Nails: Tips and Pearls

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Proper Nail Exam

1) Always examine all 20 nails
2) Remove nail cosmetics and artificial nails before the exam
3) Good lighting with no glare is essential
4) Digits should be relaxed and not pressed against any surface
5) Squeeze the digit to see if this changes the appearance

• C. R. Daniel, Cutis, 1980
• C. R. Daniel, Dermclinics, 1985
Op Permit

- Long term paresthesia or numbness and cold sensitivity are common sequelae of nail surgery.
- Scarring, split nail, pterygium, onycholysis, and erythronychia may occur.


Nail Surgery Tips Continued

1) Clean with alcohol then chlorhexidine to best disinfect nails.
2) Remember extensor tendon under proximal matrix
3) Hold 4X4’s under digit to decrease chance of stabbing one’s own fingers
Tourniquets

a) Penrose drain
b) T-Ring
c) Cut tip of sterile glove and role it back – acts as a tourniquet and sterile field.
d) Never use rubber bands
e) Leave on no more than 20-30 minutes

Some Important Instruments for Nail Surgery

1) Dual action nail nipper
2) Nail elevator
3) Freer septum elevator
4) English Anvil Nail Splitter
5) #67 Beaver blade
Some Nail Biopsy Tips

1) Thick nails – soak in H₂O 1st for at least 30 minutes

2) Use a #11 blade to make a hole in the nail plate before suturing through the nail plate. Suture through skin 1st, then through the plate. This is to help avoid keratin granulomas which are more common if the suture goes through the nail plate 1st.
Punch Biopsy (Other Important Points)

1) No suture is usually needed for a 2 mm punch. Ok to use aluminum chloride if needed.
2) Occasionally a small focus of onycholysis results from biopsy of nail bed.
3) Be sure not to bisect matrix.
4) If biopsying matrix, the punch should be entirely within and surrounded by matrix.

Punch Biopsy (Other Important Points)

5) 3 mm punch through nail plate to periosteum. If plate is thick, pare it down first.
6) Can use 5 or 6-0 vicryl- rapidly absorbed in matrix and nail bed.
7) If using nylon sutures, leave in place up to 2 weeks.
• Ropivacaine 1% is a model anesthetic for most nail surgeries.
  1) Inherent vasoconstrictive properties – diminish post operative bleeding
  2) Fast onset of action lasting 2-6 hours

Jellinek, Nails 4th Ed, 2018

• 5-0 rapidly absorbable polyglactin 910 suture is preferable
Foreign Body Reaction

Once the rigid nail spicule penetrates the surrounding soft tissue, a splinter-like foreign body reaction may occur. Then swelling, granulation tissue and sometimes secondary infection may follow.
Management Early

Gently push wisps of cotton under the involved ingrowing nail using a 2mm nail elevator or 1-2 mm curette. This may be repeated as needed. Apply 30-40% urea to nail plate twice a day. Also, a topical high strength corticosteroid can be applied 2-3 times a day for up to 10 days.

Cotton Nail Cast

• A simple solution for mild and painful lateral and distal nail embedding
  1) Conservative method for mild nail embedding
  2) Avoids surgery in most patients
  3) 10 patients
relief noticed results in less than 24 hours, whereas the other 4 (50%) noticed relief at 72 hours. Eighty

Figure 1. Cotton nail cast application. Using forceps, the cotton is placed between the nail plate and the nail bed in a U-shape, ensuring that the lateral fold is protected from the spicule.

DERMATOLOGIC SURGERY

Figure 2. Cotton nail cast. Once the cotton is in place, cyanoacrylate is used to harden the cotton until a cast is formed.
COTTON NAIL CAST

4) Cast remained in place until it fell out (as long as 2 months)
5) Fast pain reduction, prevented surgery in 80%
6) Only 2 month follow-up

Gutierrez, J Dermatol Surg 41: 2015

Woo S, Kim H: Surgical Pearl: Nail edge separation with dental floss for ingrown toenails.
Acrylic Affixed Gutter Splint and Anchor Taping

1) Non invasive, simple, inexpensive
2) Elastipore or Elastican tape
3) Ingrown nails
4) Hypertrophic nail folds
5) Nail fold granulation tissue

Basic taping/anchor taping

before taping basic taping anchor taping

Preoperative Preparation

1) The foot has a large resident microbial population.
2) Use of alcohol and povidone iodine in pre-op treatment helps to lower the bacterial load.


Surgery - Chemical Matricectomy

With a DRY BLOODLESS FIELD, apply the matricectomy chemical using Calgiswabs (urethral swabs with a small cotton tip and metal handle that can easily be bent to match the shape of the groove housing the proximal matrix.) Or one can use a nasopharyngeal swab. The proximal nail fold(s) may be flared back to better expose the proximal matrix.
Surgery - Ellman Electrode

One side is active and the other is coated with Teflon. After electrodessication is done to the offending matrix, curettage is done.
Ingrown Toenail Prevention

1) Cut toenails straight across, don’t round at the edges or tear the nails
2) Shoes
   - No narrow toed shoes or higher heels
   - Wide feet use
     a) Altra - sport shoe
     b) SAS or Rockport - dress shoe
Ingrown Toenail Prevention

3) See podiatrist or orthopedist for anatomical problems, pronators, supinators, etc.
4) No stockings tight at the toe
5) See your doctor early for signs of recurrence
• The Disappearing Nail Bed (DNB) was recently named while studying onycholysis. We first wrote it up in 2005.


• We then wrote it in context of grading Onycholysis and Chronic Paronychia.

DNB STUDY

1) The purpose was to gather additional information about the DNB including some possible associations/causes.
2) In my private clinic, all consecutive patients were asked to participate. The first 540 patients to agree were included.


Disappearing Nail Bed Summary

1) When chronically uncovered by nail plate, the nail bed may change.
2) It may form a granular layer.
3) Recalcitrant onycholysis may result and function may be diminished.
Disappearing Nail Bed Summary

4) It is more common in men and older individuals
5) Onychomycosis is the most common cause in toenails
6) Nail biting is the most common cause in fingernails
7) More study is needed

The Nail and Hair in Forensic Science
by

C. Ralph Daniel, BM Piraccini,
A. Tosti.
LEUKONYCHIA IS COMMONLY SEEN AND MAY BE THE MOST LIKELY COLOR CHANGE FOUND

1) Apparent or real
2) Congenital or acquired
3) Location, nail plate, or elsewhere
4) Endogenously induced or exogenously induced
5) Pattern – partial, total, striate punctate, etc.

Reference

Splinter Hemorrhages

• Trauma is by far the most common cause of splinter hemorrhages. At times, certain presentations of splinter hemorrhages should make one consider a systemic etiology, particularly bacterial endocarditis.

Splinter Hemorrhages

• Their simultaneous appearance in multiple nails is more frequently associated with systemic disease.
Splinter Hemorrhages

• Also, their occurrence closer to the lunula as opposed to the distal nail plate seems to be more directly correlated with systemic pathology.

CLUBBING IN CHILDREN

1) Clubbing is one of the most common signs of heart disease in children; especially infective endocarditis.
2) Acquired clubbing in kids with Crohn’s Dz and U.C. – presence and severity may be indications of Dz severity.

Baran 5th Ed, p314, 2019
Carbon Monoxide

• Pink color in nail bed persists after death.
• Normally cadavers have dusky red to blue color of nail bed.


• THE SPECTRUM OF NAIL DISEASE IN PATIENTS with HIV INFECTION

Daniel, JAAD 27:1992

Summary

1) Brittle nails are an enigma
2) More studies are needed
3) Irritant avoidance regimen
4) Nails shorter
5) Biotin
6) Consider topical treatment
7) Research on ultra structural changes occurring during onychocyte formation will be welcomed to further advance adequate therapy.

The Nail and Koebner-like Phenomenon
by
C. Ralph Daniel, Antonella Tosti, Maltide Iorizzo, Bianca Maria Piraccini
Internat J Dermatol 45: 1372-1373, 2006
Chronic Paronychia 1st study conclusions continued

e) Very strong history of contact irritants/moisture and possibly physical trauma – We have called this a Koebner-like phenomenon.


Candida of the Nails Summary

1) Primary nail Candida infection is unusual and most commonly associated with immunosuppression.
2) Candida of the nails is usually a secondary saprophyte/colonizer
3) Its role as a pathogen in an immunocompetent host is controversial.
Candida of the Nails Summary

4) Treat the conditions that predispose to it.
5) I also treat the Candida but this is controversial.
