Approach to Alopecia in the Pediatric Patient

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Disclosures

• No relevant financial relationships
• Develop a systematic approach to use with every patient
• Get close and personal to the hair
• Don’t forget to look at the rest of the body!
• Narrow the differential by age and clinical pattern
• 3-year-old girl referred for hair loss
Lost all of her hair, has started to regrow over past month

Has looked like this since birth

HISTORY MATTERS!!!
• 3-year-old girl referred for hair loss

**Important questions**

• How does the hair look today in comparison to the past?
• Are you noticing increased shedding or thinning of hair?
• Is the whole scalp affected?
• Hair changes anywhere else?
• 3-year-old girl referred for hair loss
• Hair has never grown past this length
• No family members with similar hair
• Patient is otherwise developmentally normal
Try to Narrow the Differential

1-3 years (age of hair loss onset)

<table>
<thead>
<tr>
<th>Genetic hair shaft defects</th>
<th>Trichorrhexis nodosa</th>
</tr>
</thead>
<tbody>
<tr>
<td>Congenital hypo-, atrichia, and aplasia</td>
<td>Pseudomonilethrix</td>
</tr>
<tr>
<td>Scalp infection</td>
<td>Pili torti</td>
</tr>
<tr>
<td>Autoimmune-inflammantory</td>
<td>Netherton</td>
</tr>
<tr>
<td></td>
<td>Menkes</td>
</tr>
<tr>
<td></td>
<td>Trichothiodystrophy</td>
</tr>
<tr>
<td></td>
<td>Ectodermal dysplasia</td>
</tr>
<tr>
<td></td>
<td>Tinea capitis</td>
</tr>
<tr>
<td></td>
<td>Alopecia areata</td>
</tr>
</tbody>
</table>
• 3-year-old girl referred for hair loss
• Hair has never grown past this length
• No family members with similar hair
• Patient is otherwise developmentally normal

• Short, lusterless blond hair, LM normal
• Normal hair density
• Pull test negative, tug test negative
• Don’t forget to look at the rest of the body, especially teeth and nails!
• Likely syndromic
• Somatic HRAS mutation/mosaic Costello syndrome
Tinea Capitis

- Common cause in all age groups

Most common cause of non-scarring hair loss in children!
Tinea Capitis

- Common cause in all age groups
- Don’t forget about diffuse scaly tinea capitis!
  - If considering seborrheic dermatitis, consider fungal culture

Most common cause of non-scarring hair loss in children!
# Tinea Capitis

Most common cause of non-scarring hair loss in children!

<table>
<thead>
<tr>
<th></th>
<th>Griseofulvin</th>
<th>Terbinafine</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dose</strong></td>
<td>20-25 mg/kg/day</td>
<td>Granules</td>
</tr>
<tr>
<td></td>
<td>10 mg/kg/day (&lt;2 y/o)</td>
<td>62.5 mg (&lt;20 kg)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>125 mg (20-40 kg)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>250 mg (&gt;40 kg)</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>8 weeks</td>
<td>4 weeks</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td>Approved for &gt;2 years old</td>
<td>Approved for &gt;4 years old</td>
</tr>
<tr>
<td><strong>Caveats</strong></td>
<td></td>
<td>Not good for Microsporum</td>
</tr>
<tr>
<td><strong>Formulations</strong></td>
<td>Suspension 125 mg/5 mL</td>
<td>Tablets 250 mg, Granules in packets</td>
</tr>
<tr>
<td></td>
<td>Administer with fatty meal</td>
<td>Granules sprinkled on food</td>
</tr>
</tbody>
</table>
Tinea Capitis

- Common cause in all age groups
- Don’t forget about diffuse scaly tinea capitis!
  - If considering seborrheic dermatitis, consider fungal culture
- Adjunctive treatment with antifungal shampoos at least twice weekly during treatment (preferably longer)
- Kerions – Gentle soaks and keratolytics
  - No real evidence to support steroids and antibiotics

Most common cause of non-scarring hair loss in children!
• 14-year-old boy referred for hair loss
• Present for 7 years
• Patient is otherwise healthy
Try to Narrow the Differential

<table>
<thead>
<tr>
<th>4-11 years (age of hair loss onset)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autoimmune-inflammatory</td>
</tr>
<tr>
<td>Acquired hair shaft defects</td>
</tr>
<tr>
<td>Scalp infection</td>
</tr>
<tr>
<td>Acquired diffuse non-scarring hair loss</td>
</tr>
<tr>
<td>Congenital hypotrichia</td>
</tr>
</tbody>
</table>

- Alopecia areata
- Weathering
- Bubble hair
- Trichorrhexis nodosa
- Tinea capitis
- Telogen effluvium
- Loose anagen
• 14-year-old boy referred for hair loss
• Present for 7 years
• Patient is otherwise healthy

• Pull test at periphery helpful
• Main differential diagnosis in children and adolescents is trichotillomania
• In children, unlike adults, biopsy is a last resort
• Use all clinical clues possible
Alopecia Areata

- Most closely linked genetically to celiac disease, type 1 diabetes, rheumatoid arthritis, multiple sclerosis, Crohn’s disease
- Bloodwork upon diagnosis and yearly thereafter
  - Thyroid function, thyroglobulin and thyroid peroxidase antibodies
  - 25-OH vitamin D
  - IgA-antitransglutaminase-2
Alopecia Areata

- 50% regrow spontaneously within 1 year

Treatment

- Topical steroids – clobetasol safe, but monitor closely
- Intrallesional steroids every 4-6 weeks
  - Typically do 10 mg/mL (total mg injected ~2/3 of weight in kg)
  - Always offer as a treatment and let family and patient decide
6 weeks
12 weeks
Alopecia Areata

- 50% regrow spontaneously within 1 year
- Treatment
  - Topical steroids – clobetasol safe, but monitor closely
  - Intralesional steroids
  - Topical immunotherapy – SADBE, DPCP (> age 10)
  - Systemic immunosuppressants – high relapse rate
- Resources from NAAF (https://www.naaf.org)
• 17-year-old female presents with hair thinning

**Important questions**

• Are you noticing increased shedding or thinning of hair?
Shedding questions

- Recent illnesses
  - Vomiting/diarrhea episodes
  - Fevers
- Diet history (kids can be picky!)
- Medications
- Other medical problems

Thinning questions

- Pattern
- Pony-tail thickness
- Adolescents – menstrual history
• 17-year-old female presents with hair thinning
• Irregular periods but was told this was normal for a teenager
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• Irregular periods but was told this was normal for a teenager

• Don’t forget the rest of the body!
• Mild acne on the face
• Unwanted hair growth on the face and back
## Try to Narrow the Differential

<table>
<thead>
<tr>
<th>12-18 years (age of hair loss onset)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Autoimmune-inflammatory</strong></td>
</tr>
<tr>
<td>Acquired localized non-scarring hair loss</td>
</tr>
<tr>
<td>Hormonal dysregulation androgen alopecia</td>
</tr>
<tr>
<td><strong>Androgenetic alopecia</strong></td>
</tr>
<tr>
<td>Acquired diffuse non-scarring hair loss</td>
</tr>
<tr>
<td>Scarring alopecia</td>
</tr>
</tbody>
</table>

- Alopecia areata
- Trichotillomania
- Traction alopecia
- Telogen effluvium
- Loose anagen
Polycystic Ovary Syndrome

• Often presents during adolescence, and hair thinning may be the reason for presentation to a physician
• Hair loss is considered a “hirsutism equivalent” like acne
  • In combination with menstrual irregularities, obesity, or treatment-resistant acne, workup for PCOS
• Any hormonal testing should be done prior to starting birth control or spironolactone
• 17-year-old female presents with hair thinning
• Irregular periods but was told this was normal for a teenager
• Spironolactone and contraceptives
• Minoxidil

• Main other differentials include telogen effluvium and diffuse alopecia areata
Telogen Effluvium in Kids vs Adults

- Different triggers
Shedding questions

- Recent illnesses
  - Vomiting/diarrhea episodes
  - Fevers
- Diet history (kids can be picky!)
- Medications
- Other medical problems

Thinning questions

- Pattern
- Pony-tail thickness
- Adolescents – menstrual history
Telogen Effluvium in Kids vs Adults

- Bacterial and viral infections
- Iron deficiency and thyroid dysfunction
- Rare for medications to cause TE in kids
  - Anticonvulsants, anticoagulants, antidepressants
• Develop a systematic approach to use with every patient
• Get close and personal to the hair
• Don’t forget to look at the rest of the body!
• Narrow the differential by age and clinical pattern
Thank You!

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