

- common in people who are manual workers & housewives
- 90 % **Staphylococcus aureus**
- **Polymicrobial infections, Gramnegativ organisms and anaerobic bacteria** are documented



- **Mode** of entry • minor inj. & Punctures (foreign bodies)

Clinical Picture “in general” :

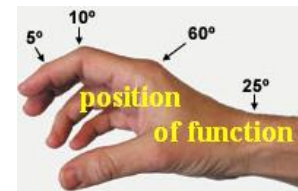
- Pain, swelling & fever .
- At the site : according to point of max. tenderness rather than area of oedema !
- Investigations:
- Plain X-ray • if F.Body . is suspected
- **WBC , CRP and BI.** Sugar testing(in recurrent Infections)



Treatment : (Generally):

1- Antibiotics are immediately started e.g. Flucloxacillin, erythromycin, amoxycillin clavulanic acid & 1st and 2nd generations of cephalosporins. **Gentamicin** is added when there is a history of injected **drug use**.

2- Elevation & if needed, immobilization in position of function.

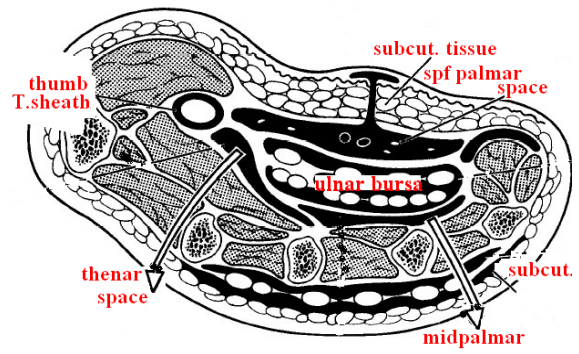


3-If there is suppuration or No response to one day intensive antibiotic therapy. Drainage of pus. **Drainage** releases **pus** and improves the **venous return** by decompressing the tension.

In case of Acute paronychia or Felon • local ring anaesthesia (without adrenaline) , general anaesthesia is preferred

- Tourniquet & Elevation to operate in bloodless field.
- Appropriate skin incisions & sinus forceps
- **send the swab for Culture & Sensitivity**
- Soft rubber drains e.g. piece of surgical glove
- * Post-op. Elevation, Physiotherapy & Dressing.

Hand infection may be divided for :



[I] Cutaneous & sub-cutaneous infections:

- Paronychia
- Pulp Space Infection (Felon)
- Web Space Abscess

[II] Fascial spaces infection : Deep Space Infection i.e.

- midpalmar space,
- thenar space and



[III] Infection of the tendon with its synovial sheath "tenosynovitis".

[IV] infection of the bone & joint (septic arthritis).



[V] miscellaneous infections. Cellulitis and Lymphangitis

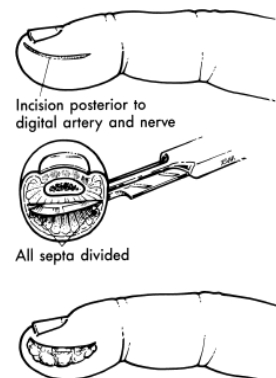
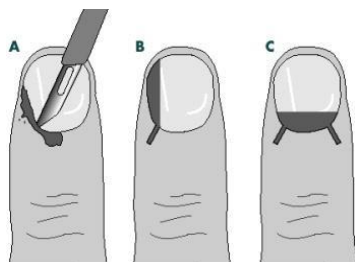
1/ ACUTE PARONYCHIA

- Most common infection in the hand
- Localized superficial infection or abscess of the lateral nail fold.
- Typically is due to superficial trauma (e.g. hangnails, nail biting, dishwashing).
- Paronychia in children often is the result of finger sucking



PARONYCHIA (TREATMENT)

- Early Cellulitis : Soaks (Soften by soaking), elevation, antibiotics
- Fluctuant – all of the above, plus...Drain .May need anesthesia (digital block)
- If severe infection with purulent drainage beneath nail, requires removal of a portion of the nail .Follow up 24-48 h. Most resolve in 5-10 days.

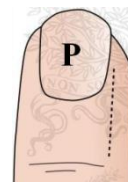
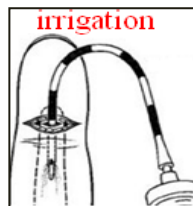
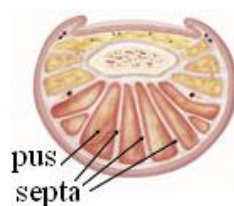


2 / -PULP SPACE INFECTION (FELON)

- Anatomy : The distal palmar phalanx is containing a tough fibrous septa, resulting in a closed compartment at the distal phalanx, which helps prevent the proximal spread of infection.
- **Mode** of infection : Infection typically is due to direct inoculation of bacteria by penetrating Trauma (foreign body) but may be caused by hematogenous spread and by local spread from an untreated paronychia.

Treatment by surgical method :

- The best is a longitudinal incision over the area of greatest fluctuance.
- To avoid penetration of the tendon sheath, the incision should not extend to the distal interphalangeal crease.



3/ DEEP SPACE INFECTION

- These are infections in the potential deep spaces of the hand, i.e. midpalmar space, thenar space
- Infections in these spaces may follow haematogenous spread, penetrating injury or rupture of pus from a **flexor tendon sheath**.
- There is swelling, tenderness, and occasionally fluctuance of the distal volar forearm. Digital flexion may be painful



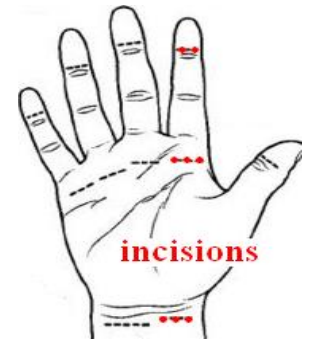
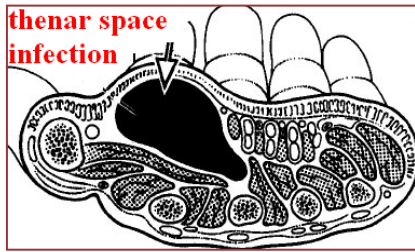
clinical picture of deep space infection :

- **In midpalmar space infections**, the hand loses its normal palmar concavity with tenderness and induration over the palm. There is dorsal hand swelling and limited and painful motion of the middle and ring fingers.
- **In thenar space infections**, the thenar region is dramatically swollen and exquisitely tender. The thumb is abducted due to the increased pressure and volume in the thenar space. Motion of the thumb and index finger is painful.

Surgical treatment :

(A) Volar transverse approach to the thenar space. Nerve injury is a potential complication. (B) Thenar crease approach. Nerve injury can result from this approach. It has the added disadvantage of limited drainage of the space behind the adductor pollicis. (C) Dorsal transverse approach. A contracture of the web space can result if this incision is placed too close to the edge of the web. (D) Dorsal longitudinal approach to the thenar space.





MIDPALMAR SPACE INFECTIONS

Collar stud abscess resulting from stabbing of the thenar crease with an indelible pencil. The deep component of this abscess was in the midpalmar space which became tender and swollen. The middle finger is flexed because of involvement of its tendon sheath.

OPERATIVE METHODS

(A) Transverse distal palmar exposure of the midpalmar space. (B) Approach to the midpalmar space through the lumbrical canal. (C) Combined longitudinal and transverse approach. (D) Longitudinal approach to the midpalmar space.

HYPOTHENAR SPACE INFECTIONS

Approach to the hypothenar space

CHRONIC INFECTIONS

- Atypical Mycobacterial infections
- *Tuberculosis*
- *Leprosy*
- *Fungal infections*
- *Viral infections*
- Algal, protozoan, and parasitic infections

COMPLICATIONS OF HAND INFECTIONS

- 1- Necrosis of Tendons
- 2- Skin Loss
- 3- Secondary Haemorrhage
- 4- Persistent Oedema
- 5- Lymphangitis
- 6- Stiffness, Ankylosis and Contractures
- 7- Osteomyelitis and Septic Arthritis



Bites:

Animal bites: by dogs, cats or other animals may become infected, often by staphylococci.



Human bites: are more prone to infection(staph., strept., anaerobe) than animal bites.

R→ debridement, AB, splint, elevation. Look for tendon laceration, joint penetration.