Patch Testing interactive workshop

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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.

Patch Test Workshop

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CME Activity Objectives

• List the advantages and disadvantages of short and long intervals between patch test application and interpretation.
• Explain patient education at each step of the patch test process and interpretation.
• Demonstrate use of the equipment and materials needed to perform patch and photopatch testing.

Topics in workshop

• Reading patch tests
• Applying patch tests
• Determining relevance
• Financial aspects of patch testing
• Atopy patch testing

The most standardized aspect of patch testing is

1. Number of allergens in standard series
2. Order of placement of allergens
3. Grading strength of reactions
4. Reading intervals

Standardized aspects of patch testing

• Placement-upper back if possible
• Duration of occlusion-48 hours
• Reading-twice, but intervals vary
• ICDRG reading scale- 0, ?,1+,2+,3+, IR
Reading

- Scale-only useful to compare first/final read
- Irritant reactions are false positive
- Angry back; atopic back complicate reading

Strength does not indicate relevance

- 1+ irrelevant reaction to thimerosal
- Doubtful relevant reaction to propylene glycol at day 7

Bullous reactions can be allergic or irritant

- 3+ allergic reaction has spread beyond the test chamber and induration

Irritant reactions have disproportionate epidermal to dermal change

Atopic and Dermatographic Flare from tape

Angry Back
Multiple Positives (form- releasers, metals, neomycin, bacitracin)

If late read is day 7:
- Higher incidence of positive patch tests to late reactors: neomycin, corticosteroids, disperse dyes, gold
- Lower incidence of positive patch tests to early reactors: Balsam of Peru, carba, thiuram

Day 7 read
- Doubtful reactions to weak allergens often relevant e.g. propylene glycol, sorbitan sesquioleate, vanillin
- Irritant reactions usually resolved
- Common marginal irritants: potassium dichromate, formaldehyde, methylidibromoglutaronitride, cocamidopropyl betaine, glutaraldehyde

Relevance
1. Indicates a true positive reaction
2. Indicates the allergen is causing the rash
3. Can always be determined at the time of final reading

Poision Ivy Analogy for Relevance
- “if we tested you to poison ivy, you might have a true allergic reaction”
- “but, that doesn’t mean that your current rash is caused by poison ivy”
- “it does mean you should avoid poison ivy in the future”

Factors to determine current relevance
- Is pattern of rash consistent with pattern of exposure?
- Is there known exposure within the past month (if rash is active now?)
- Definite relevance if rash improves 80% with one month of complete avoidance OR
- Repeat open application test replicates rash
I use checklists at work
1. For patient safety
2. To comply with institutional requirements
3. Rarely or never

Patch Test Checklist
- Verify pt and chart with two identifiers
- Reconcile order against application
- Verify no systemic or topical immunosuppressives to application site
- Verify patient education
- Draw diagram of application/landmarks

Patient Education
- Stand in “military position” during application
- Note loose patches
- Do not wash back until after final read!
- Avoid sun

Photo-patch test sunscreens and plants
- The door of PUVA booth works best
- Position 12 inches away
- 10J of UVA unless photosensitivity is suspected e.g. actinic reticuloid
- Apply tests in duplicate and expose only one set

Avoid application over spine
Test own ‘stay on” products
I am paid
1. For RVU and non-RVU revenue
2. For my RVUs only
3. By salary

Financial facts
• Patch test application does not generate RVUs
• Pre-packaged systems cost more, but involve less labor for preparation
• I usually bill level 1 follow-up visit (nurse) for first read, and level 2 or 3 follow up visit for second read

Overhead
• Expiration dates
• Must load volatiles (fragrances, acrylates) just before application
• Must keep volatiles cold

Filling chambers
• Remember patch will be reversed upon application
• 5 mm ribbon of pet
• 1-2 drops of liquid onto filter paper secured on back with pet

Non-reimbursable
• Pharmacy charges to dilute own samples for testing
• Testing self and volunteer co-workers as controls for non-standard allergens

Priceless
• Curing a patient
• Returning a patient to the workforce
• Learning about our environment
• Interface with scientists in industry and public health
Other tools of the trade

- DMG test for nickel

Office stock and patient order

Diets for Systemic Contact Dermatitis—CAMP

- Balsam of Peru
- Propylene glycol
- Sorbic acid
- Nickel/cobalt

Testing in Children

- Avoid contact of patches with diaper—moisture will wick and loosen patches
- Caution parents that removing patches can be uncomfortable
- Test only to allergens already in child’s environment

Atopy patch testing

1. I have never heard of APT
2. I have heard of APT but never referred a patient
3. I have referred a patient for APT
4. I perform APT
Filaggrin defects impair barrier

- Perioral inflammation from wet/dry cycles promotes sensitization to food proteins through inflamed skin
- Early introduction of solid foods (?when skin not inflamed) promotes tolerance

UHCMC atopy patch series

- Cow’s milk
- Soy
- Wheat
- Egg white
- Ragweed
- Birch
- Bluegrass
- Dust mite
- Birch related foods: apple, potato, celery, stone fruits, carrot, hazelnut, walnut

Atopy patch tests

- 12mm chamber
- 48-72 hour read
- Strong reaction are multi-papular rather than bullous
- Shown is strong reaction to birch; irritant reaction below to dust mite

Questions?