Hair and Nail Disorders

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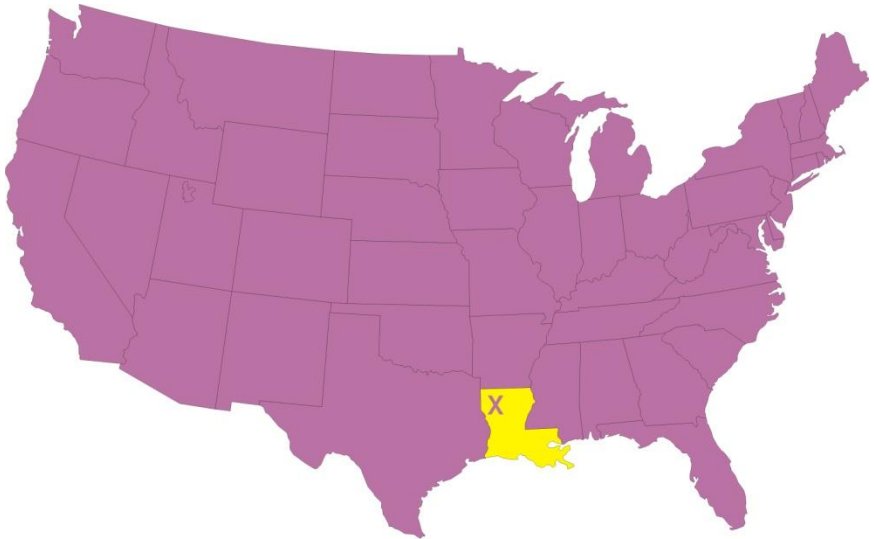


"Well, I think we found where all your hair went."

Hair Classification

- **Terminal (large) hairs**
  - **Found on the head and beard**
  - **Larger diameters and roots that extend into sub q fat**

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Hair Classification

- Vellus hairs are smaller in length and diameter and have less pigment
- Intermediate hairs have mixed characteristics

Courtesy of E.J. Mayeaux, Jr., M.D.

Life cycle of a hair

- Hair grows at 0.35 mm/day
- Cycle is typically as follows:
  - Anagen phase (active growth) - 3 years
  - Catagen (transitional) - 2-3 weeks
  - Telogen (preshedding or rest) about 3 Mon.
- > 85% of hairs of the scalp are in Anagen
  - Lose 75 – 100 hairs a day
- Each hair follicle's cycle is usually asynchronous with others around it

Alopecia Definition

- Defined as partial or complete loss of hair from where it would normally grow
- Can be total, diffuse, patchy, or localized

Courtesy of E.J. Mayeaux, Jr., M.D.

Courtesy of the Color Atlas of Family Medicine

Classification of Alopecia

Scarring	Nonscarring
Neoplastic	Medications
Nevoid	Congenital
Injury such as burns	Infectious
Systemic illnesses (LE)	Genetic (male pattern)
	Toxic (arsenic)
Congenital	Nutritional
	Traumatic
	Endocrine
	Immunologic
	Physiologic

General Evaluation of Hair Loss

- Hx is still most important aspect
  - Shedding vs. thinning
  - Duration of problem
  - Pertinent family illness
  - Grooming practices
  - Medications
  - Serious past or current illnesses

Evaluation

- PE: Focus is on pattern of hair loss
  - Patchy or localized = confined to several areas of the scalp leaving some areas unaffected
  - Diffuse implies uniform density decrease
- Gauge hair fragility
  - Squeeze and roll hair within a gauze pad
  - If fragile, short fragments remain on the pad

Evaluation

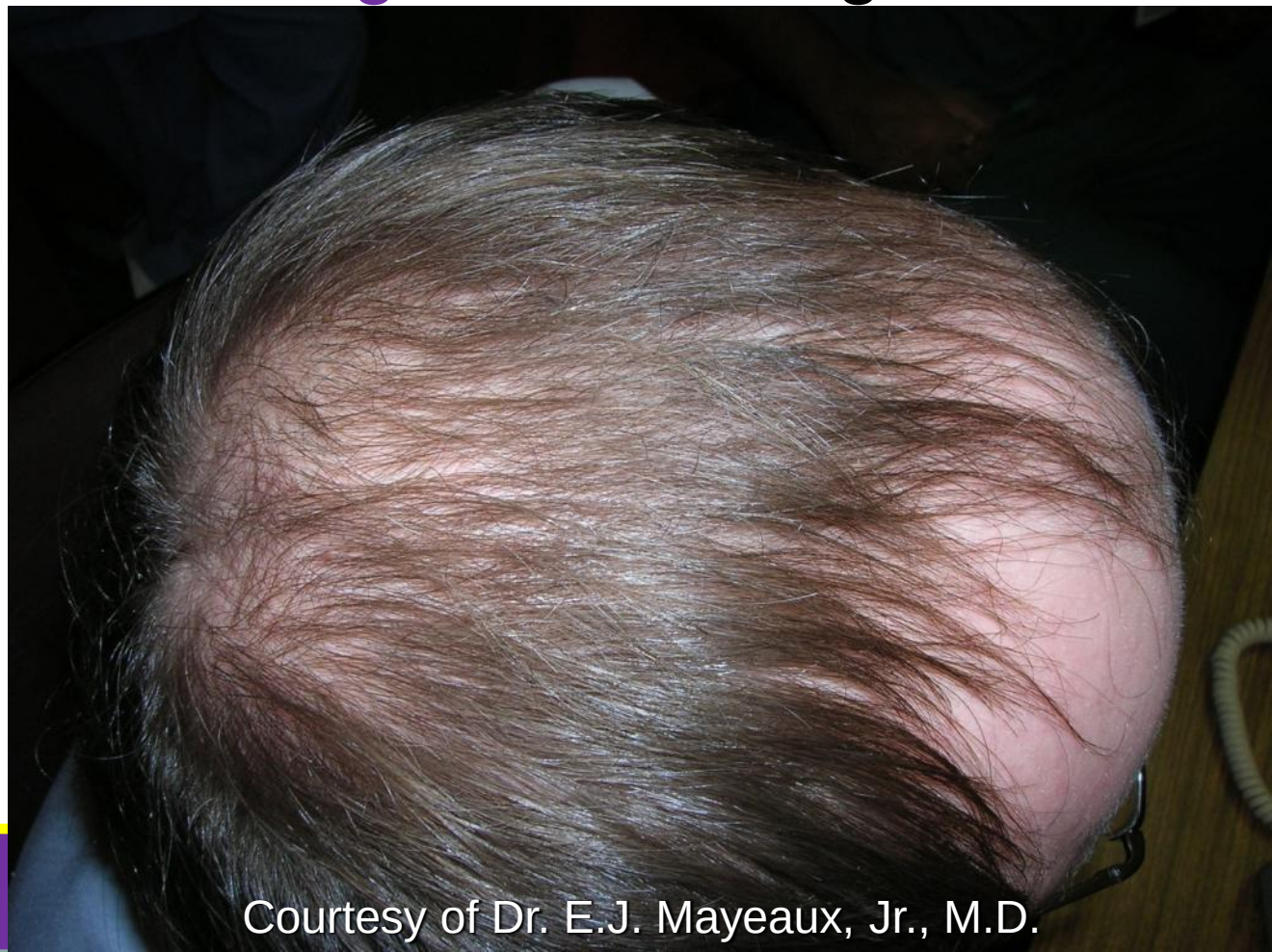
- Examine the scalp looking for erythema, scale, pustules, bogginess, edema, loss of follicle openings, scarring or sinus tract formations
- Not all scalp changes relate to alopecia nor alopecia cause all scalp changes
- May consider scalp punch biopsy
  - Trim hair, inject 1-3 cc of lido with epi, use a 4mm punch, place single suture
  - Attempt to get both affected and normal

Laboratory Studies

- RPR or VDRL
- KOH prep or PAS for fungal elements
  - Use in patchy hair loss
  - Hair shaft stubs from periphery of lesion
  - Can obtain culture for fungi
- Hair pull test
  - Lock of hair is grasped firmly in thumb and forefinger and steady traction applied as fingers dragged along the lengths of hairs
  - Examine hairs microscopically

Androgenic Alopecia

- AKA as male pattern baldness
- Complain of thinning vs. shedding
- 30-40% adults



Androgenic Alopecia

- Multi-allelic trait: obtain history of baldness in grandparents and 1st degree relatives on both maternal and paternal sides of family

Courtesy of Dr. E.J. Mayeaux, Jr.

Androgenic Alopecia

- Usually crown with sparing of occipital and lower parietal fringe of hair
- In women may need to consider androgenic excess

Courtesy of Dr. E.J. Mayeaux, Jr.

Androgenic Alopecia Treatment

- Topical Minoxidil or Oral finasteride
  - ♂ Finasteride 1mg orally = $60/month*
  - ♂ Minoxidil 5% 1ml BID = $17/month*
  - ♀ Minoxidil 2% 1ml BID = $30/month*

    * www.drugstore.com, accessed 4/5/10
- Surgical restoration or excision does not slow or reverse hair loss
- No head to head comparisons
  - Both beneficial compared to placebo

Alopecia Areata

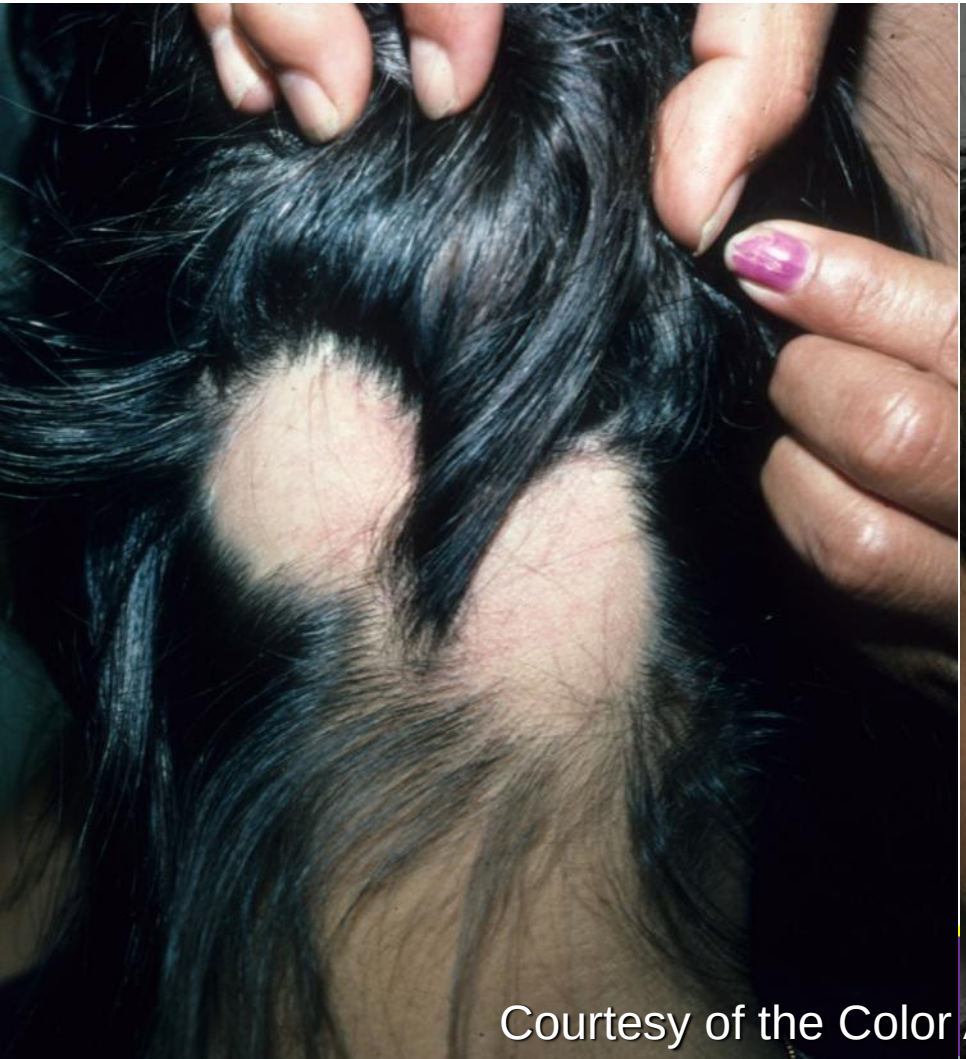
- Usually circumscribed patches
  - Total scalp (Totalis)
  - Entire body (Universalis)

Courtesy of the Color Atlas of Family Medicine

Alopecia Areata

- Scalp may be slightly red or edematous
- Exclamation mark hairs characteristic
  - Short hairs that taper as they approach the scalp surface, then root.
- Poor prognosis
  - Severe disease (esp. Totalis/Universalis)
  - Nail or peripheral scalp disease
  - Onset before puberty
  - Duration >1 yr

Alopecia Areata



Courtesy of the Color Atlas of Family Medicine

Alopecia Areata Treatment

- Reassurance – 80% limited cases regrow
  - May ask for tx even for a small patch
- Mild cases (<10% scalp) - intralesional steroids to decreasing inflammation around the follicle
  - May pretreated with topical anesthetic cream
- Potent topical steroids – little evidence
- Severe forms hard to treat (referral)

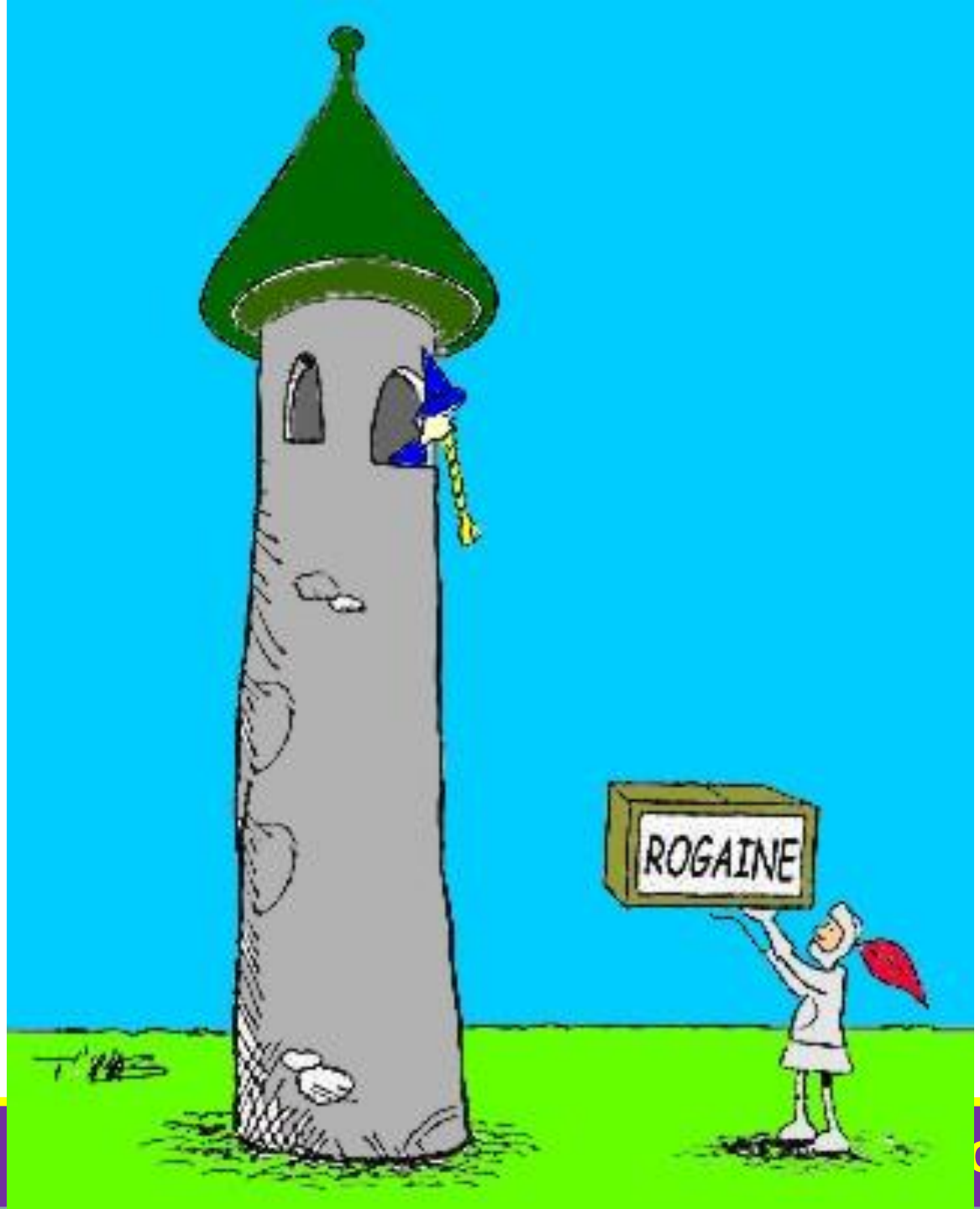
Alopecia Areata Treatment

- Intralesional steroids - triamcinolone acetonide (Kenalog) 10mg/ml
- Inject while advancing needle using only enough to blanch the skin momentarily
- Can repeat q 4 weeks
- Major side effect is skin atrophy

Courtesy of the Color Atlas of Family Medicine

Alopecia Areata Treatment

- Systemic steroids for larger areas
  - May lose hair when tapered or D/C
- Minoxidil topically with steroids but success is varied and is slow
- PUVA, but 1993 study by Healy, et al noted it was not an effective treatment
- Anthralin applied to induce erythema has been tried to induce hair growth and may be tried in combination for refractory cases


ROGAINE

Telogen Effluvium

- Acute hair loss (up to 20% at peak)
- Occurs 3-4 months after a trigger
  - Pregnancy, severe wt loss, major illness or Sx, traumatic psych events
- Women > men
- Anagen hairs precipitated into catagen
- As reach the telogen phase, new anagen hairs develop and cause the hair to abruptly fall out

Telogen Effluvium

- Patient complains that the hair comes out “in handfuls” or pillowcase is covered in the morning with hair

Courtesy of the Color Atlas of Family Medicine

Telogen Effluvium

- Patients often do not associate with precipitating illness due to time interval
- Drugs can cause telogen effluvium
  - PTU, Tapazol, heparin, and coumadin
  - Hypervitaminosis A
- Pull test: > 5 blub (telogen) hairs
- Lab: TSH, Iron studies, RPR or VDRL
- No specific treatment

Trichotillomania

- First identified 1889 by Hallopeau
- Obsession with hair - pt pulls and plucks hair = bald patches or diffuse hair loss
- 2-3% of all people with hair loss

Courtesy of the Color Atlas of Family Medicine

Trichotillomania

- Mean onset age 13
- Dx usually by the pattern of loss, sometimes with unusual shapes
- Women > men
- Geometric patterns

Courtesy of the Color Atlas of Family Medicine

Trichotillomania

- Broken hairs on physical exam

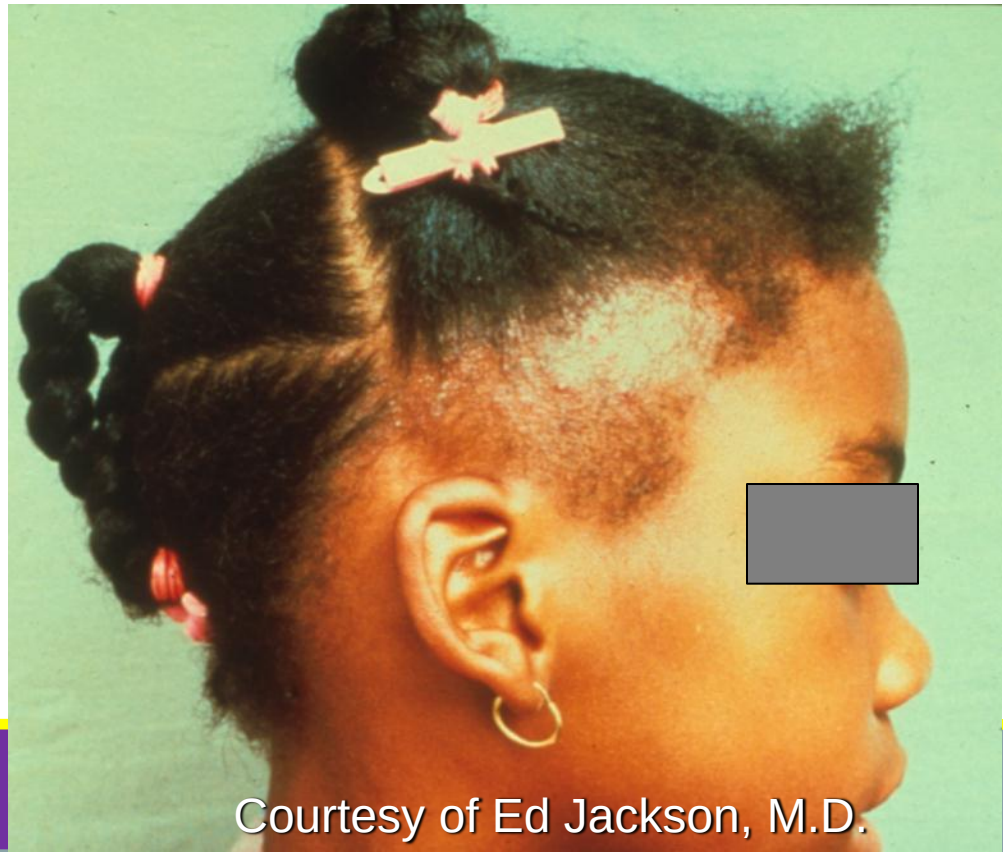
Trichotillomania

- Usually not scarring, but plucking over years may result in immune cell infiltrate
- RPR, TSH
- Behavioral tx
- Wear gloves - difficult to pluck

Courtesy of the Color Atlas of Family Medicine

Traction Alopecia

- Unintentional traumatic hair loss
- Often seen in African-Americans when hair is placed in tight braids
  - Outermost hairs subjected to most tension
  - Given time, a zone of alopecia results between braids and along scalp margin



Courtesy of Ed Jackson, M.D.

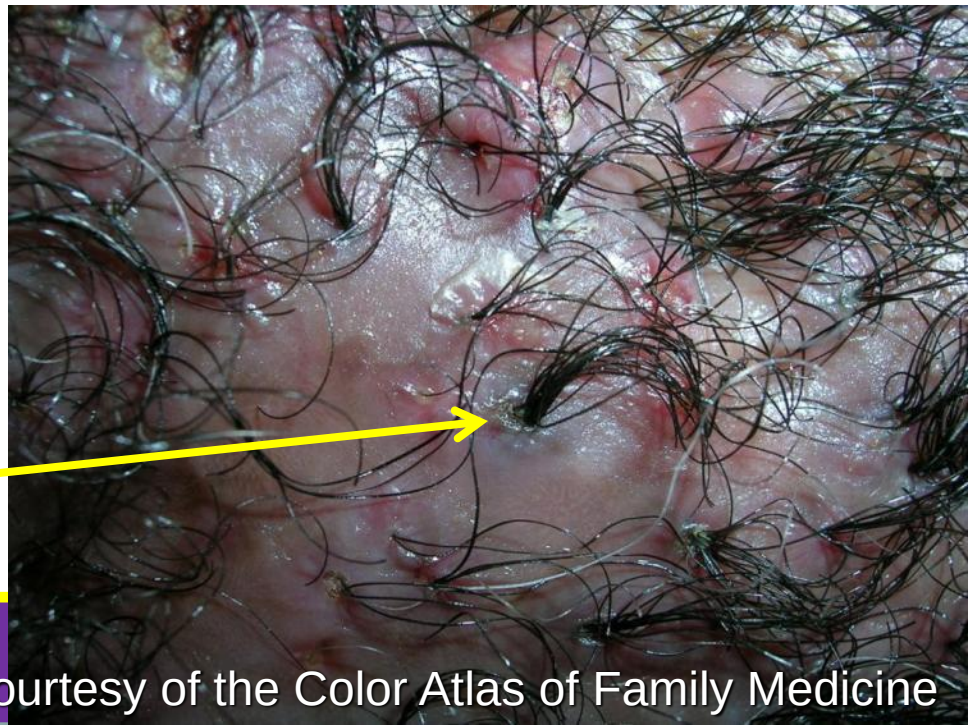
Traction Alopecia

- Usually seen in temporal, frontal and periauricular regions of scalp
- Rx would be hair restoration techniques

Courtesy of the Color Atlas of Family Medicine

Scarring Alopecias

- Very heterogeneous group
- Trend for hair destruction in early or even mild stages of the disease
- Hair loss permanent
- Erythematous papules, pustules, scaring, loss of follicle openings
- Polytrichia



Courtesy of the Color Atlas of Family Medicine

Lupus Alopecia

- Most common scarring allopecia
- Usually affects scalp
- Well circumscribed, erythematous infiltrated patches w/ follicular hyperkaratosis
- Later atrophic smooth depressed hypopigmented patches
- Bx = immune deposits
- Tx = treat lupus

Lupus Alopecia

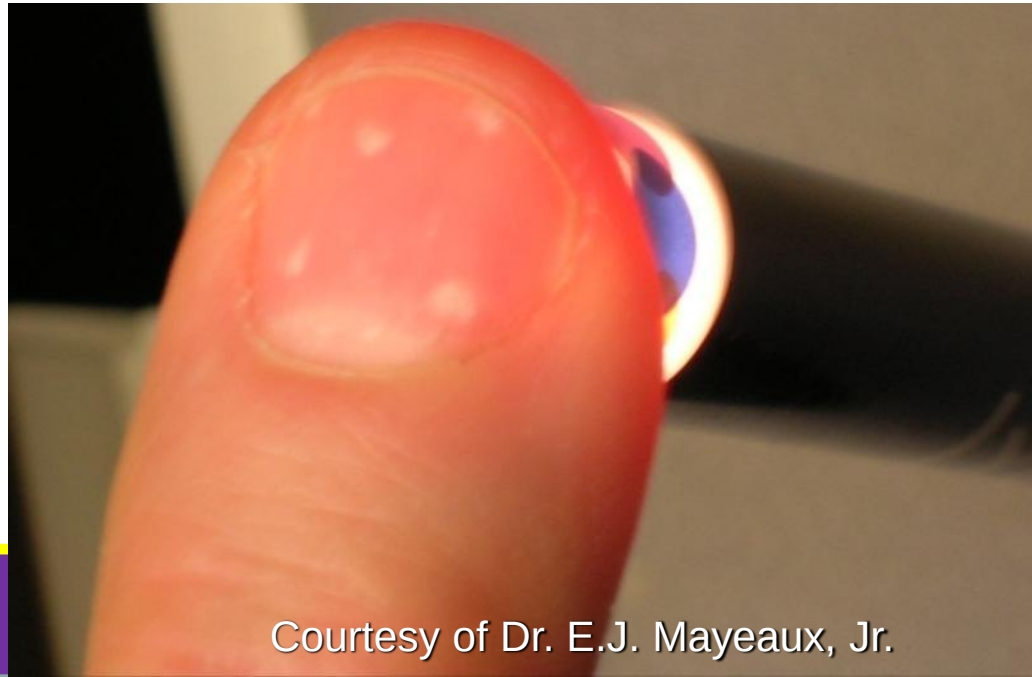
Courtesy of E.J. Mayeaux, Jr., M.D.

"IS THERE ANY CHANCE I CAN GET THAT TO GO?"


Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Examining the Nail

- **Examine lunula**
- **Squeeze the digit tip**
  - **Assess lesion color changes**
  - **Assess refill**
- **Transilluminate**
- **Make simple drawings**



Courtesy of Dr. E.J. Mayeaux, Jr.

Normal Variants

- **Longitudinal ridging**
  - **Benign, parallel, elevated nail ridges**
  - **More common with aging**

Courtesy of Dr. E.J. Mayeaux, Jr.

Normal Variants

- **Leukonychia punctata and transverse striate leukonychia**
  - **Benign, white spots or lines in the nails**
  - **Typically don’t extend width of nail**

Courtesy of Dr. E.J. Mayeaux, Jr.

Normal Variants

- **May result from minor trauma**
- **Most common childhood nail condition**
- **Reassure no Tx is necessary**
- **Behavior modification helpful**

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Habit Tic Deformity

Courtesy of the Color Atlas of Family Medicine

Onychogryphosis

Courtesy of Dr. Richard Usatine

Longitudinal Melanonychia

- **Tan, brown, or black stripe**
  - **Runs longitudinally through nail**

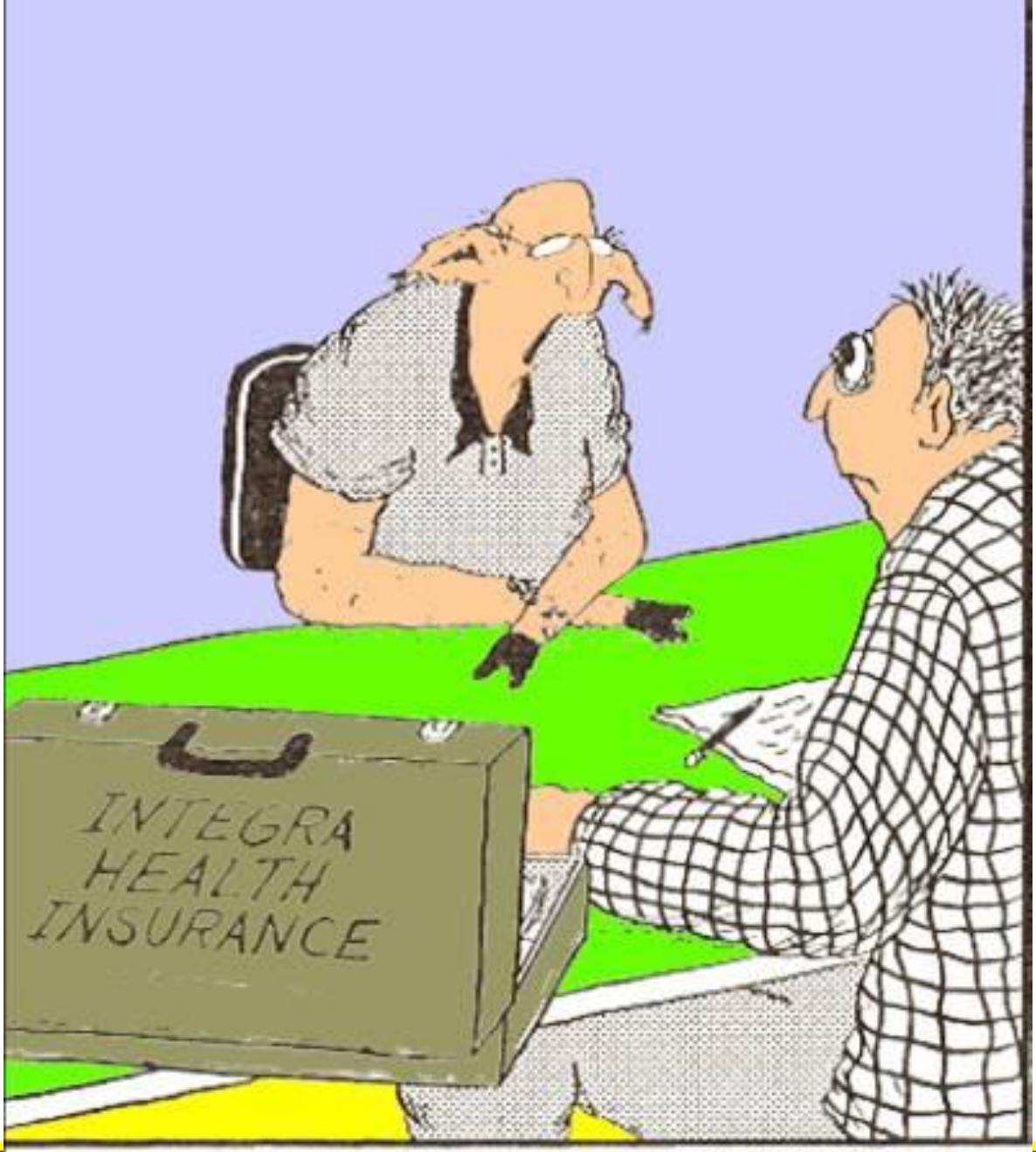
Longitudinal Melanonychia

- **Increased nail melanin deposition**
  - **Simulated by deposition of other chromagins in or under nail**
- **Melanoma must be considered**
  - **Bx if cause not apparent**

Courtesy of Dr. E.J. Mayeaux, Jr.

Longitudinal Melanonychia

- **More common with darker skin**
  - **77% of African Americans >20 years and ~100% >50 years**
  - **10% to 20% of Japanese descent**
  - **Common in Hispanics**
  - **Unusual among whites**
- **More common in frequently used fingers and thumb**



"Define 'pre-existing condition.'"

Subungual Melanoma

- **Small number of patients with LM have subungual melanoma**
- **Separating benign from malignant lesions is often difficult**

Subungual Melanoma

- **45% to 60% arise on hand**
  - **Most in the thumb**
- **On foot, occurs on great toe**
- **Median age = 60s and 70s**
- **Males = females**

Courtesy of The Color Atlas of Family Medicine

Subungual Melanoma

- **Hutchinson's sign**
  - **Periungual spread of pigment into the proximal or lateral nail folds**
  - **Presumes melanoma**
- **Pseudo-Hutchinson's sign**
  - **Benign LM visible through nail fold**

Courtesy of the Color Atlas of Family Medicine

Subungual Melanoma

- **Biopsy if etiology uncertain**
- **Provide adequate tissue**
- **No single bx method best**
  - **Dystrophy less with distal matrix bx**
  - **Appearance less crucial in the toes**
  - **Bx more aggressively in older patients**

Courtesy of the Essential Guide to Primary Care Procedures


CUTICLES
UGLY-CLES

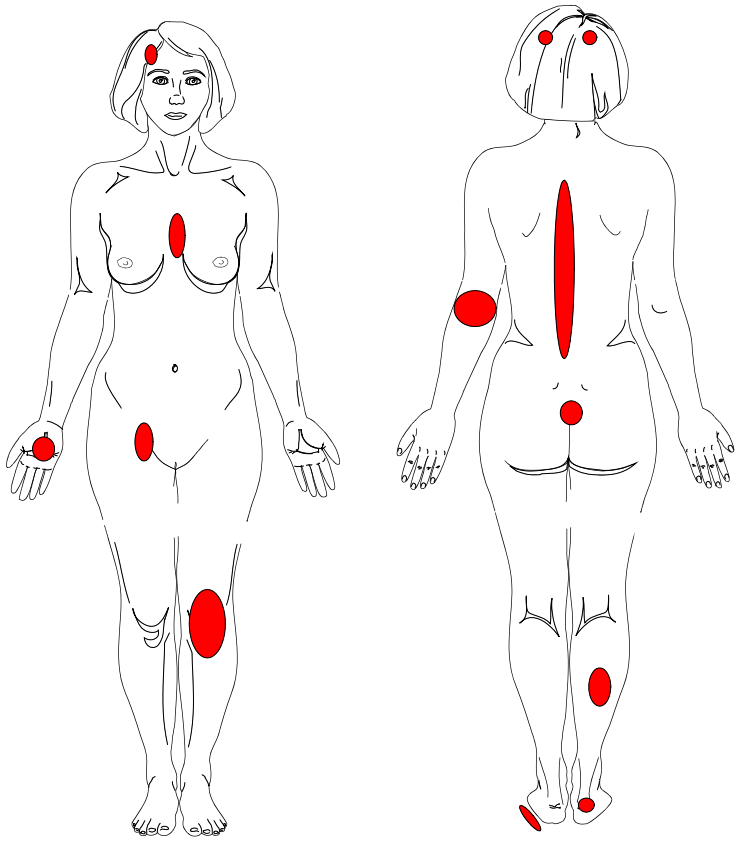
Psoriasis

- **Hereditary skin disorder**
  - **Affects 2% to 3% of U.S. population**
  - **Prevalence increases with age**

Courtesy of Dr. Richard Usatine

Psoriasis

- **Chronic scaling papules and plaques are most common and characteristic findings**



Psoriasis

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Courtesy of Dr. Richard Usatine

Psoriasis

- **Nail involvement - 10% to 50%**
- **Usually coexists with skin psoriasis**
- **Nail involvement = higher incidence of arthritis**
- **Nail plate pitting**
  - **Proximal matrix forms superficial plate**
  - **Pinpoints to punched out lesions**
  - **Not specific for psoriasis**

Psoriasis - Nail Plate Pitting

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Courtesy of Dr. Richard Usatine

Psoriasis - Nail Plate Pitting

Courtesy of Dr. Richard Usatine

Psoriasis

- **Longitudinal matrix involvement produces ridging or splitting**
- **Transverse produces Beau's lines**
- **Intermediate produces leukonychia and diminished integrity**

Courtesy of Dr. Richard Usatine

Psoriasis – Onycholysis/Onychorrhexis

Psoriasis

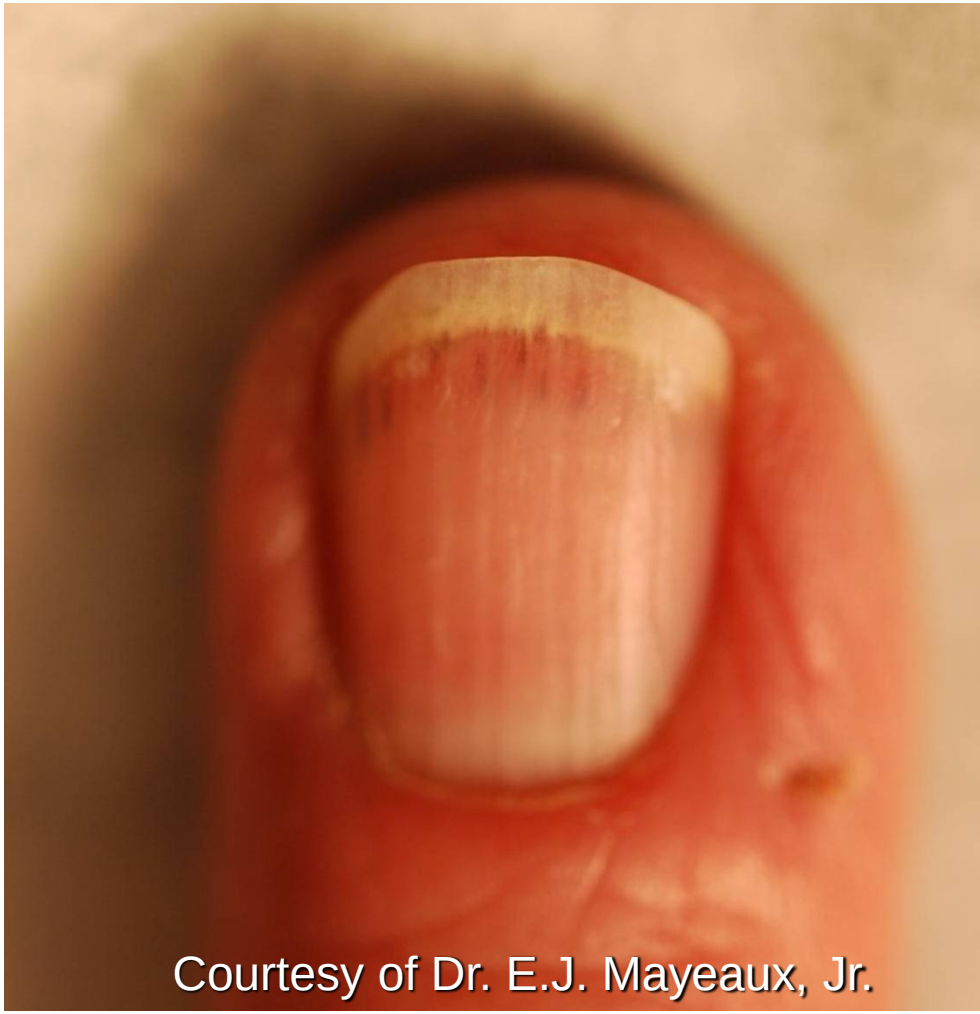
- **Bed psoriasis = local onycholysis**
  - **Oil drop sign** **Salmon patch sign**

Courtesy of Dr. Richard Usatine

Dr. E.J. Mayeaux, Jr.

Psoriasis

- **Vascular dilatation & tortuosity**
- **Splinter hemorrhages of bed**



Psoriasis

- **Distal onycholysis enhances microbial colonization**
  - **Greenish-blue discoloration suggests Candida or Pseudomonas**

Courtesy of Dr. E.J. Mayeaux, Jr.

Psoriasis Diagnosis

- **Must DDx from onychomycosis**
  - **KOH prep and fungal culture**
- **Nail biopsy may be necessary**
  - **H&E and fungal staining**
- **Withhold Tx until a specific diagnosis is confirmed**
  - **Psoriasis and onychomycosis may occur concomitantly**

Psoriasis Treatment

- **Nail disease often refractory**
- **Intralesional corticosteroid injection into the proximal nail fold**
  - **Pain minimized by precooling or block**
  - **Nail bed ds = proximal injection**
  - **Matrix disease = fold injection**

Courtesy of Dr. Richard Usatine

Psoriasis Treatment

- **Mid- to high-potency corticosteroid solution under edge of distal plate**
  - **Don’t force solution under the plate**
  - **Mechanical trauma increases uplifting**
- **Oral and topical Psoralen (PUVA)**
  - **UVB not effective**
- **Oral etretinate, acitretin, and cyclosporine**

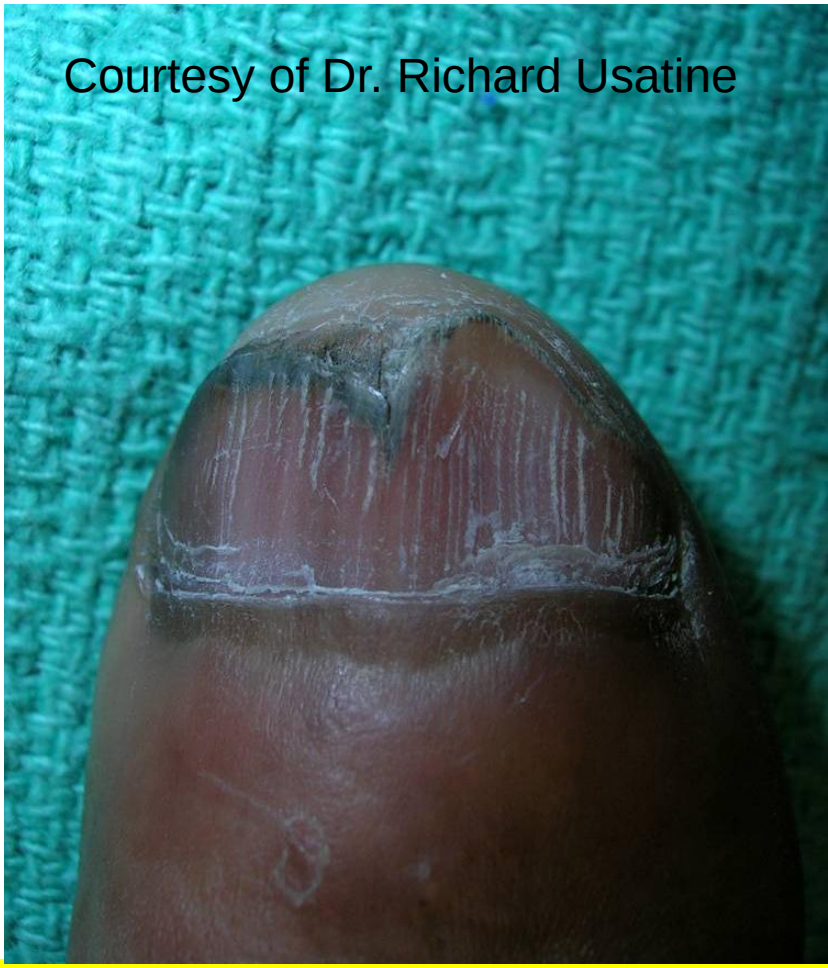
Lichen Planus

- **Uncertain etiology**

Courtesy of The Color Atlas of Family Medicine

Lichen Planus

- **Nail involvement in 10% of patients**
  - **Brittle, ridged nails most common**
  - **Onychorrhexis or splitting**



Lichen Planus

- **Proximal matrix ds produces onychorrhexis or splitting**

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Lichen Planus

- **Diffuse matrix atrophy produces thinning of the plate**
- **Tends to predominate centrally, producing "angel wing" deformity**
- **Pterygium results of matrix scarring**
  - **Specific for lichen planus**
  - **Total matrix scarring - anonychia**

Lichen Planus - Pterygium

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Lichen Planus

- **Onset at any age**
  - **Most common in fifth or sixth decade**
- **Fingernails and toenails affected**
- **Involvement of nail bed or hyponychium produces subungual hyperkeratosis or distal onycholysis**

Lichen Planus Diagnosis

- **Straightforward when the disorder coexists with cutaneous signs**
- **Mycologic studies to exclude onychomycosis**
- **If negative, a nail biopsy will likely be needed to confirm the diagnosis**
  - **Examination should include H&E and PAS staining**

Lichen Planus Treatment

- **Unless matrix scarring has occurred, the disease is treatable**
- **Intralesional corticosteroid**
- **If this fails, Prednisone 60mg daily for several weeks then slow tapering**
  - **Then alternate-day therapy**
- **Oral etretinate and topical PUVA**

Paronychia

- **Acute inflammation of the lateral and/or proximal nail folds**

Courtesy of Dr. Richard Usatine

Paronychia

- **Red, tender, throbbing, intensely painful**
- **Usually caused by infection**
  - **Staph aureus, Strep pyogenes, and Pseudomonas most common**
- **Small abscess forms**

Paronychia

- **Chronic paronychia by Candida**

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Paronychia

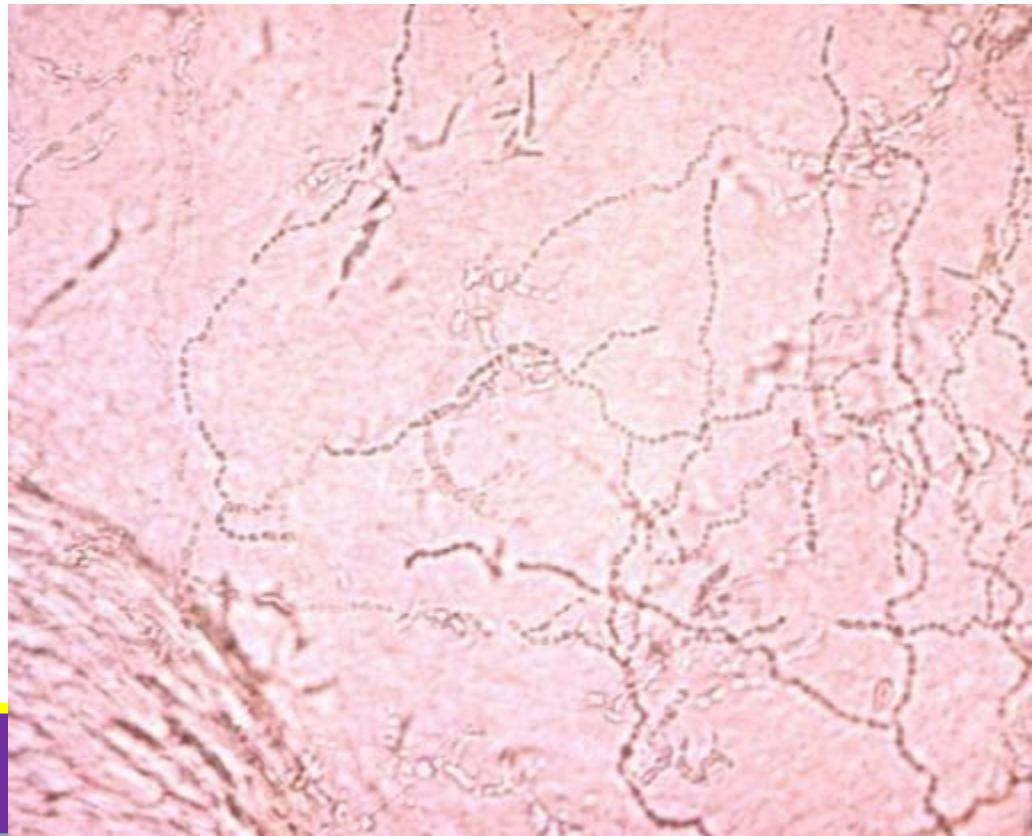
- **Milder cases Tx with warm soaks for 15 minutes two to four times daily, with or without systemic antibiotics**
- **More severe cases require I&D**
- **For chronic paronychia, trauma and irritants must be eliminated**
  - **Broad spectrum antifungals**

Onychomycosis

- **Fungal infection of the nails**
- **Dermatophytes most common**
  - **May be other fungi and Candida**
- **Single digit or multiple digits**
- **Very common in adults**
  - **May also occur in children**
- **Trauma predisposes to infection**

Onychomycosis

- **Trichophyton rubrum and T. mentagrophytes more frequent**
  - **T. violaceum, T. tonsurans, & Scytalidium species**



Distal Subungual Onychomycosis

- **Most common type**
  - **Discoloration**
  - **Debris build-up**

Distal Subungual Onychomycosis

- **Plate crumbles**
- **Accumulation of hyperkeratotic debris**

Courtesy of Dr. Richard Usatine

Onychomycosis Diagnosis

- **Tendency to label any process involving nail as a fungal infection**
- **Confirm species before treatment**
  - **Sabouraud's medium**
  - **Trim excess nail before samples taken**
- **Leukonychia and psoriasis may be confused with onychomycosis**
  - **Also eczema or habitual picking**

Onychomycosis Treatment

- **Treating onychomycosis difficult**
  - **Topical meds ineffective**
  - **Reinfection when oral meds stopped**
- **Oral therapy has best success**
  - **Beware drug interactions**
- **Ketconazole and griseofulvin can cause liver damage**

- A Cochrane review found no evidence of benefit for topical treatments compared with placebo
  - http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD001434/frame.html
- Terbinafine significantly increased the mycological cure rates compared with placebo, itraconazole and griseofulvin
  - http://www.mrw.interscience.wiley.com/cochrane/cldare/articles/DARE-20021632/frame.html

Oral Onychomycosis Tx

Drug	Dose	Course
Griseofulvin (Grifulvin V)	500mg PO qday or 15-20mg/kg/day	4-9 months (f), 6-12 months (t)
Terbinafine (Lamisil)	250mg PO qday or < 20kg: 62.5mg/day 20-40kg: 125 mg/day	6 weeks (f), 12 weeks (t)
Terbinafine (Lamisil) pulse (not FDA indicated)	500mg 1wk/mo x4mo (not thoroughly studied)	6 weeks (f), 12 weeks (t)
Itraconazole (Sporanox)	200mg daily	2 months (f), 3 months (t)
Itraconazole (Sporanox) pulse	200mg BiD or 5mg/kg/day capsules for 1 wk/month	2 months (f), 3 months (t)
Fluconazole (Diflucan) (not FDA indicated)	150mg or 3-6mk/kg once weekly (not thoroughly studied)	12-16 weeks (f), 18-26 weeks (t)
Ciclopirox 8% nail lacquer (Penlac)	Apply daily to nail and surrounding 5mm skin.	Up to 48 weeks.

Myxoid Cysts

- **Most common ungual tumor except for HPV lesions**
- **Dorsum of distal digit between DIP and proximal nail fold**
- **Sermitranslucent, flesh to pink, compressible nodules**

Courtesy of Dr. Richard Usatine

Myxoid Cysts

- **May be associated with evidence of osteoarthritis (Herberdon's nodes)**
- **Localized degenerative tissue reaction**
- **Connecting to joint, complete excision is required**
- **Impinges on nail matrix**
  - **Produces longitudinal grooves and thinning**

Myxoid Cyst Excision

Courtesy of Dr. E.J. Mayeaux, Jr., M.D.

Myxoid Cysts

- **Nonconnecting variety treated with repeated evacuation with a needle**
  - **Cavity and base injection with 0.1 to 0.2 mL triamcinolone acetonide, 5 mg/mL**
  - **15- to 20-sec cryotherapy (2 to 3 mm iceball) freeze-thaw-freeze pattern**
  - **Sclerosants (Na tetradecyl sulfate)**
  - **If unresponsive - excise proximal fold with 2nd intention healing**

Pincer Nails

- **Result of inward folding of the lateral edges of the nail**

Pincer Nails

- **Tube-shaped nail**
- **Nail bed may be painfully enclosed**
- **Lateral pressure from shoes is a likely etiology**
- **Nail removal or reconstruction may be necessary if pain is significant**

Changes Associated with Systemic Disease

- **Beau's lines**
  - **Transverse lineardepressions**
  - **Suppressed nail growth secondary to local trauma or severe illness**
  - **Appear symmetrically in several or all nails**

Changes Associated with Systemic Disease

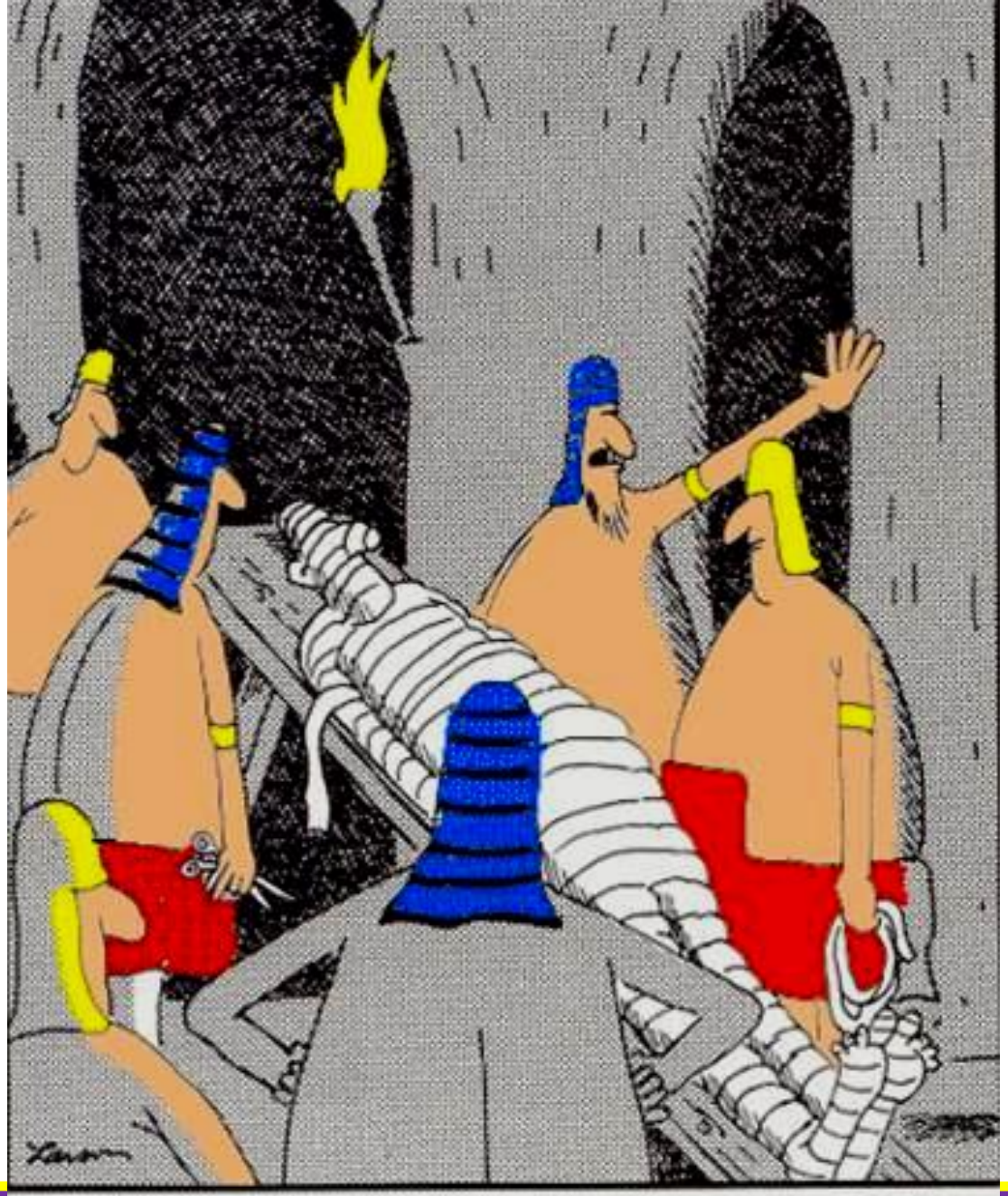
- **Beau's lines**
  - **Grows out over several months**
  - **Time since onset of systemic illness**
  - **Nails grow 1mm every 6 to 10 days**

Courtesy of Jeff Meffert and The Color Atlas of Family Medicine

Changes Assoc. with Systemic Disease

- **Mees' lines**
  - **Multiple white transverse lines**
  - **Historically arsenic intoxication**
  - **Begins in matrix & extends across nail**
  - **Usually single, but may be multiple**
  - **Move distally as the nail grows**
  - **Bx showed plate fragmented**
  - **Chemical analysis of nail or hair**

Courtesy of Dr. Richard Usatine



"OK, folks! … It's a wrap!"