



Benign Hair Disorders

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Objectives

- Follow case-based discussion on patient hair complaints
- Identify benign hair disorders
- Discuss classic presentations and findings of benign hair disorders
- Evaluate treatment options
- Examine features that raise concern

Case 1



29-year-old woman presents with new onset hair shedding.

Denies any known chronic medical problems

Denies family history of hair thinning

Reports COVID19 infection 3 months prior

Source: DermNet - <https://dermnetnz.org/quizzes/hair-loss-14-cases/case/3>
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Case 1



Exam reveals diffusely thin hair on scalp

Hair pull test is positive

Lab values for CBC, CMP, TSH are within normal limits

Source: DermNet - <https://dermnetnz.org/quizzes/hair-loss-14-cases/case/3>
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Case 1



Diagnosis?

Source: DermNet - <https://dermnetnz.org/quizzes/hair-loss-14-cases/case/3>
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Case 1



Telogen effluvium

Source: DermNet - <https://dermnetnz.org/quizzes/hair-loss-14-cases/case/3>
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Telogen effluvium

- Common nonscarring hair loss

Telogen effluvium

- Typically – in normal scalp:
 - 90% of scalp hair is in anagen (growth) phase
 - 10% of scalp hair is in telogen (shedding) phase

Telogen effluvium

- In patients with telogen effluvium:
 - 80% of scalp hair is in anagen (growth) phase
 - 20% of scalp hair is in telogen (shedding) phase

Telogen effluvium

- Premature transition of more hairs to the telogen phase leads to more rapid hair shedding

Telogen effluvium

- Numerous Triggers:
 - Emotional/psychological stressors
 - Systemic illness
 - Hormonal changes
 - Surgery
 - Medication changes
 - Diet/abrupt weight loss
 - Nutritional deficiencies

Telogen effluvium

- Most common alopecia associated with systemic illness

Telogen effluvium

- Common medications implicated:
 - Acitretin
 - Isotretinoin
 - Beta blockers
 - Captopril
 - Antidepressants
 - Anticonvulsants
 - Diabetic drugs
 - Oral contraceptives

Telogen effluvium

- Interval between inciting event/agent and shedding
 - Typically weeks to few months

Telogen effluvium

- Hair loss noted as increase in shedding
- May persistent for 6-12 months
- Chronic form is less common but can persistent for years

Telogen effluvium

- Exam shows diffuse thinning across the scalp
- Gentle pull test with 10-20 hairs – perform gentle traction – will yield ~10 hairs. Normally 1-2 hairs should come out from the bulb (white hair bulbs noted on ends)



Telogen effluvium

- Perform drug history
- Perform extensive history gathering related to any stressful events, life changes, diet changes, or medical issues in the months preceding onset of hair loss
- Consider ferritin and TSH testing



Telogen effluvium

- Management:
 - Reassurance
 - Address any nutritional deficiencies
 - Address any culprit drugs, underlying medical problems, or persistent stressors



Telogen effluvium

- Management:
 - Consider topical minoxidil 5% foam or solution
 - Severe or persistent cases may benefit from oral minoxidil



Case 2

- 40 yo F presents with worsening hair loss for years
- Denies chronic medical history, denies taking prescription medications
- Reports mother with similar pattern of hair loss
- Reports history of chemical treatments to hair



Case 2

- Exam reveals smooth complete alopecia primarily affecting vertex scalp
- Scalp appears shiny in areas of hair loss



Central Centrifugal cicatricial alopecia (CCCA)

- Scarring alopecia
- Predominantly affects women of African descent



Central Centrifugal cicatricial alopecia (CCCA)

- Exact pathogenesis is unknown
- Likely multifactorial



Central Centrifugal cicatricial alopecia (CCCA)

- A genetic defect in the internal root sheath has been suggested
- Mutation in *PADI3* (encodes protein necessary for normal hair shaft formation)



Central Centrifugal cicatricial alopecia (CCCA)

- Additional factors thought to be implicated/worsen disease include hair practices that may cause trauma to the hair shafts including tight hair styles, excessive use of heat styling, and chemical hair relaxers



Central Centrifugal cicatricial alopecia (CCCA)

- When disease is active – can be symptomatic (burning, pruritis, etc.)



Central Centrifugal cicatricial alopecia (CCCA)

- Areas scarred will unlikely have regrowth
- Goal is to prevent worsening



Central Centrifugal cicatricial alopecia (CCCA)

- Management:
 - Topical steroids
 - Intralesional steroids
 - Topical minoxidil
 - Oral antibiotics
 - Antimalarials
 - Topical metformin



Case 3

- 63 yo postmenopausal woman presents with itching scaling plaques on scalp
- Tenderness and burning also present
- Has areas of shiny hair loss on scalp
- Denies chronic medical problems



Lichen planopilaris (LPP)

- Scarring hair loss
- Presents with erythema on scalp and perifollicular scaling
- Severe pruritis, scaling, burning, and tenderness may be present



Lichen planopilaris (LPP)

- Thought to be caused by dysfunction in cell-mediated immunity
- May present in association with lichen planus
- Leads to scarring hair loss



Lichen planopilaris (LPP)



Lichen planopilaris (LPP)

- Biopsy can be helpful
- Management is challenging
- Goal is to halt inflammatory process and minimize the extent of scarring hair loss



Lichen planopilaris (LPP)

- Management:
 - Topical steroids
 - Intralesional steroids
 - Hydroxychloroquine
 - antibiotics
 - immunosuppression



Case 4

- 30 yo F presents with few circular patches of hair loss
- Reports similar episodes in past with spontaneous regrowth
- Denies symptoms
- Denies chronic medical problems



Case 4

- Exam reveals several circular areas of complete hair loss
- Dermoscopic exam reveals retention of follicular ostia



Alopecia areata

- Autoimmune disease
- Non-scarring hair loss
- Can affect any hair bearing area
- Sudden onset



Alopecia areata

- T lymphocyte-mediated attack on hair follicle
- Course unpredictable



Alopecia areata

- Presents as round patches of hair loss
- May affect eyebrows, eyelashes, body hair
- Hair regrowth usually as white or gray hairs



Alopecia areata

- Consider obtaining TSH, ANA, RF, Ferritin, TTG, HbA1c



Alopecia areata

- Management
 - Topical steroids
 - Intralesional steroids
 - Oral steroids
 - Topical immunotherapy
 - Immunosuppressants
 - Janus kinase (JAK) inhibitors



Case 5

- 65 yo F presents with 10 year history of widening of her hair part
- Denies symptoms on the scalp
- Reports frontal hair line has maintained about the same
- Reports history of hypertension



Case 5

- Exam reveals diffuse thinning of the scalp vertex and mid scalp
- Frontal hairline is retained
- No erythema or areas of scarring are noted



Androgenetic alopecia (female pattern alopecia)

- Most commonly noted in postmenopausal women
- Can present earlier in life



Androgenetic alopecia (female pattern alopecia)

- Hereditary – many genes involved
- Dihydrotestosterone (DHT) binds to the androgen receptor
- Hormone-receptor complex --> turns on genes --> transformation of large terminal follicles to miniaturized follicles



Androgenetic alopecia (female pattern alopecia)

- Presents as diffuse thinning of the crown and widening of the part
- Nonscarring
- Bitemporal recession



Androgenetic alopecia (female pattern alopecia)

- Younger women presenting with AGA --> workup for underlying endocrine disorders
 - Polycyclic ovary syndrome
 - Late-onset congenital adrenal hyperplasia



Androgenetic alopecia (female pattern alopecia)

- Lab testing often not necessary
- If features of hyperandrogenism
 - DHEA-S
 - Total testosterone



Androgenetic alopecia (female pattern alopecia)

- Lab testing often not necessary
- Consider
 - Iron studies (ferritin)
 - Thyroid function tests



Androgenetic alopecia (female pattern alopecia)

- Management
 - Establish realistic goals of treatment
 - Treat any underlying conditions of scalp such as seborrheic dermatitis



Androgenetic alopecia (female pattern alopecia)

- Management
 - Topical minoxidil 5%
 - Spironolactone
 - Finasteride
 - Oral minoxidil

 - Need to treat for at least 6-12 months before evaluating for efficacy



Case 6

- 50 yo F presents with progressive loss of frontal hair line
- Notes some remaining hairs along edge of hairline



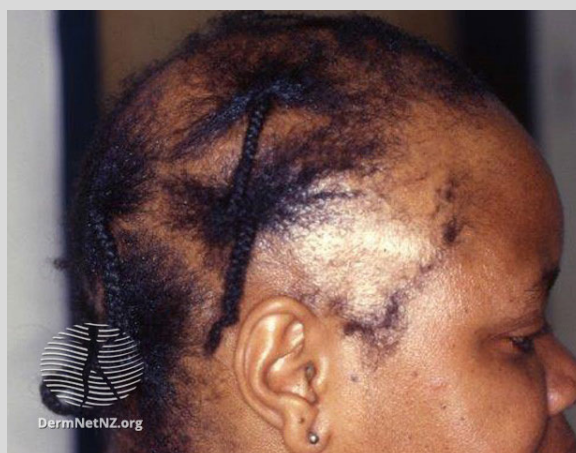
Case 6

- Reports typically styles hair in braids or tight bun
- Denies symptoms on scalp



Traction Alopecia

- Occurs after hair shaft is placed under tension for extended periods cumulatively
- Hair shaft becomes damaged



Source: DermNet - <https://dermnetnz.org/topics/traction-alopecia>
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Traction Alopecia

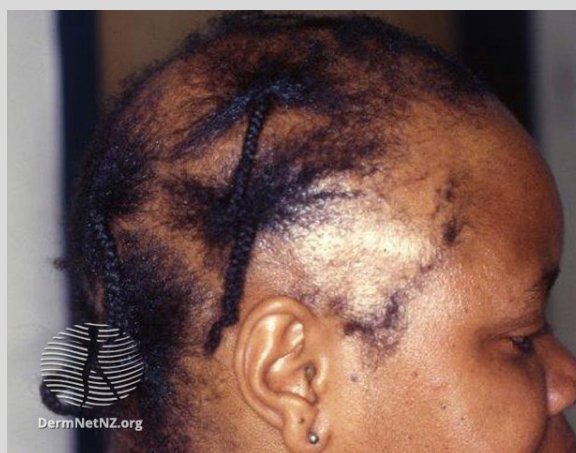
- Typically involves frontotemporal scalp, sometimes occipital scalp
- More common in women, especially black women



Source: DermNet - <https://dermnetnz.org/topics/traction-alopecia>
CC BY-NC-ND 3.0 NZ

Traction Alopecia

- Management
 - Avoid tight hair styles
 - If caught early – likely nonscarring
 - If later stages – likely scarring



Source: DermNet - <https://dermnetnz.org/topics/traction-alopecia>
CC BY-NC-ND 3.0 NZ

Traction Alopecia

- Management
 - Topical steroids
 - Topical 5% minoxidil
 - Oral antibiotics (anti-inflammatory)
 - Intralesional steroids



Source: DermNet - <https://dermnetnz.org/topics/traction-alopecia>
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Case 7

- 40 yo M presents with thinning along scalp vertex and mid scalp
- Notes father has similar hair loss but started in his 60s
- Denies new medications



Source: DermNet - <https://dermnetnz.org/topics/male-pattern-hair-loss>
CC BY-NC-ND 3.0 NZ

Case 7

- Exam reveals bitemporal recession with mid and vertex scalp thinning
- No evidence of scarring

Source: DermNet - <https://dermnetnz.org/topics/male-pattern-hair-loss>
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Androgenetic alopecia (male pattern hair loss)

- Common pattern of hair loss in men
- Dihydrotestosterone induces miniaturization of select hair follicles
- Genetic pattern

Source: DermNet - <https://dermnetnz.org/topics/male-pattern-hair-loss>
CC BY-NC-ND 3.0 NZ



Androgenetic alopecia (male pattern hair loss)

- Management:
 - Realistic expectations
 - Topical minoxidil
 - Oral minoxidil
 - Oral finasteride

Source: DermNet - <https://dermnetnz.org/topics/male-pattern-hair-loss>
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Objectives

- Follow case-based discussion on patient nail complaints
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- Discuss classic presentations and findings of benign nail disorders
- Evaluate treatment options
- Examine features that raise concern

Case 1

- 65 yo M presents with nail changes on several fingernails
- Employed as a mechanic and has dry hands



Source: DermNet - <https://dermnetnz.org/topics/onycholysis>
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Case 1

- Exam reveals distal nail plate separated from nail bed on several fingernails. Toenails are spared



Source: DermNet - <https://dermnetnz.org/topics/onycholysis>
CC BY-NC-ND 3.0 NZ

Onycholysis

- Presents of detachment of the nail plate from bed
- Most common cause is trauma
- Also seen in patients with eczema, psoriasis, contact dermatitis, lichen planus, and other skin conditions



Source: DermNet - <https://dermnetnz.org/topics/onycholysis>
CC BY-NC-ND 3.0 NZ

Onycholysis

- Management:
 - Nails should be kept trim
 - Avoid trauma or chemical irritants
 - Gloves used for dishwashing
 - Avoid excessive wet work



Source: DermNet - <https://dermnetnz.org/topics/onycholysis>
CC BY-NC-ND 3.0 NZ

Onycholysis

- Management:
 - Consider dilute vinegar soaks for prevention of secondary infection
 - If underlying medical condition identified, treatment may be helpful to nails



Source: DermNet - <https://dermnetnz.org/topics/onycholysis>
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Case 3

- 55 yo M presents with thickening and yellowing of both great toenails
- Endorses being an avid runner
- Denies involvement of fingernails
- No new medications



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
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Case 3

- Exam reveals thickened dystrophic great toenails



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
CC BY-NC-ND 3.0 NZ

Onychomycosis

- Fungal infection of the nail caused by dermatophyte fungi most commonly
- Often associated with tinea pedis



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
CC BY-NC-ND 3.0 NZ

Onychomycosis

- Personal history of tinea pedis or household contacts with onychomycosis = most common risk factors



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
CC BY-NC-ND 3.0 NZ

Onychomycosis

- Typically involves toenails – fingernails rarely affected



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
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Onychomycosis

- Nail clipping for periodic acid-Schiff (PAS) staining
- KOH prep of nail scrapings
- Fungal culture for identification of specific pathologic



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
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Onychomycosis

- Management:
 - Most effective therapy: terbinafine 250 mg daily x 12 weeks for toenail infections
 - Baseline liver function tests and repeat testing



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
CC BY-NC-ND 3.0 NZ

Onychomycosis

- Management:
 - Topical – less effective
 - Ciclopirox 8% nail lacquer



Source: DermNet - <https://dermnetnz.org/topics/fungal-nail-infections>
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Case 3

- 30 yo M presents with transverse depression along multiple fingernails
- Reports infection of hand-foot-and-mouth disease that he acquired a few months prior from patient's toddler



Source: DermNet - <https://dermnetnz.org/topics/nail-terminology>
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Case 3

- Exam reveals transverse depression along several fingernails
- No other skin changes are noted



Source: DermNet - <https://dermnetnz.org/topics/nail-terminology>
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Beau lines

- Presents as transverse depression in nail plate
- Secondary to interruption of nail keratin synthesis
- Grow out with nail



Source: DermNet - <https://dermnetnz.org/topics/nail-terminology>
CC BY-NC-ND 3.0 NZ

Beau lines

- Numerous causes:
 - Trauma
 - Systemic causes such as myocardial infarction or rheumatic fever
 - Drug induced – most commonly secondary to chemotherapy
 - Systemic infections



Source: DermNet - <https://dermnetnz.org/topics/nail-terminology>
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Beau lines

- Management:
 - Resolves with nail growth
 - Address any culprit drugs if reasonable



Source: DermNet - <https://dermnetnz.org/topics/nail-terminology>
CC BY-NC-ND 3.0 NZ

Case 4

- 35 yo M presents with changes in both first fingernails
- Denies new medications
- Reports history of generalized anxiety



Source: DermNet - <https://dermnetnz.org/image-catalogue/hair-scalp-nail-and-sweat-images>
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Case 4

- Exam reveals central longitudinal grooves on bilateral first digits
- No other skin findings noted



Source:DermNet - <https://dermnetnz.org/image-catalogue/hair-scalp-nail-and-sweat-images>
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Onychotillomania

- Caused by trauma to nail by frequent rubbing of nail fold
- Patient may or may not have insight into habit



Source:DermNet - <https://dermnetnz.org/image-catalogue/hair-scalp-nail-and-sweat-images>
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Onychotillomania

- Associated with psychiatric disorders
- Most commonly affects first digits



Source: DermNet - <https://dermnetnz.org/image-catalogue/hair-scalp-nail-and-sweat-images>
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Onychotillomania

- Management:
 - Physical barriers (i.e. bandaging nails)
 - Consider referral to behavioral therapy and/or psychiatry if appropriate



Source: DermNet - <https://dermnetnz.org/image-catalogue/hair-scalp-nail-and-sweat-images>
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Resources

- [Dermatology images | DermNet \(dermnetz.org\)](https://www.dermnetz.org/)
- Visualdx.com