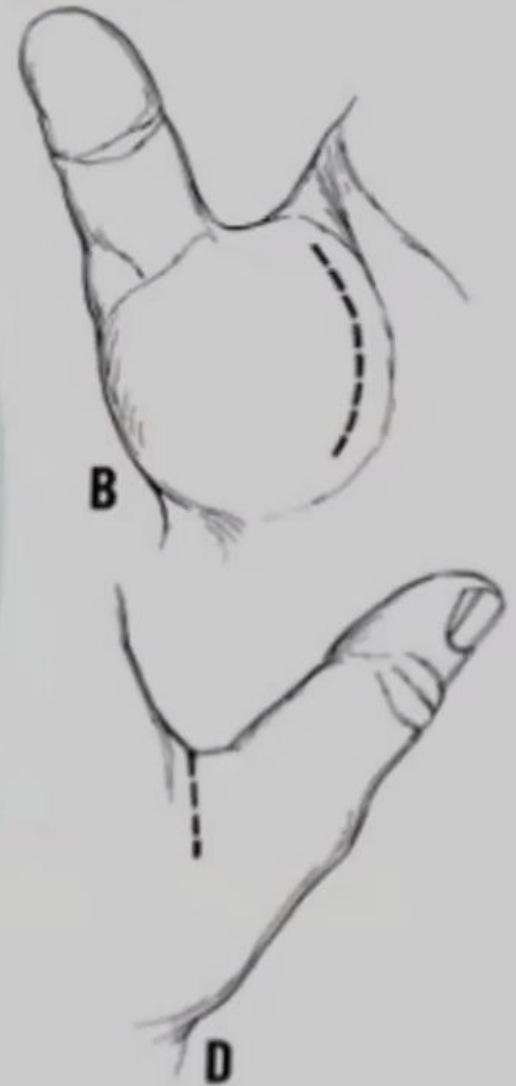
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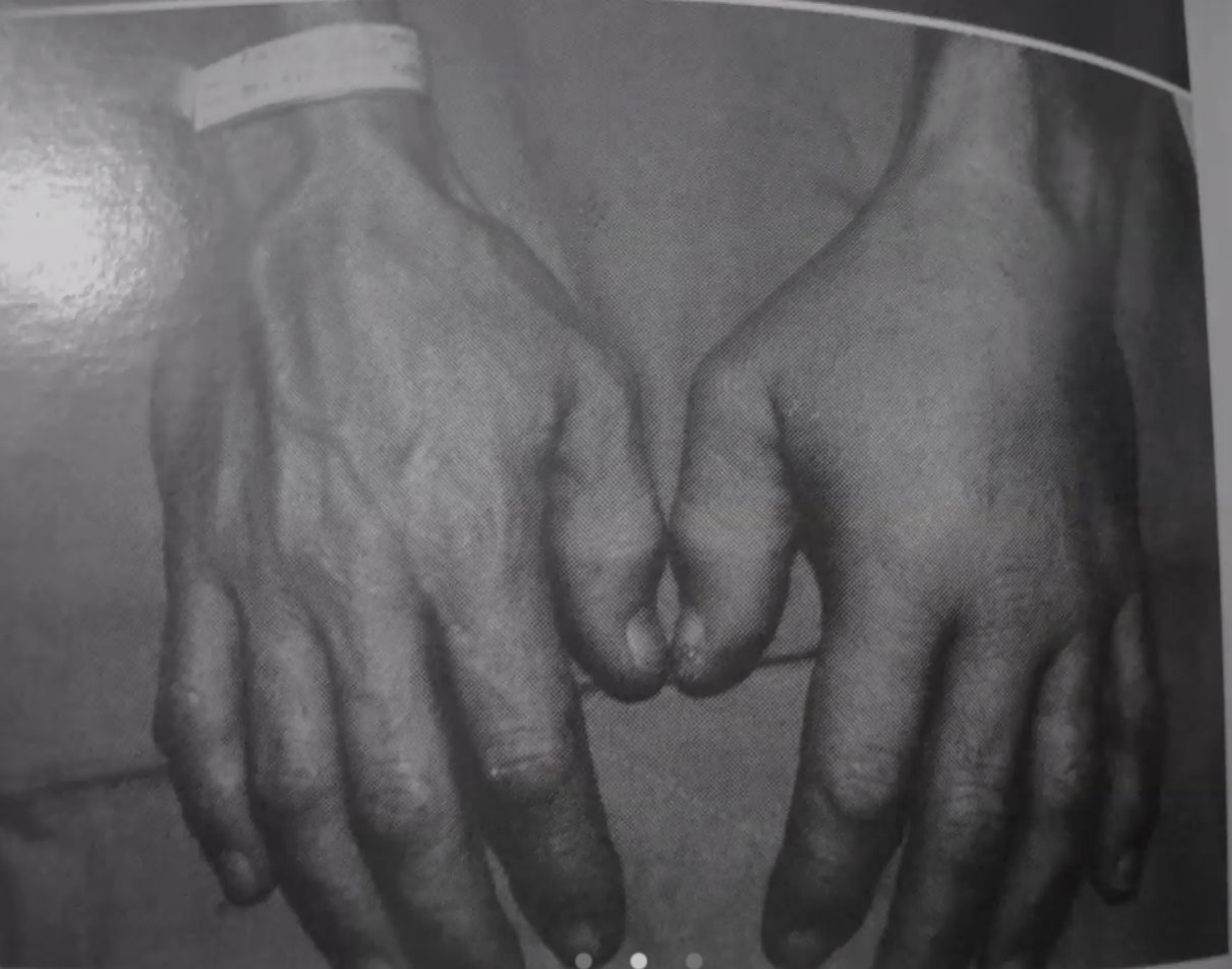
Thenar Space Infections

Treatment

- Drain via volar or dorsal incisions in the 1st web space or both:
 - Identify neurovascular structures
 - unroof the adductor fascia to open the abscess cavity
 - irrigate & debride
 - catheter in volar incision & close; penrose in dorsal incision & close
 - compressive dressing & plaster splint







Septic arthritis

- Suspected in presence of a wound overlying the finger joint.
- Still septic arthritis can develop without such a wound
- Signs –swelling marked
 - -restricted motion
 - - instability
 - - crepitus

Cont.

- -Discharging sinuses
- Radiological changes
- -soft tissue swelling
- -decalcification of the *juxta-articular bone*
- -narrowing of joint space
- -Progressing fragmentation of bone ends
- *this are late signs

Treatment

- IV antibiotics, splinting
- Drain the joint thro a mid-lateral incision or dorsal incisions.

Webspaces infections

- Clinical presentation

- The involved adjacent digits are held apart from one another in a characteristic abducted posture.
- This clinical presentation, combined with prominent dorsal hand swelling and a tender palmar web space, usually makes the diagnosis clear



Cellulitis

- Dramatic in onset.
- Acute onset of swelling, redness and pain following a minor injury
- Extensive puffy redness with streaks of hand and lymphangitis on the forearm
- Aetiology:- Haemolytic streptococcus.
- Rx- Antibiotics, rarely I&D



Human bite infections

- Common over the MCP joints dorsum.
- Clenched fist blow strikes a tooth in fight.
- Wound appears benign initially, but usually inoculated with a potent mixture of bacterial flora eg *Eikenella corrodens*, *Corynebacterium* species, Staph and Streps.



Treatment

- All bite wounds should be assumed infected.
- Debridement
- Amoxicillin/Clavulanate plus metronidazole

Animal bites

- Commonly due to cats or dogs
- Combination of bacteria including *Pasteurella* species (75%, 50%), *Moraxella*, *Corynebacterium*, anaerobes
- Treatment: Antibiotics, Debride

Persistent infection

- Inadequate drainage is the commonest cause
- Presence of foreign body
- Unusual organism like Mycobacterium

Osteomyelitis

- Infection spread to the bone
- Pus discharge persists for long
- x-rays- bone changes
- Debridement and Sequestrectomy
- Remove sequestra as necessary.

Take home message

- Hand infection is common.
- May be mild or severe.
- Prompt and accurate diagnosis
- Effective treatment prevents chronic sequelae.