

Things that go bump in the night!

Diagnosing Common Lumps and Bumps in the Pediatric Population

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Division Chief, Fellowship Director
Division of Dermatology
Saturday June 29th, 730 am-9am
Sunday June 30th, 730 am-9am

I have relevant conflict of interests or disclosures.

Objectives

- 1: Review common terms to accurately describe skin lesions when documenting and discussing with your colleagues.
- 2: Identify common childhood skin lesions based on appearance, age and location.
- 3: Recognize what skin lesions would require further referral and/or investigation.
- 4: Counsel patients/families on commonly seen lumps and bumps in childhood.

Treating minor skin problems in clinic

Why?

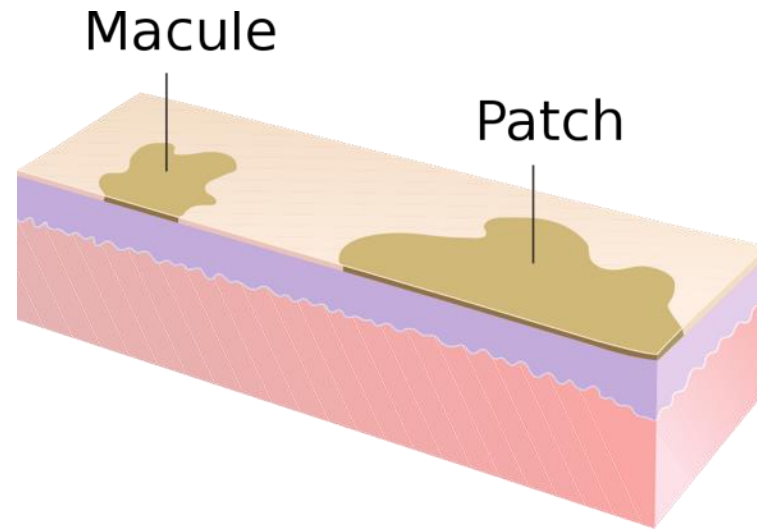
- Increased patient satisfaction
- Increased provider satisfaction
- Long wait times for pediatric dermatology/dermatology
- We can make kids better!
- Save on health care costs

Why not?

- Not enough time during visit
- Not enough training
- Not comfortable enough
- Families request 2nd opinion

*Description and appearance
is everything!*

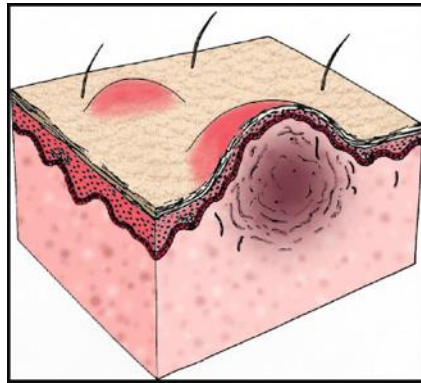
FLAT LESIONS



MACULE: small, flat,
non-palpable, <1cm

PATCH flat, non-palpable, >1cm, slight
amount of surface change acceptable

RAISED LESIONS



PAPULE: small, circumscribed palpable
lesion, elevated above skin surface, <1cm

PLAQUE: palpable lesion
above skin surface, >1cm

- This is a case based learning activity.*
- A handout will be available after the session for your reference on the material discussed.*

Dermoid cyst: about

- Congenital subcutaneous/dermal tumor
 - May not be noted until later on (70% by age 5 y)
- Ectodermal growth, along fusion lines
 - Epithelial lined tract or cyst, may contain adnexal structures
- Soft, rubbery, non-compressible
 - Does NOT transilluminate or increase with Valsalva

Dermoid cyst: about

- Protruding tuft of hair= pathognomonic
- Thickening of the scalp, hypertrichosis, dimpling midline neck or back
- Overlying skin normal, freely moveable
- Progressive enlargement with bony defects

Dermoid cyst: locations

- Common on orbital ridge, near eyebrow (outer 1/3)
- Overlying anterior fontanelle, midline nasal area, submental region, scalp, spinal axis
- 3% nasal midline (columella, nasal dorsum, glabella)
 - 45% with CNS connection!

Dermoid cyst: complications

- Sinus tract/pit may be seen
 - Up to 45% can have intracranial connection
 - Extradural or intradural connection
 - Sinuses are portal for infection= abscesses, osteomyelitis, meningitis (staph)
- Usually asymptomatic
- Can become inflamed, infected, erode bone

Cyst and location: work-up

- Lateral brow/lateral forehead--none
- Midline---MRI (gold standard)/CT scan
 - No procedures until imaging
 - US can be initial screening test, not definitive
- Team approach needed for those with intracranial connection

Differential of other midline facial lesions

- Deep hemangioma
 - Encephalocele
 - Nasal glioma
- Epidermoid cyst
 - Other tumors

TUMOR	CLINICAL FEATURES
Dermoid cyst	Mobile, solid, skin-colored tumor
	May have sinus and hair
	Does not transilluminate
	Non-pulsatile
	Frequent infection
Encephalocele	Blue, soft, pulsatile, compressible tumor
	Enlarges with crying and compression of jugular veins
	May transilluminate
Nasal glioma	Mobile, red-blue, firm tumor
	Non-compressible
	Does not transilluminate
	Non-pulsatile
Hemangioma	Mobile, red-blue, doughy tumor
	Non-compressible
Epidermoid cyst	Mobile, cystic, skin-colored to yellow tumor
	May have sinus opening
Infiltrative tumors	Firm, fixed tumor
	Irregular shaped
	Skin-colored

Pilomatricomas: about

- Benign adenexal tumor, from hair matrix cells
- Head and neck most common (70%)
- First decade of life
- Often solitary, multiple (2-15%) described
- Small to large in size, average 1 cm



Pilomatrixomas: clinical diagnosis

- Firm/hard nodule, fixed to skin, mobile over underlying tissues
- Skin-colored, bluish discoloration, overlying telangiectasias
- ‘Tent sign’, ‘teeter-totter sign’
- Plate-like, “rocky”, NOT smooth/rubbery



Low rate of
preop dx

Pilomatricomas: complications & natural history

- Can enlarge, become inflamed, drain chalky material
- Common complaint is tenderness
 - Often reason for removal
- Spontaneous resolution in some cases (?)

Pilomatricomas: treatment

- Observation when small, not-growing and asymptomatic
- Surgical excision (thin ellipse) w/narrow margins if overlying skin involved
- Small linear incision overtop of lesion when overlying skin not involved
- Try to avoid operating on inflamed lesions → calm down 1st
 - Intralesional kenalog, antibiotics, drainage
- If done correctly, recurrence is rare

Multiple pilomatricomas: associations

- Gardner's syndrome, familial adenomatous polyposis
- Myotonic dystrophy
- Chromosomal disorders (trisomy 9)
- Turner's syndrome and Soto syndrome
- Rubenstein-taybi syndrome
- Glioblastoma, gliomatosis cerebri
- Constitutive Mismatch Repair Deficiency

Juvenile xanthogranulomas (JXGs): about

- Benign, self-healing (3-6 years)
- Non-Langerhans' cell histiocytosis
- Infancy and early childhood
- Solitary (majority) or multiple
- Treatment not usually needed

JXGs: clinical diagnosis

- Early on pink to red, then yellow-orange
- Papules/nodules
- 1mm to 2 cm, any body site
- Overlying telangiectasias, ulceration/crust

JXGs and other findings

- Extracutaneous: Eye, CNS, liver/spleen, lung, oropharynx, muscle
- Ocular disease, 0.3-0.4% cases
 - Asymptomatic mass on iris, glaucoma, hyphema, color change (iris), BLINDNESS
 - **When? Multiple lesions, age <2 years, recent diagnosis**
- NF-1 & JMML (?), urticaria pigmentosa, LCH (concurrent/after)

Pyogenic granuloma

- Common acquired vascular lesion of skin or mucous membranes
- Bright red to red-brown raised and slightly pedunculated or sessile papulonodule
- Base may have a collarette of scale
- Prone to ulceration and bleeding
- REFER as treatment is often surgical removal
 - Shave excision with cautery of base
 - Curettage with cautery
- Role for topical therapy (?) with timolol

Case 4: What is the primary diagnosis?

- A. Molluscum contagiosum
- B. Verruca vulgaris
- C. Folliculitis
- D. Dermatitis

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Molluscum contagiosum

- Common cutaneous viral infection due to pox virus (MCV), self-resolves
- STI or immunodeficiency related (HIV), unlikely in childhood disease
- Skin-to-skin transmission and via fomites
- Often occurs in school-aged children (<8 years)
- Pearly, skin-colored to pink papules with umbilication (2-8mm)
- Often clustered or linear (koebnerization)
- Moist, frictional areas (axillae, groin/buttocks)
- Autoinoculation may spread, worse with eczema

Molluscum contagiosum: complications

- “Molluscum dermatitis” (id)
- Secondary bacterial infections (rare)
- Eyelid lesions: chronic conjunctivitis, superficial punctate keratitis
- Mistaken for child sexual abuse/HPV warts
- “Pseudo-furunculosis” or inflamed molluscum
- Id reaction (Giannotti-Crosti-like) on extensors

Molluscum contagiosum: treatment

Infants/young children

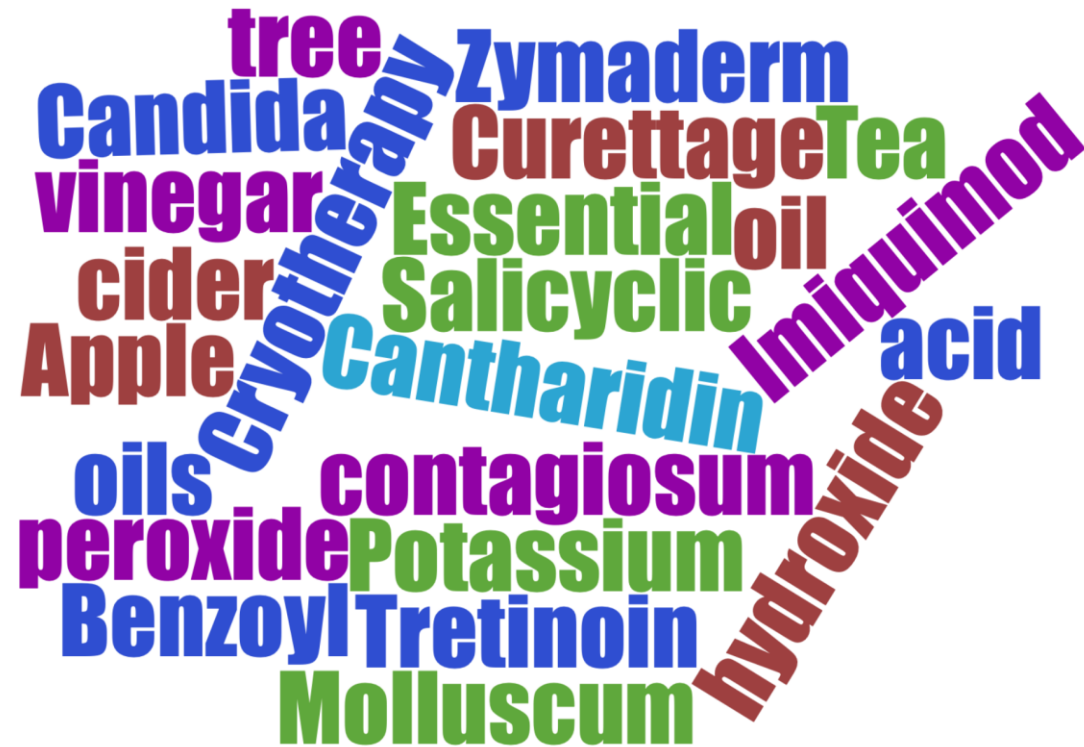
- 1st line: NO TREATMENT
 - Practice gentle skin care
 - Treat any dermatitis/itching
- Zymaderm™
- Topical tretinoin cream
- Bleach bathes

Older children/teens, other options

- Zymaderm™
- Topical tretinoin cream
- Cantharidin=> refer
- Curretage=> refer

Molluscum: to treat or not to treat?

- Self-limited infection
- Often asymptomatic
- Lack of strong evidence for therapeutic intervention



Molluscum treatments: no standard

- Topical agents act as irritants:
 - Tretinoin
 - Benzoyl peroxide
 - Zymaderm and similar OTC remedies
 - (Imiquimod)
 - Salicylic acid
- “Home remedies”
 - Tea tree oil
 - Essential oils
 - Apple cidar vinegar

Molluscum treatments: destructive

- Curettage
- Cantharidin
- Podophylin
- (Laser)

Molluscum “complications”

Treatment of MC Id (“the bumps that rash”)

- Education and reassurance (“watchful waiting”)
- Emollients and gentle skin care
- Very symptomatic patients, short course of TCSs
- Avoid prolonged use of TCIs and TCSs
- Treat any secondary infection

Molluscum BOTE Sign: A Predictor of Imminent Resolution

abstract

Molluscum contagiosum is a common self-limited viral skin infection.

AUTHORS: Niraj Butala, BS, Elaine Siegfried, MD, and Anne Weessler, PA

Cardinal Glennon Children's Medical Center, Saint Louis, Missouri

“Beginning Of The End”

Inflammatory response to MC lesions: consequences of under recognition

- Unnecessary ED, UC visits and hospitalizations (\$\$)
- IV and oral antibiotic prescription
- Side effects and laboratory workup
- Incision and drainage
- Anxiety, worry, stigma (“staph infection”)

Imiquimod (why I don't use it)

Clinical Review

Elektra J. Papadopoulos

NDA 20723

Aldara, Imiquimod 5% Cream

Conclusions: Imiquimod 5% cream, dosed once daily for up to 8 weeks, did not show a statistically significant difference in complete clearance of baseline MC lesions from vehicle cream.

Four subjects (3 imiquimod, 1 vehicle) discontinued because of an AE; the 3 imiquimod subjects discontinued due to an application site reaction. Imiquimod use was associated with a higher rate of skin reactions and hyperpigmentation.

Table 2 Complete Clearance Rate for Molluscum Contagiosum at Week 18

Study	Aldara Cream	Vehicle
1494	24% (52/217)	26% (28/106)
1495	24% (60/253)	28% (35/126)

In both studies, 24% of Aldara treated patients experienced complete clearance compared with 26% and 28% in Vehicle-treated patients, in Studies 1494 and 1495, respectively.

Cantharidin application and occlusion

- PI states to occlude, no ideal time 8-24 hours (use a porous tape)
- Do not use on folds, on face/groin
- Pediatric exposure should be less (4-6 hours?)
- Occlusion may enhance the response and increase side effect profile
- Let medication dry for 3-5 minutes
- Do not apply emollients (such as petrolatum jelly) until washed off

J Am Acad Dermatol. 2008 Aug;59(2 Suppl 1):S54-5. doi: 10.1016/j.jaad.2008.03.025.

Spread of cantharidin after petrolatum use resulting in a varicelliform vesicular dermatitis.

Shah A, Treat J, Yan AC.

MC treatment do's and don'ts

- Avoid treatments (especially destructive) around the eyes or anus
- Caution in flexural areas
- Don't tape or occlude ANY treatments (personal experience)
- Caution applying to large # of lesions especially in covered areas
- Take the time to council on side effects and document
- Return family member phone calls and need for follow-up
- Assume most will not follow home instructions

Periocular molluscum

- Chronic unilateral conjunctivitis, refractory
- Giant, pedunculated types
- Lid abscesses and granulomas
- Follicular conjunctivitis, corneal erosions (slit lamp)

Table 1: Summary of ocular MC case reports/series in children

Country	Gender	Age	History/ clinical sign	Nodule site(s)	# of visits before diagnoses	Initial diagnosis	Treatment	Outcome	*Reference
USA	Male	15yrs	1 month of unilateral conjunctivitis	Lower eyelid	2	NA	Excision	Resolved	Khaskhely et al 2000
USA	Female	16yrs	Chronic follicular conjunctivitis	Lower lid border	2	NA	Excision	Resolved after 6 mths	Ingraham et al 1998
Holland	Female	3yrs	Months of tumor growth on eyelid	Entire lower eyelid	NA	Foreign body Granuloma; lipogranuloma, rare tumour	Excision		van der Meer Maastricht et al 1950
India	Female	18mths	6 months of unilateral conjunctival congestion with swelling of eyelids	Upper, lower lid margins and medial canthus	2	NA	Excision	resolved	Shubhangi 2009
India	Female	9yrs	Eyelid mass	Lower eyelid margin	NA	Granuloma	Excision	NA	Rao et al 1985
	Female	8 yrs	Mass on eyelid	Lower eyelid margin	NA	Granuloma	Excision	NA	
	Male	4yrs	Fungating mass on eyelid	Left lower lid	NA	Granuloma	Excision	NA	
	Male	4yrs	Eyelid cyst	Left upper lid	NA	Chalazion	Excision	NA	
	Male	18mths	Lid abscess	Left lateral canthus	NA	NA	Excision	NA	
India	Male	14yrs	2mths of unilateral conjunctivitis	Lower lid margin	2	NA	Excision	Resolved	Balakrishnan et al 1964
	Male	10yrs	1 mth of unilateral conjunctivitis	Upper and lower lid margins	NA	NA	Excision	Resolved	
		6 mths	3 weeks of eye watering and congestion	Lower lid margin, supra-orbital margin and left temple	NA	NA	Excision	Resolved	

Molluscum pearls summary

- Can trigger eczema flares in AD patients*
 - Flexural location and legs
 - Family history of AD
- Beware of the id (GC-like, molluscum-dermatitis)
- “Pseudofuruncle” or “inflamed molluscum”
- Many treatments → no one is best
- No treatment is an acceptable treatment
 - Non-active intervention (versus benign neglect)
 - Treat the symptoms
 - Treatment should not be worse than the problem

Molluscum pitfalls summary

- Falling into the “parent trap”
- Severe reactions to treatments, especially mechanical/destructive type
 - Imiquimod
 - Podophyllin
 - Cantharidin with occlusion (don't do it)
- Special circumstances:
 - Transplant/immunosuppression/immunodeficiency
 - Periocular
 - Intergluteal cleft

Molluscum resources for families

- Pedsderm.net (patient and families, educational handout)
- JAMA Derm patient education page (Schaffer and Berger)
- cdc.gov

Case 3: What is the diagnosis?

- A. Acne vulgaris
- B. Goose bumps
- C. Keratosis pilaris
- D. Papular eczema
- E. Folliculitis

Case 3: What is the diagnosis? ANSWER

- A. Acne vulgaris
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Case 3 (question 2): What is the first line treatment for this condition?

- A. Topical retinoid cream
- B. Topical clindamycin gel
- C. Benzoyl peroxide wash
- D. Triamcinolone ointment
- E. Topical moisturizer cream

Case 3 (question 2): What is the first line treatment for this condition? ANSWER

- A. Topical retinoid cream
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Keratosis pilaris: diagnosis

- Follicular based papules with rough texture and central “plug”
- Often on a background of erythema
- Upper outer arms and cheeks, most common
 - Can occur on thighs, forearms, upper back/shoulder
- Condition associated with atopy and “sensitive skin”
- Uncommonly itchy and develop overlying xerosis, eczema
 - CAN BE VERY COSMETICALLY DISTRESSING

Keratosis pilaris: treatment

- Young children/infants:
 - Bland emollients after bathing, up to twice a day
 - Gentle non-soap cleansers
 - Avoid strong chemicals like salicylic acid, lactic acid
 - Ceramide containing moisturizers
- Older children/teens:
 - Bland emollients after bathing, up to twice a day OR
 - Keratolytic moisturizers (containing salicylic acid, lactic acid, urea, alpha-hydroxy acid)
 - Gentle non-soap cleansers
 - 2nd line: topical retinoids

Keratosis pilaris: treatment

- May improve over time and into adulthood but often doesn't resolve
- Treat overlying eczema if present
 - Be sure to counsel families that this is NOT treating the KP
- Avoid harsh scrubs and loofahs
- Underlying erythema is difficult to treat → may need to refer
 - Try redness relief products in teens
 - If concomitant acne may try metronidazole cream or azelaic acid

Keratosis pilaris differential

- Acne “pimples”
- Folliculitis/staph infections
- Papular eczema

Keratosis pilaris variants and conditions associated

- Ichthyosis vulgaris
- Xerosis/atopic dermatitis
- Cardiofacialcutaneous syndrome
- Noonan's syndrome
- Other genodermatoses
- Atrophic KP conditions
 - Ulerythema ophryogenes
 - Atrophoderma vermiculata

IF YOU SEE ALOPECIA OR SCARRING OR SYNDROMIC FEATURES=> REFER EARLY



Thank you!

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