Contact Dermatitis Challenges for the General Dermatologist

Susan Nedorost, MD
Contact Dermatitis: Challenges for the General Dermatologist

Susan Nedorost MD
Professor of Dermatology and Environmental Health Sciences

CME Activity Objectives

- Name 3 scenarios that should prompt consideration of the diagnosis of allergic contact dermatitis.
- Explain patient education at each step of taking the contact dermatitis history.
- Identify allergens that should be tested in patients with specific occupations, patterns of dermatitis, and history of atopic dermatitis.

For our purposes today, dermatitis indicates the clinical equivalent of histological spongiosis.

- is synonymous with eczema
- is expected to be multi-factorial in most cases

Think of allergic contact dermatitis

- When prescribing or refilling corticosteroids
- When atopic or stasis dermatitis is poorly controlled
- When dermatitis begins in adulthood

New patient with hand dermatitis for one year, spreading to other areas

Disclosure Statement

I, Susan Nedorost, MD, do not have any relevant financial interest or other relationships with a commercial entity producing health-care related product and or services.
Lack of flexural/interdigital involvement argues against atopic, irritant, allergy to fluid

Forearm involvement suggests allergic contact, but can be irritant to cleanser e.g. kerosene

Neck/face involvement with hands strongly suggests contact allergy

History of Atopy
- Barrier deficit increases irritant dermatitis risk with secondary sensitization e.g. wet work
- Genetic predisposition means risk early in life when tolerance is the norm to foods, dust, pollen
- Biofilm/commensals play a more prominent role in atopic dermatitis

If endorses history of childhood flexural dermatitis:
- Consider treatment with systemic anti-staph and anti-yeast antibiotics before patch testing
- Increased suspicion for ‘weak’ allergens e.g. propylene glycol
- Increased suspicion for protein allergens and allergens with both immediate and delayed hypersensitivity e.g. latex

Adult atopic dermatitis
- Is rare without childhood history!
- Is not a contraindication to patch testing!
**Hand Hygiene:** Irritant dermatitis is required for sensitization, except for very strong sensitizers that function as their own irritant

- Ask about:
  - wet work  
  - glove usage  
  - wintertime chapping  
  - hand cleansers

**Hand hygiene**

- Wear cotton under occlusive gloves for wet work  
- Minimize hand washing in low humidity conditions  
- Apply an emollient free of identified allergens before hands dry

**Occupation**

- Job title  
- Previous jobs  
- Effect of time away from work (days away vs. weeks away)  
- Personal protective equipment

**Occupational Dermatitis Risks**

- Any wet work that promotes irritancy: hairdressers, machinists, food handlers  
- Contact with strong sensitizers e.g. adhesives/acrylates/resins  
- Workers have been advised to use PPE because of risk of allergy

**Occupational Dermatitis**

- Is not detected by standard screening series in most cases!

**Patient Education Before the Exposure History**

- Delayed hypersensitivity—poison ivy as a model  
- Infrequent exposures can cause constant rash  
- Sticky substances/ airborne exposure can cause dermatitis in unexpected sites  
- Secondary allergy is common  
- More than one allergy is common
### Our patient
- No history of childhood flexural dermatitis or asthma; has hayfever
- Works as a ceramics maker for 3 years
- Washes hands with abrasive soap about 5 times per shift
- Does not think this rash is allergic; worried about infection

### Swab culture from a fissure
- Will often grow staph (always in atopics)
- Antibiotic treatment is not mandatory but can be helpful especially with pain
- Colonization will return until dermatitis is resolved; bleach baths/swimming in chlorinated pool may help

### Skin biopsy
- Helpful if connective tissue disease is suspected
- Not very helpful to distinguish ACD/photoallergic contact from other drug allergy/photoallergy

### Exposure history
- Contactants at work/home
- Personal care products
- Contactants for hobbies
- Medications Rx, OTC –topical and systemic
- Prior treatments
- Prior reaction to any personal care product, jewelry, etc

### Referral for Patch Testing
- Discuss delayed type hypersensitivity vs. immediate type tests
- Discuss treatments that may interfere with testing, and those that will not
- Discuss bathing/perspiration restrictions
- Have patient bring own products and MSDSs

### Our patient
- Adds resin to sand to make tiles
- Has used several store-brand lotions, Neosporin, and Benadryl cream on rash
- Has used 2 different Rx salves from PCP
- No other meds; no other medical sx's
References would help here!

- What kinds of resins can cause allergy?
- What is the best patch test concentration and vehicle for the patient’s own product?

Standard Series is tested

- Quaternium-15 positive 1+ at days 4 and 7
- Formaldehyde doubtful positive at day 4 and negative at day 7
- Fragrance mix 1 doubtful positive at day 4 and negative at day 7
- All other sites negative

Formaldehyde is often irritant

- Decrescendo pattern in this patient suggests irritant response
- Reaction to related quaternium-15 suggests true allergic response
- If free formaldehyde avoidance is advised, also avoid all formaldehyde releasing preservatives

Fragrance

- Tested as mixes
- Some fragrances will be tolerated
- If tolerating a scented product without rash (e.g. deodorant in this patient) can safely continue to use this

Software to generate alternative lists is useful here!

- CAMP is a membership benefit of the American Contact Dermatitis Society
- Can select quaternium-15 with or without cross reactors
- Can select “standard” or “extended” fragrance series
- Result is a “shopping list” that patients can update on their own with unique log-in
Caution

- If only standard series tested, remember that this is not sensitive, even if there are relevant positives!
- Based on pattern, consider photopatch testing, textile series, or occupational series

At one month follow-up

- Rash is no better and no worse
- Patient is now certain this is not an allergy
- The patient asks for blood tests to find cause of the rash

Antigen specific IgE testing

- Is not instructive for dermatitis
- Is useful for occupational asthma and contact urticaria
- Examples: latex, isocyanates, ammonium persulfate

Occupational Dermatitis

- Employer’s prefer accommodation to time off
- Always OK to file for worker’s compensation if work cause is suspected
- Barrier creams/ personal protective equipment often fail to control exposure adequately to manage ACD

Occupational Exposures

- Talk to safety officer if possible
- Be as specific as possible re what and how to avoid
- Remind employer that MSDSs do not have to list all components

ACD to phenol formaldehyde resin confirmed

- Used in ceramics (countertops, pool balls, etc)
- Used in circuit boards
- Used in coatings and adhesives
<table>
<thead>
<tr>
<th>BWC</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Will pay for work-related dermatitis when private insurance will not</td>
</tr>
<tr>
<td>• Helps to protect worker’s rights</td>
</tr>
<tr>
<td>• May offer vocational rehabilitation</td>
</tr>
<tr>
<td>• Increases physician’s paperwork burden</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Some Actions to Consider</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Purchase an occupational dermatology text</td>
</tr>
<tr>
<td>• Have a plan for testing or referring occupational dermatology patients</td>
</tr>
<tr>
<td>• Contract with BWC</td>
</tr>
<tr>
<td>• Start patient education about contact dermatitis early in the history-taking</td>
</tr>
</tbody>
</table>