Diagnosis and Management of the Hair Loss Patient: Pearls and Pitfalls

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Paradi Mirmirani, MD
The Permanente Medical Group, Vallejo, CA
Regional Director, Hair Disorders
paradi.mirmirani@kp.org
DISCLOSURE OF RELEVANT RELATIONSHIPS WITH INDUSTRY

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I will be discussing off-label use of medications
Alopecia areata - unresponsive to treatment

- 32 yo - patchy hair loss
- Marginal alopecia:
  - AA vs traction vs FFA
- Biopsy done at leading edge:
  - Non-scarring, pauci-inflammatory, miniaturization, catagen/telogen shift favor AA
Traction Alopecia

*The "Fringe Sign" - A useful clinical finding in traction alopecia of the marginal hair line.*

Samrao A¹, Price VH, Zedek D, Mirmirani P.
Marginal alopecia

Biopsy location:
- FFA- active edge
- AA- biopsy + pull test
- Traction-
  - Consider– biopsy of center and leading edge
Weft hair extensions causing a distinctive horseshoe pattern of traction alopecia.
Ahdout J, Mirmirani P.
Alopecia Areata-Treatment <50%

- Nothing
- IL corticosteroids (5 or 10mg/cc-20mg total)
- Cocktail:
  - Topical minoxidil 5% bid
  - Short contact anthralin (up to 30-60min)
  - Topical corticosteroid
Treatment of extensive or treatment resistant alopecia areata

– Topical immunotherapy (squaric acid, diphenylcyclopropenone)
– Systemic immunosuppressive agents (rarely)
– Janus kinase inhibitors
Alopecia areata totalis in a 12 yo boy

- Ophiasis: Treatment:
  - minoxidil, anthralin,
  - topical corticosteroid

- Progressed to totalis:
  - Squaric acid- regrowth after 4 months but then recurrent loss

- DPCP- minimal regrowth after 4 months
Immunotherapy with anthralin

- Continued DPCP
- Added anthralin short contact on non-DPCP days
- Response rates >50% regrowth in 70% of totalis and 50% of universalis
• 25 year old male
• Psoriasis and alopecia areata universalis (Renbok)
• Failed adalimumab
• Tofacitinib 5mg bid increased to 15mg bid


Killing two birds with one stone: oral tofacitinib reverses alopecia universalis in a patient with plaque psoriasis.

Craigmol BQ1, King BA1.
Targeting the inflammatory pathways in AA

- Janus kinase inhibitors
  - Ruxolitinib (JAK 1,2)
  - Tofacitinib (JAK 3)

- Side effects
  - Infection/malignancy
  - Lipid elevation
  - Cytopenias
Use of JAK inhibitors for AA

- In adults: oral tofacitinib (5mg bid)
  - 90 patients
    - 77% clinical response
    - 58% had greater than 50% change in SALT score
    - >10 years AA lower response rates
  - 13 patients
    - 50% response in 53.8%

- In adolescents 9/13 experienced clinically significant hair regrowth

- Hair loss recurrent when medication stopped
JAK inhibitors for AA

- No standard treatment protocols
- Limitations:
  - Cost
  - Insurance coverage
  - Lack of durability
- Pharmaceutical patient assistance programs may offer coverage of copays or provide medication.
Jak inhibitors for AA

**Baseline assessment:**
- Photographs or standardized assessments of the extent of scalp hair loss (Severity of alopecia tool - SALT).
- Document eyebrow, eyelash, body hair, and nail changes.

**Immunizations**

**Follow up:**
- Repeat cbc, lipids, alt at 1 month then every 3 months. Repeat PPD yearly.
Jak inhibitors for AA

**Treatment regimen:**
- Tofacitinib: Start 5mg bid x 3 months.
- Increase dose to 10mg bid if < 50% regrowth, max dose 15mg bid.
- Continue at 5mg bid if >50% regrowth.
- Consider adjuvant treatment such as intralesional kenalog injections, minoxidil if + regrowth but not full coverage.
JAK inhibitors for AA

**Maintenance treatment for responders:**
- Trial of discontinuing the medication at 1 year if full regrowth and no signs of ongoing disease activity (no patchy loss, pull test neg).

**Treatment failure:**
- Consider ruxolitinib: 20mg bid over 3-6 months resulted in responses in 9/12 patients.
- Baricitinib (JAK1/2) (FDA approval pending for RA)
36 yo woman: “I’m losing my eyebrows…”

- Ask about stx
- Look for
  - Inflammation
  - Frontal hairline
  - Textural or pigmentary changes of face

Diagnosis: FFA
Bandlike Frontal Hair Loss in a 62-Year-Old Woman

Paradi Mirmirani, MD; Timothy McGalmont, MD; Vera H. Price, MD, FCRPC; University of California, San Francisco

REPORT OF A CASE

A 62-year-old white woman presented with a 1-year history of decreased hair density and itching of the scalp. The hair loss was most prominent along the frontal hairline. She also noted decreased density and then complete loss of both eyebrows. She was in good health except for a history of basal cell cancer and actinic keratoses. She had undergone a hysterectomy at the age of 65 years, and the only medication she used was vaginal estrogen cream. She denied any family history of androgenetic alopecia or other types of hair loss.

The results of laboratory tests, including a complete blood cell count and measurement of thyrotropin and antinuclear antibody levels, were normal. Physical examination revealed seemingly normal scalp hair density. However, an absence of follicular orifices and increased spacing between the hairs in a bandlike distribution from ear to ear were evident on close examination of the frontal hairline (Figure 1, top arrow). The skin in the area of alopecia, anterior to the frontal hairline, was pale and contrasted with the sun-damaged skin of the lower area of the forehead. Sparse residual hairs along the frontal hairline had notable peri-follicular erythema and scale. Eyebrows were absent bilaterally (Figure 1, bottom arrow). Anagen hairs were easily extracted from the affected area. Findings of examination of the skin, nail, and mucous membranes were normal.

A 4-mm punch biopsy specimen from the affected area was horizontally sectioned (Figure 2 and Figure 3).

What is your diagnosis?
Postmenopausal Frontal Fibrosing Alopecia
Scarring Alopecia in a Pattern Distribution

Steven Kossard, FACD


6 women
Hypothesis: Pathogenesis
Sebaceous Gland Dysfunction

- Asebia mouse: animal model for cicatricial alopecia (Sundberg et al 2000)
- Histology: absence of sebaceous glands
- Sebaceous glands
  - Responsive to various hormones
  - Repository for toxins
Current Controversy: FFA and Facial Moisturizers/ Sunscreens?

- 105 women FFA and 100 age matched controls
  - Use of sunscreens significantly higher in FFA group

- 17 men with FFA and 73 controls
  - Use of facial moisturizers and sunscreens higher in FFA group
Finding the missing hairline in FFA: cocking the eyebrows, a useful maneuver
Defining and Measuring Disease Activity and Endpoints

- Symptoms (itch, pain, burn)
- Signs of inflammation (erythema, scaling)
- Progression of hair loss (photography)
- Scalp biopsy

- Follow up - every 2-3 months until stable
- Expected duration of treatment
  - 6-9 months after stabilization
  - Recurrences are frequent
Therapy for lymphocyte mediated cicals: Steps and Layers

**Anti-inflammatory**
- Tier 1: Intralesionals (5mg/ml tac), topical corticosteroids
- Tier 2: Antibiotics (doxycycline 100mg bid), antimalarials (hydroxychloroquine 200mg bid), ppar gamma agonists (pioglitazone 15mg qd)
- Tier 3: Systemic anti-inflammatory (prednisone, cyclosporine 200-400mg qd, mycophenolate mofetil 1-2 g qd)

**Non-specific hair growth promotion**
- Topical minoxidil, 5-alpha- reductase inhibitors (finasteride, dutasteride)

**Cosmetic**

*Cicatricial Alopecia an Approach to Diagnosis and Management, Springer 2011*
PPAR-gamma agonists

- PPAR gamma agonists: rosiglitazone, pioglitazone
  - Can be used in non-diabetics
  - Side-effects include weight gain, peripheral edema, bladder CA >1 year
  - Used low dose: (pioglitazone 15mg daily)

Lichen planopilaris treated with a peroxisome proliferator-activated receptor gamma agonist.
Mirmirani P, Karnik P.
Treating FFA with 5-alpha reductase inhibitors

- Cohort of 355 patients
  - (111)31% took finasteride or dutasteride
  - 47% improved, 53% stabilized

- Targeted treatment or non-specific hair regrowth?
  - Co-existent AGA 40% of women and 67% of men
  - 5-alpha reductase type II- hair follicles
  - 5-alpha reductase type I- sebaceous glands
38 yo AA woman with itchy scalp and hair loss

- Central centrifugal cicatricial alopecia
- Tenderness, itch, broken hairs- early signs
- Assess severity
  - Biopsy
- Engage patient
  - Ask about preferences in vehicles for topicals
  - Hair care guidance


Hair breakage as a presenting sign of early or occult central centrifugal cicatricial alopecia: clinicopathologic findings in 9 patients.

Calendar VD, Wright DR, Davis EG, Sporling LG.
Central scalp alopecia photographic scale in African American women.
62 yo man with increased hair loss
itchy, painful, sores on scalp

Folliculitis decalvans
- Pustular
- Cultures can be helpful in directing treatment
Therapy for folliculitis decalvans

Decrease microbial load

- Repeated C & S of pustules
- For staph aureus: oral clindamycin and oral rifampin x10 weeks
- If staph carrier: mupirocin ointment intranasal BID for 1 week, then q month
- Topical or single agent po antibiotics for maintenance

Successful treatment regime for folliculitis decalvans despite uncertainty of all aetiological factors. Powell J, Dawber RP.
Therapy for dissecting cellulitis

- Dissecting cellulitis
  - Intrallesionals/anti-inflammatory
  - Incision and drainage
  - Isotretinoin
  - Anti-TNF
  - Laser hair removal
Initial Presentation. Fungal and bacterial cultures-negative. Biopsy confirmed dissecting cellulitis. Patient failed po and topical abx, ilk, prednisone, isotretinoin, etanercept

Post infliximab and po TMP-sulfa
Erosive Pustular Dermatosis

- Post-trauma, sun-damaged skin
- Antimicrobials, high potency corticosteroids, topical tacrolimus, topical dapsone
- Relapsing course