Papular Urticaria: Diagnosis and Management

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Relevant Financial Relationships
None

Off-Label Usage
Steroids, phototherapy, antihistamines, camphor, menthol, calamine, DEET, picaridin, oil of lemon Eucalyptus, permethrin
Learning Objectives

- Appreciate the various causes of papular urticaria
- Review the clinical exam findings of papular urticaria
- Recognize the differential diagnosis of papular urticaria to find the correct etiology of the patient’s rash
- Discuss appropriate interventions and treatment options
Outline

- Definition
- Etiology
- Demographics
- Physical Exam
- Differential Diagnosis
- Treatment
  - Medical
  - Psychological
  - Environmental
Definition

- Urticarial tissue reaction of the skin due to contact with an insect or bug, or its secretions
Etiology

- Immune system reaction to insect/bug saliva, body fluids, body parts, feces

- Happens upon repeat exposure (not first)

- Mixed Type I and Type IV reaction
Etiology

- **Saliva:**
  - Anticoagulation
  - Decreased platelet formation
  - Vasodilation

- **Salivary Gland proteins:**
  - Increased IgE
  - Increased IgG
  - Increased CD4 T cells
  - Increased IL-4

- **Body parts and feces:**
  - All of the above
Etiology

- **Things that bite:**
  - Fleas
  - Mosquitoes
  - Bed bugs
  - Scabies
  - Ticks
  - Flies
  - Animal mites (“grain itch”, “hay itch”)

- **Things that don’t bite:**
  - Beetles
  - Locusts
  - Moths
  - Caterpillars
  - Spiders
  - Butterflies
NOW PANIC AND FREAK OUT
Demographics

- **Children ages 2-10 years**
  - 1.5% prevalence
  - 4.5% incidence
  - Under 2: insufficient antigen exposure
  - Over 10: antigen tolerance
  - Industrial countries: urban
  - Developing countries: rural

- **20% of persons, lifetime**

- **Does happen in adults**
  - Males > females (jobs, hobbies)
  - Pregnancy
  - Asia: EBV infection (NK cell upregulation)
Physical Exam

- Urticarial wheals, firm papules, small vesicles
  - 3-10 mm
- Where bugs go!
  - Spares genitalia, axilla
- +/- Local swelling
- Pruritus, discomfort
- Lasts several days
- Reactivation possible
- No residua
  - Scars from scratching or secondary infection
Physical Exam: “SCRATCH”

- **Symmetric**
- **Crops**
- **Rover (pets):** often, not always
- **Age 2-10 years**
- **Target-like hives**
- **Confused parent and provider**
- **Household: single member affected**
Differential Diagnosis

- Often diagnosis of exclusion
- Good history and physical
- Often culprit bug/insect never found
Differential Diagnosis

- Prurigo nodularis
- Allergic contact dermatitis
- Id reaction
- Atopic dermatitis
- Drug rash
- Early varicella infection
- PMLE
- Folliculitis
Treatment

- Remove or avoid the insect/bug

- “The 3 P’s”
  - Protective clothing
  - Pruritus control
  - Patience!
Treatment

- **Medical:**
  - Topical steroids
  - Intralesional steroids (nodules)
  - Oral steroids: 10 days, 1 mg/kg taper
  - Scabies treatment (if present)
  - Phototherapy
  - Oral antihistamines
  - Camphor, Menthol, Calamine

- **Psychological:**
  - Rapport with family
  - No blame
  - No guilt or stigma
  - Phone calls and followup
  - Explain why only one person affected
Treatment

- **Home environment:**
  - Fumigation if needed ($$$$)
  - Pet care if needed ($$$$)

- **External environment:**
  - Protective clothes
  - DEET 30% (over age 2 years)
  - DEET 5% (under age 2 years)
  - Permethrin on clothes (one month!)
  - Picaridin (avoid eyes)
  - Oil of Lemon Eucalyptus (30-45 min)
  - Sonic repellers are NOT effective
Summary

- Papular urticaria is a common skin disease in children.
- It causes much worry and social concern (and anger).
- Diagnosis depends on a good history and keen physical exam skills.
- Management depends on avoidance measures and a solid patient-parent-provider relationship.
Suggested References

Thank You