Bites, Stings, & Creepy Things

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Conflict of interest statement:

Book royalties - Elsevier

Also no stock in grocery stores that sell Rapini
Format – presentation of 14 cases
Case 1: “Something is biting me”

Courtesy Phil Cohen MD
4-5 mm when unfed!
Bedbugs

• Everyone knows about them, but few patients and dermatologists have seen them.

• Three species: Cimex lectularius is most common.
Bedbugs

• Hide in bedclothes, mattresses, bed frame, cracks in building, under wallpaper

• Often congregate; if many, there can be a sweet odor

• Feed only 5 minutes at night

• Painless bite, but saliva causes urticaria, rarely bullae
Bedbugs

• Also bite chickens, bats, some domestic animals

• Urticarial reaction to saliva injected through sucking tube mouthpart

• Hepatitis B DNA found in bedbugs; unproven to spread this and other infectious agents
Bedbugs Rx

• Heat: 120 degrees F to kill them
• Or freeze them several days
• Insecticides are not highly effective. Pyrethroids will kill them but not prevent egg laying and will not repel them
Bedbugs Rx

• Bedbug sniffing dog
• Nightwatch trap: kairomones and carbon dioxide attractant
• Hotels want to sue bedbugregistry.com
Bedbugs PREVENTION

• Keep suitcase far from bed and keep it zipped up
• Put suitcase on the stand with the metal legs
Case 2: Oct 28, 1988: “painful sting by caterpillar in Houston”

Brought saddleback caterpillar to office with her.
Saddleback caterpillar (welcome to Texas), Acharia stimulea (the caterpillar formerly known as Sabine stimulea), Oct 28, 1988
Case 3

• A 53 year old (at the time) dermatopathologist was minding his own business reading skin biopsies in Houston when he felt a stinging sensation on his neck

• He swatted at his neck, and something appeared to fall off onto the table

(patient name withheld due to HIPAA)
Asp, Puss moth caterpillar = Megalopyge opercularis, Houston TX
Asp or puss moth caterpillar

- Children love to “pet them” because they are nice and furry, but venomous spines are present under the soft hairs.
- Live on variety of trees.
- Crawl around slowly like a slug.
Case 4: A professor of dermatology was trimming his trees in his Houston backyard when he encountered 20 caterpillars on a branch

- He knew not to touch them, so nothing happened
- He left them alone because he knew they would turn into beautiful moths

(patient name withheld due to HIPAA)
Automeris io caterpillar

- Red-white racing stripe ("auto")
- Spines with histamine etc
- Larva of a beautiful moth with IO on the hind wing (hence species name io)
- Common in Houston and the south
Automeris io caterpillar

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Automeris io
Other caterpillars

• Partial list of medically important caterpillars:

Elston D. Cutis 80:110, 2007
Case 5: “These ants got on me”
Fire ant, Solenopsis invicta

Two segments
Rapini R, Ralston J: Fire ant stings
Case 6:

Patient was found in a Houston park, inebriated, lying on a fire ant hill
Fire ant pustules with Pseudomonas superinfection
Case 7: “Attacked by a beetle”
Case 8: “Beetle got me too”
Taking a history is important

- Sir William Osler MD: “Listen to the patient, as the history is giving you the diagnosis.”
- John Knox MD: “Ignore the history, as the patient is throwing you off.”

...So maybe they had allergic contact dermatitis
Blister beetle, family Meloidae, order Coleoptera
Blister beetles

- Common insects in US on flowers and plants, especially tomato and potato
- Adults eat plants; larvae parasitic on grasshoppers and bee eggs
- Can ooze cantharidin from leg joints at will
- Most famous: Lytta vesicatoria in Europe
- Nowadays, cantharidin is synthesized in lab
Blister beetle, Epicauta sp, on my tomato plants, Iowa City, 1981
Black blister beetle, common on goldenrod, Ohio
Blister beetle, Lubbock, TX
Blister beetle, *Lytta magister*
Case 9: “I was holding my puppy and got this itchy rash on my arm”
Like many of my patients, I told him that probably it was some kind of contact dermatitis

• “We’re going to give you a topical cortisone cream to put on your skin”

• “If it does not get better, you might have to come back to get skin patch tested for allergy.”

• “Just to be safe, have the puppy checked by the vet.”
Cheyletiella: four pairs of legs and prominent accessory mouth parts that terminate in hooks

“walking dandruff” does not burrow
Cheyletiella

- C. parasitovorax – mostly rabbits; sometimes gerbils, hamsters
- C. yasguri – mostly puppies
- C. blakei – mostly cats

Survive 10 days off body
Not very resistant to pesticides
Case 10

77 yo F, itchy papules 2 weeks after adopting wild mourning dove

Phil Cohen MD
Found on mineral oil prep of abdomen.

Rx: resolved after lindane and avoidance of bird
Avian mite infestation of humans: gamasoidosis

Suborder Mesostigmata (Gamasida)

Two genera:

Dermanyssus gallinae chicken mite mostly in the nests (can live 5 months without meal – moves fast, bites and leaves, turns red to black when full of blood)

Ornithonyssus sylviarum Northern foul mite and O. bursa Tropical foul mite (mostly live on the birds, live only 3 weeks without host)
Avian mite infestation of humans:
gamasoidosis

Blood-sucking mites

Chickens, canaries, parakeets, seashore birds, sparrows, starlings, tiger finches, wrens, reptiles, gerbils.

Dr Cohen found similar mites on mourning dove from same geographic region.
Avian mite infestation of humans: gamasoidosis

Unlike scabies, lesions spare genitalia and finger webs

Unlike scabies, but like Cheyletiella, will resolve without treatment if source of mites removed (don’t burrow into human skin)

“Nocturnal marauders” that “bite and run”
Case 11

• “Doc, I think I’ve got worms in my head so I shaved my head so you can see them”
“I just got back from Belize, in Central America, where I was looking for reptiles for the Houston zoo.”
Dermatobia hominis

Anus
As in most of my patients, the treatment was curative, and he never came back.
Several months later…

• Another patient, also having returned from Belize, working in oil exploration, complained: “I think I have some kind of worm in my leg, because I can see him moving in this hole.”

(case 12)
Human bot fly, 
Dermatobia hominis

Furuncles with “breathing holes”
Travel to Central or South America
Surgery not needed – use pork fat, beef, petrolatum, gum, etc!
Specific myiasis – a particular maggot prefers a specific host

Nonspecific myiasis – flies lay eggs on any old rotting flesh (such as old leg ulcer)
“Specific” myiasis

- Cordylobia (tumbu fly)
- Dermatobia (human botfly)
- Callitroga (screw worm)
- Chrysomya (Old World screw worm)

- Africa
- Central and S. America
- Warm western hemisphere
- Ethiopia
Specific myiasis (worldwide)

- Hypoderma
- Oestrus
- Gasterophilus
- Cuterebra
- Wohlfahrtia

- Cattle botfly
- Sheep botfly
- Horse botfly
- Rodent botfly
- Flesh fly
Case 13: After a swim
Swimmer’s itch: rare to find the schistosomiasis on biopsy.

Cercarial dermatitis, clam digger’s itch (Long Island), sawah itch (Malaysia), koganbyo (Japan), sedge pool itch (Michigan)

- Caused by cercariae of more than 20 species of non-human schistosomes that usually infects birds, rodents, and other small animals.
- *Trichobilharzia, Ornithobilharzia, Gigantobilharzia, Austrobilharzia, and Orientobilharzia.*
- Over 15 states in the US, more in north central states (Michigan, Illinois, Minnesota, Wisconsin, Nebraska, and the Dakotas). ? avian migration routes
Cercarial dermatitis

• Adult schistosome grows and copulates in the portal vessels of the definitive host, lays eggs in intestinal wall which are eventually excreted in the feces into the water.
• Miracidium (a larval form) hatches from the egg which then infects a water snail, the intermediate host.
• Within the snail, the miracidium gives rise to thousands of fork-tailed cercariae, the infective free-swimming organism causing swimmer’s itch.
• Cercariae are shed from the snail in search of their definitive host, penetrate the epidermis (die within a few days if wrong host
• Outbreaks infecting humans (dead-end or accidental hosts) are more frequent in the summer and seen especially in swimmer’s who have had contact with vegetation in shallow waters.
Non-human schistosome life cycle
• **Swimmer’s itch**: Freshwater, cercariae of schistosomes, papules on exposed skin

• **Seabather's eruption**: Salt water, cnidarian larvae such as Linuche unguiculata, papules under bathing suits
Demodex brevis
Actually we didn't do a biopsy.
Demodex folliculitis, demodectic rosacea, demodicosis, Demodex blepharitis

- Often pustular, or papulopustular
- 10% of all facial skin biopsies exhibit mites
- Difficult to prove definitive role since Demodex is normally prevalent
- Rx: Topical sulfur, pyrethrum, oral or topical ivermectin
Demodex TRIVIA!

• Travel at night, copulate in upper portion of follicle
• Nymphs have 6 legs – adults 8
• Nymphs live 7 days, adult stage 6 days
• They cannot poop – no anus!
• Molecular studies: D. brevis (shorter, lives in sebaceous glands) and D. folliculorum may be polymorphism of same species