Family Medicine CME Course: NAIL DISEASE

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Objectives

• How do we distinguish between a “serious illness” and routine nail problems?
• What disease processes have nail symptoms associated with them?
• What is the best way to diagnose onychomycosis and the treatment for this?
• What new therapies are coming out for onychomycosis?
• When is removal for a nail appropriate?
• When should a family doctor refer to dermatology?
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Overview

• Normal nail structure and function
• Abnormal nail conditions
• Onychomycosis
• Nail surgery
• When to refer
Fig. 70.1 Schematic drawing of the nail apparatus in longitudinal section.
Normal Nail: Anatomy

- Matrix -> nail production
- Nail bed -> nail plate adhesion
- Proximal nail fold -> nail matrix protection
- Growth rate
  - Fingernails: 3 mm/month
  - Toenails: 1 mm/month
Normal Nail: Function

- Protection
- Sensation- tactile discrimination
- Fine motor
- Communication- social, sexual, asthetic
- Scratching, grooming
- Weapon
- Biopedal mechanics
Nail Disorders: Differential Dx

Inflammatory
- Primary Dermatologic
- Systemic Manifestation
- Medication-related
- Infectious
  - Onychomycosis

Neoplastic
- Keratinocytic
- Melanocytic
- Fibrohistiocytic
- Neural
Nail Disorders: Approach

• Shape
• Color
• Distribution
• Location
• Pattern
• Associated signs
  – Proximal nailfold
  – Lateral nailfold
Nail Disorders & Systemic Disease

- Onycholysis
- Clubbing
- Koilonychia
- Onychomadesis
- Beau’s lines
- Pitted nails
- Muehrcke’s nails
- Terry’s nails
- Half-and-half nails
- Red lunula
- Splinter hemorrhages

Onycholysis

- Distal separation of nail plate from bed
- Associations
  - Trauma, exposures
  - Psoriasis
  - Candida, dermatophytes, HPV
  - Tetracycline
  - Hyperthyroid
Clubbing

• Increased nail curvature

• Associations
  – Congenital heart disease
  – Bronchopulmonary: neoplasms, infections, bronchiectasis, CF
  – Cardiovascular: CHF, AA
  – GI: IBD, liver disease
  – Infxn: HIV
  – Endocrine: hypertrophic osteoarthropathy, hyperthyroid
Koilonychia

• Concave nails

• Associations
  – Trauma
  – Iron-deficiency anemia
  – Hemochromatosis
  – Coronary disease
  – Hypothyroidism
Onychomadesis

- Proximal separation of nail plate from bed
- Associations
  - Trauma
  - Poor nutrition
  - Febrile illness (Kawasaki disease, Hand-foot-mouth disease)
  - Drug sensitivity
Beau’s Lines

• Transverse depression in nailplate

• Associations
  – Trauma
  – Poor nutrition
  – Febrile illness (Kawasaki disease, Hand-foot-mouth disease)
  – Drug sensitivity
Pitted Nails

• Pinpoint depressions in nail plate

• Associations
  – Psoriasis
  – Alopecia areata
  – Sarcoidosis
  – Connective tissue disorders
Muehrcke’s Nails

- Transverse white bands (leukonychia) parallel to lunula

- Associations
  - Hypoalbuminemia
  - Nephrotic syndrome
  - Glomerulonephritis
  - Liver disease
  - Malnutrition
  - Chemotherapy
Terry’s Nails

- Leukonychia (>50%) with narrow distal pink band
- Associations
  - Cirrhosis
  - Chronic CHF
  - Diabetes mellitus
Lindsay’s (Half-and-Half) Nails

• Proximal leukonychia with distal brown band
• Associations
  – Renal disease
  – HIV infxn
Red Lunula

- Red lunula
- Associations
  - Alopecia areata
  - Collagen vascular disease
  - CHF
  - COPD
  - Cirrhosis
  - CO2 poisoning
Splinter Hemorrhages

• Longitudinal slivers of blood in nail bed
• Associations
  – Trauma
  – Bacterial endocarditis
  – Vasculitis
Nail Neoplasms

- Myxoid cysts
- Glomus tumors
- Subungual exostosis
- Squamous cell/verrucous carcinoma
Nail Tumors: Melanoma

• Acral lentiginous melanoma
  – Darker skin individuals
  – Genetic characteristics

• Clinical
  – Longitudinal melanonychia
  – Hutchinson’s sign
  – Growth history
  – Beware “refractory warts”
Onychomycosis

• Etiology
  – Dermatophytosis
  – Candida
  – Other

• Presentation
  – Onychothickening, yellowing
  – Subungual debris
Onychomycosis: Diagnosis

• In office examination of clipping
  – KOH (potassium hydroxide)
  – Chlorazol black

• Nail culture

• Pathologic sampling
Onychomycosis: Treatment

• Topical
  – Azoles
  – Allylamines
  – Newer agents

• Systemic
  – Azoles
  – Allylamines
  – Newer agents
Nail Surgery

• Biopsy
  – Considerations
    • When- clinical ddx
    • Where- matrix vs bed
    • How
  – Procedure

• Nail avulsion +/- matrixectomy
When to Refer

• Diagnostic challenge
  – Question of primary dermatologic condition
  – Question of systemic disease
  – Possibility of melanoma, other tumor

• Therapeutic challenge
  – Nail surgery
  – Refractory infectious condition
Summary

• Nails have evolved structures which serve important functions
• Nail conditions may manifest primary dermatological or systemic disease
• Remember nail tumors
• Nail surgery requires special attention to anatomic considerations