Pediatric derm stuff: what is it and what to do

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Case 1
Hemangioma

- Most common tumor of infancy, more common in females and premature infants
- Glut-1 positive
- Clinical appearance depends on type of hemangioma
- Presents within 1-3 weeks of age and grows rapidly until 4-6 months then starts involuting around 1 year of age
- Larger hemangiomas will not fully go away

Infantile Hemangioma Types

- Superficial (50%)
- Mixed (35%)
- Deep (15%)

Hemangiomas change...
Abortive hemangioma

• GLUT-1 positive
• Present mostly formed at birth
• Minimal proliferation

High risk hemangiomas

• Location affecting vision, airway, or other vital structure
• Lesions on sites that may cause permanent disfigurement (glabella, lip, nose, ears)
• Size/growth potential
• Ulceration risk
• Segmental... think about associated syndromes

Important hemangioma locations

• Periorbital → proptosis, amblyopia, visual axis obstruction, chronic conjunctivitis
• Nasal tip → distortion of nasal anatomy and residual “Cyrano” deformity
• Lips → feeding difficulty, frequent ulceration, and permanent facial scarring
• Ears → cosmetically disfiguring, obstruction of auditory canal and conductive hearing loss
Hemangioma treatments

- **Active nonintervention**
- **Beta blockers** such as oral propranolol (2-3 mg/kg/day divided bid or tid) and topical timolol 0.5% gel
- **Pulsed dye laser**
  - Topical, intralesional, or systemic steroids
- Surgery
- Wound care if ulcerated
- Vincristine, sirolimus (rarely)

Ulcerated hemangioma

- Ulceration is most common complication
  - 10% of lesions during proliferative phase
  - Most common in intertriginous sites, lips, diaper region
- Treat as appropriate with wound care, topical/oral antibiotics, pain management, pulsed dye laser

Early hemangioma with erosion
Hemangiomas do not always go away

Large hemangiomas and underlying issues:
- **Beard lesions** → extensive hemangiomas in this location have 65% incidence of subglottic or upper airway hemangiomatosis leading to croup-like cough, hoarseness, and biphasic stridor
- **Lumbosacral** → possible sign of underlying spinal dysraphism or spinal cord defects as well as anorectal and urogenital anomalies
- **Segmental on face** → involve a broad region, often unilateral; high risk for PHACES

PHACES Syndrome
PHACES
- Posterior fossa brain malformation (Dandy-Walker)
- Hemangioma (usually large, facial plaque-like lesion)
- Arterial anomalies (mainly head and neck)
- Cardiac abnormalities (usually coarctation of the aorta)
- Eye abnormalities
- Sternal clefting and supraumbilical raphe

Port wine stain
- Congenital capillary malformation
  - May be isolated or as part of various syndromes, most common on face
  - Progressively darkens and can develop blebs over years
- Erythematous patches
  - Distinguished from hemangioma by congenital presence and static nature
- Treatment: pulsed dye laser

Sturge-Weber Syndrome
- Facial port wine stain in V1 (+/- V2, V3) ipsilateral leptomeningeal vascular malformation leading to seizures or brain calcifications
- Choroidal vascular malformation leading to ipsilateral glaucoma
Pyogenic granuloma

Case 2

Tinea capitis

- Dermatophyte infection, usually caused by Trichophyton tonsurans in the US
- More common in school age children
- Transmitted by contact with infected humans or pets
- Clues:
  - Scalp hair loss and scaling
  - Occipital lymphadenopathy
- Test: KOH prep and/or swab fungal culture
- Treatment:
  - Oral antifungal such as griseofulvin 20-25 mg/kg/day x6-8 weeks or terbinafine 10-20kg/ 62.5 mg, 20-40 kg/125 mg, and >40kg/250 mg per day for 6-8 weeks
  - Antifungal shampoo for pt and contacts, fomite control
Kerion and ID reaction

Tinea amiantacea

Alopecia areata
**Psoriasis**

- Chronic skin condition usually characterized by erythematous scaly plaques involving the scalp, elbows, knees, and sacral region; can have arthritis
  - Inverse: inguinal folds and axillae
  - Guttate: associated with streptococcal infection, more common in children
  - Koebnerization: eruption at site of trauma
- **Treatment:**
  - Topical steroids, vitamin D, tar, and calcineurin inhibitors if mild
  - Phototherapy, biologics or methotrexate if more severe

**Pityriasis rosea**
Scabies

• Caused by Sarcoptes scabei
• Transmitted from humans by skin contact or infected objects
• Clues:
  – Pruritus, hx of possible exposure
  – Crusted or scaly pink papules or burrows in intertrigous areas, genitalia, webspaces, umbilicus or areola.
• Test: Microscopic exam of skin scraping
• Treatment:
  – 5% permethrin cream total body in children, 8-14 hour (overnight); repeat in 7 days
  – 2nd line, Ivermectin 200 mcg/kg po
  – Wash linens in hot water and treat all close contacts
  – Mild to moderate potency topical steroid and/or antihistamine for pruritus
Case 5

Tinea versicolor

- Caused by Malassezia furfur
- More common in adolescents and adults
- Clue: slightly scaly pink or hypopigmented macules coalescing into patches usually on trunk, can be pruritic
- Treatment: Otc selenium sulfide solution/shampoo or 2% ketoconazole shampoo to affected areas x 10 minutes daily prior to rinsing or topical -azole cream daily; dyspigmentation may last for months

Confluent and reticulated papillomatosis (CARP)
Eczema herpeticum

- Herpes simplex 1 or 2 infection characterized by punched out erosions and vesicles within eczema lesions
- May have fever, malaise, LAD, pain and pruritus
- Transmission from person, usually from cold sore
- Contagious until crusted over
- Tests: Tzanck smear; DFA, PCR, viral culture
- Treatment: Course of oral or IV antiviral such as acyclovir x 1 week; if young, immunocompromised, extensive infection, or lesions around eyes, consider hospital admission

Excoriated atopic dermatitis
Tinea faciei

- Dermatophyte infection of the superficial epidermis
- Clues: Annular, scaly pink plaques, ? pustules; tinea incognito: steroid can take away scale
- Test: KOH prep and/or swab fungal culture
- Treatment:
  - Topical antifungal cream (ex. terbinafine, ketoconazole) until clear, usually 2x/day for 2 to 4 weeks
  - Oral antifungal such as terbinafine daily x 2-3 weeks if extensive or failing topical therapy
  - Look for source to prevent reinfection

Granuloma annulare
Acrodermatitis Enteropathica

- Nutritional dermatitis due to zinc deficiency that presents as erosive well demarcated periorificial and acral scaly, pink plaques
- Can have alopecia, FTT, irritability
- Can be genetic due to SLC39A4 zinc transporter mutation or acquired from low breast milk zinc, zinc deficient in TPN, or GI disorders with poor zinc absorption
- Tests: low serum zinc and alkaline phosphatase
- Treatment: Zinc supplementation, adequate nutrition

Case 9

Drug rash with eosinophilia an systemic symptoms (DRESS) Syndrome

- Drug hypersensitivity reaction characterized by fever, rash, cervical lymphadenopathy, edema of face and hands in addition to elevated eosinophils, liver enzymes, thrombocytopenia and atypical lymphocytosis
- Onset 3-6 weeks after starting a drug
- Usual drug offenders: TMP-SMX, Carbamazepine, phenytoin, phenobarbital, lamotrigine, and allopurinol
- Possible pulmonitis, hepatitis, carditis and thyroiditis
- Treatment: Stop the offending agent, treat with systemic steroids
Case 10

Bullous impetigo
- Caused by Staph aureus infection
- Production of toxin cleaves desmoglein-1 which leads to blisters and erosions
- **Test:** bacterial swab culture for sensitivities
- **Treatment:** oral antibiotic (ex: cephalexin, clindamycin, tmp/smx) for 1-2 weeks

Bullous arthropod
Epidermolysis bullosa

Molluscum contagiosum

• Poxvirus infection of the epidermis
• May become inflamed, itchy, less likely superinfected
• Lesions usually go away in 18 months on average when the immune system sees them
• May observe or treat depending on lesion number, location, and family preference
• Molluscum dermatitis is an immune reaction against the virus and will resolve when molluscum resolve

Case 11
Inflamed molluscum

Molluscum treatments

- Office-based therapy every 3-6 weeks
  - curettage
  - cantharadin green
  - cryotherapy
  - candida Antigen intralesional injection

- Home treatments
  - topical retinoid gel or cream (avoid in patients with eczema)
  - imiquimod 5% cream
  - oral cimetidine x 2-3 months if many lesions

Folliculitis
Warts

- Human papilloma virus
- Highest incidence in 10-19 y/o
- 65% disappear in 2 years when immune system sees warts, some may take longer to go away

Warts (verruca vulgaris)

Wart treatments

- Office based therapy every 3-6 weeks:
  - cryotherapy
  - cantharadin red
  - podophyllin
  - tricholoracetic acid or squaric acid
  - candida antigen skin injection
- Home Treatment:
  - topical salicylic acid with paring
  - 5-fluorouracil cream
  - duct tape
  - imiquimod 5% cream- not good for acral warts
  - for flat warts: may try topical retinoid gel or cream (avoid in eczema)
  - oral cimetidine x 2-3 months if many lesions
Candida diaper dermatitis

- Warmth, moisture, and occlusion lead to overgrowth of candida albicans
- May start as irritant diaper dermatitis
- Treatment: topical antifungal cream (ex. Ketoconazole, nystatin) for 1-2 weeks
Irritant contact dermatitis

Jacquet’s dermatitis (bad irritation)

Psoriasis
**Staph Scalded Skin Syndrome**

- Tender erythematous patches on periorifical and flexural regions, can become generalized; superficial bullae
- Primarily neonates and young children but also in adults with renal failure
- Caused by exfoliative toxin by *Staph aureus* leading to cleavage of desmoglein 1 in upper epidermis
- **Clue:** positive nikolsky’s sign
- **Test:** Bacterial cultures from possible source of bacterial infection
- **Treatment:** pain control, local wound care, oral antibiotic (ex: clindamycin or tmp/smx)

**Stevens Johnson Syndrome (SJS)**

- [Image of skin lesions]
- [Image of skin lesions]
- [Image of skin lesions]
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- [Image of skin lesions]
- [Image of skin lesions]
SJS

- Vesicles or bullae on red base with targetoid appearance on body in addition to at least 2 mucous membranes involved and <10% detached skin BSA
- Caused by drugs or infections such as HSV
- Onset 1-3 weeks after starting a drug
- Usual drug offenders: TMP-SMX, carbamazepine, phenytoin, phenobarbital, NSAIDs
- **Treatment:** stop offending agent and consider treating with intravenous immunoglobulin or immunosuppressive agents if severe

Erythema multiforme

Urticaria multiforme
Allergic contact dermatitis to poison ivy

Contact dermatitis

• Can be linear, angulated, or geometric (outside in job)
• Pink papules or plaques, sometimes with blisters or crusting, can be lichenified if chronic
• **Allergic:** delayed type hypersensitivity reaction, ex. nickel and poison ivy, can have ID
• **Irritant:** toxic effect of agent, ex. saliva, detergents
• **Treatment:** avoidance of triggers, topical/oral steroid course and oral antihistamines
Lip licker’s dermatitis  
(irritant contact dermatitis)

Nickel allergic contact dermatitis  
with Ig reaction

Factitial contact dermatitis
Vitiligo

- Autoimmune skin condition that destroys melanocytes
- Usually symmetric depigmentation not hypopigmentation
- Can be associated with autoimmune conditions such as thyroiditis
- **Test**: Wood's lamp can outline involvement
- **Treatment**: topical steroids, TCIs or excimer laser if mild and NBUVB or systemic immunosuppressants if more severe
Vitiligo regpigmentation

Pityriasis alba

Pigmentary mosaicism
**What to refer to dermatology**

- Recalcitrant mild to moderate skin conditions (inflammatory or infectious) that have failed initial treatments x 2-3 months or severe skin conditions
- Possible rheumatologic or genetic related skin condition
- Vascular lesions and associated syndromes
- Changing/symptomatic birthmarks/nevi or concerns for skin cancer
- Whenever diagnosis is in question for hair, skin, or nail issues

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**Thank you!**