Kimberly S. Salkey, MD
Common Challenges in Hair and Nail Disorders

DISCLOSURES

I do not have any relevant relationships with industry.
Hair Disorders

SIR... THE BALDNESS PILL IS NOT A SUPPOSITORY.
Objectives

• Diagnose and recommend treatment options for common hair and nail disorders
Patient 1

Chief Complaint: Hair loss
Patient 1

• History
  – Excessive shedding
  – Smaller ponytail
  – Just married 3 months ago

• Examination
  – Diffuse ↓ in hair density
  – Scalp, brows, lashes WNL
  – Hair pull positive
Telogen Effluvium

- Excessive and early entry of hairs into the telogen phase
- Triggered by emotionally or physiologically stressful events
- Shedding begins 2-4 months after trigger
- > 25% of hairs in telogen phase
- Hair loss can approach 400-500/day
Human Hair Cycle

- **Anagen**: Active growth phase, 3-6 years
- **Catagen**: Transition phase, 1-2 weeks
- **Telogen**: Resting phase, 5-6 weeks
- **Return to Anagen**: Hair matrix forming new hair
.35 mm/day
2-6 years

.16 mm/day
45 days

.35 mm/day
4-11 months
Telogen Effluvium
Causes of Telogen Effluvium

- Childbirth
- Severe infection
- Severe chronic illness
- Severe psychological stress
- Major surgery
- Hypo or hyperthyroidism
- Crash diets inadequate protein
- Drugs
Management of Telogen Effluvium

• Laboratory evaluation
  – Directed by history
  – Thyroid studies, CBC, Iron studies
• Check medications
  – β blockers, NSAIDS, anti-coagulants, HRT
• Reassurance
• Reassurance
• Minoxidil
Quick Quiz

Which of the following is the most likely cause for this patient’s telogen effluvium?

A. Knee replacement surgery with general anesthesia done 6 months ago
B. Azithromycin taken for sinus infection 2 weeks ago
C. Grapefruit only diet started for weight loss 2 months ago
D. Death of a family member 1 year ago
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Clinical Pearl

• Acute onset, diffuse hair shedding occurring a few months after a major stressor

Telogen Effluvium

• Identify cause
• Offer reassurance re: self limited course
Patient 2

Chief Complaint: Toe nail discoloration
Patient 2

• History
  – Discoloration for years
  – Itchy feet
  – Healthy
  – No skin disease

• Examination
  – Similar findings on both feet
Onychomycosis

• AKA tinea unguium

• 3 types
  – Distal/lateral subungual
    • Most common
  – White superficial
    • Direct invasion of superficial nail plate
  – Proximal subungual
    • Immunocompromised hosts
Onychomycosis
Onychomycosis
Onychomycosis
Onychomycosis

- White spotting due to superficial dermatophyte infection or trauma
Onychomycosis Evaluation and Treatment

- Culture to confirm diagnosis
- Terbinafine 250mg PO qd
  - Fingernails- 6 weeks
  - Toenails- 12 weeks
- Itraconazole
  - 200 mg PO qd x 12 weeks OR
  - 200 mg BID x 1 week/month for 3-4 consecutive months
- Griseofulvin
- Fluconazole
- Ciclopirox nail lacquer
Quick Quiz

Which of the following tests is least accurate at confirming a diagnosis of onychomycosis?

A. PAS stain
B. Visual inspection
C. Culture
D. KOH
Quick Quiz

Which of the following tests is least accurate at confirming a diagnosis of onychomycosis?

A. PAS stain
B. Visual inspection
C. Culture
D. KOH
Clinical Pearl: Onychomycosis

- Confirm diagnosis
- Patient education
  - Frequent recurrence
  - Potential side effects of treatment
Patient 3

Chief Complaint: Hair loss
Patient 3

• History
  – Abrupt onset
  – Gradually enlarging
  – Otherwise well, cousin with vitiligo

• Examination
  – Sharply demarcated round patch
  – Hair pull positive at periphery
  – “shaggy” pits in the fingernails
Alopecia Areata

• Autoimmune disorder
  – Family history
• Acute onset
• Well circumscribed, round or oval patches
• Males=females
Alopecia Areata
Alopecia Areata

• Diagnosis
  – Usually based on clinical findings
  – Skin biopsy: lymphocytic infiltrate surrounds early anagen hair bulbs “swarm of bees”

• Treatment
  – Topical, intralesional corticosteroids
  – Oral steroids
    • CAUTION: may experience hair loss after discontinuation
  – Immunotherapy
  – Phototherapy
  – JAK inhibitors
Alopecia Areata

- Variable course
- Relapses occur
- Poor prognosis
  - Duration more than one year
  - Extensive hair loss
  - Onset at age <5 years
  - Family history of alopecia areata
Quick Quiz

Which of the following is an associated finding with alopecia areata?

A. Nail pits
B. Atopic dermatitis
C. Destruction of hair follicles on biopsy
D. Question mark hairs
Quick Quiz

Which of the following is an associated finding with alopecia areata?

A. Nail pits
B. Atopic dermatitis
C. Destruction of hair follicles on biopsy
D. Question mark hairs
Clinical Pearl: Alopecia Areata

- Acute onset
- Well defined
- Oval or round patches of alopecia

Gold Standard: Intralesional triamcinolone
Patient 4

Chief Complaint: Toe nail discoloration
Patient 4

• History
  – 37yo man
  – 4 year history of gradual darkening and widening of pigmented band

• Examination
  – Brown/Black extension to proximal nail fold- Hutchinson’s sign
Acral Lentiginous Melanoma

- Palm, sole or nail bed
- Median age 65
- 50-70% of melanomas in African Americans and Asians
<table>
<thead>
<tr>
<th>Causes of Longitudinal Melanonychia</th>
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<tbody>
<tr>
<td><strong>Melanocyte activation</strong></td>
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<tr>
<td><em>Racial</em></td>
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<tr>
<td><em>Trauma</em></td>
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<tr>
<td>• manicures</td>
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<tr>
<td>• onychotillomania</td>
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<tr>
<td>• frictional, primarily in toenails</td>
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<tr>
<td><em>Drugs</em></td>
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<tr>
<td>• cancer chemotherapeutic agents, e.g. doxorubicin, 5-fluorouracil</td>
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<tr>
<td>• AZT</td>
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<td>• psoralens</td>
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<td><em>Pregnancy</em></td>
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<td><em>Laugier–Hunziker syndrome</em></td>
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<td><em>Peutz–Jeger syndrome</em></td>
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<td><em>Addison’s disease</em></td>
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<td><em>HIV infection</em></td>
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<td><em>Postinflammatory</em></td>
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<tr>
<td>• lichen planus</td>
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<tr>
<td>• pustular psoriasis</td>
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<tr>
<td>• onychomycosis (<em>T. rubrum</em> and <em>Scatylidium</em> sp.)</td>
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<tr>
<td>• chronic radiodermatitis</td>
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<tr>
<td><strong>Non-melanocytic tumors</strong></td>
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<td><em>Bowen’s disease</em></td>
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<td><em>Verrucae</em></td>
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<td><em>Basal cell carcinoma</em></td>
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<td><em>Subungual keratosis</em></td>
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<td><em>Myxoid cyst</em></td>
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<tr>
<td><strong>Melanocyte hyperplasia</strong></td>
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<tr>
<td><strong>Nail matrix nevus</strong></td>
</tr>
<tr>
<td><strong>Nail matrix melanoma</strong></td>
</tr>
</tbody>
</table>

*Minocycline*  
*Anti-malarials*  
*Gold*
Nail matrix nevus
Nail matrix nevus
A patient with HIV taking zidovudine
Subungual hematoma
Pseudomonas nail infection
Quick Quiz

Which of the following medications is most closely associated with melanonychia?

A. Aspirin
B. Coumadin
C. Digoxin
D. Hydroxychloroquine
Quick Quiz
Which of the following medications is most closely associated with melanonychia?

A. Aspirin
B. Coumadin
C. Digoxin
D. Hydroxychloroquine
Clinical Pearl: Melanonychia

- Check for Hutchinson’s sign - extension of pigment to proximal nail fold
- If negative, consider
  - Normal variant
  - Traumatic
  - Drug induced
Patient 5

Chief Complaint: Hair loss
Patient 5

• History
  – Gradually thinning on top since age 20’s
  – Dad’s hair also thin
  – No known medical problems

• Examination
  – ↓↓↓ density of frontal scalp with recession of frontal hair line
  – Many miniaturized hairs
Androgenetic Alopecia-MEN

- 50% by age 50 years
- **Androgen** dependent progressive decline in anagen duration
- **Genetic** predisposition
- Hair follicles miniaturize
- Hair loss occurs in the fronto-temporal regions and the vertex

Uptake, metabolism, and conversion of testosterone to dihydrotestosterone by 5-alpha-reductase is increased in balding hair follicles.
Androgenetic Alopecia
Female Pattern Hair Loss

Androgenetic Alopecia

- WOMEN
- With or without androgen excess
- Early or late onset
- Hairs of variable diameter
- Top of scalp most significantly involved
Female Pattern Hair Loss

Grade I

Grade II

Grade III
Androgenetic Alopecia

1. Progressive shortening of successive anagen cycles
2. Miniaturization
Androgenetic Alopecia
Androgenetic Alopecia: Treatment

- Topical minoxidil (effective in ~40-60%)
- Finasteride
  - Effective in 66%-83% men
  - Cannot be used in women
- Spironolactone may be used for women
- Hair weaves and extensions
- Hair transplant

\[ T \xrightarrow{5 \alpha \text{ reductase}} \text{DHT} \]
Quick Quiz

Which of the following is FDA approved for treatment of female pattern hair loss?

A. Finasteride  
B. Nioxin  
C. Minoxidil  
D. Spironolactone
Quick Quiz

Which of the following is FDA approved for treatment of female pattern hair loss?

A. Finasteride
B. Nioxin
C. Minoxidil
D. Spironolactone
Clinical Pearl: Androgenetic Alopecia

Most cases of hair loss are due to androgenetic alopecia (AGA)

**MEN**
- 50% by age 50 years
- Hair loss occurs in the fronto-temporal regions and the vertex
- Finasteride

**WOMEN**
- 40% by menopause
- More diffuse and located centroparietally
  - The frontal hairline is usually intact

**BOTH**
Minoxidil is FDA approved
Common Challenges in Hair and Nail Disorders

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Kimberly S. Salkey, MD
Associate Professor
Department of Dermatology