PATCH TESTING

Patch testing is the "gold standard" for diagnosing allergic contact dermatitis and identifying causative agents. The procedure aims to reproduce "in miniature" an eczematous clinical reaction by applying non-irritating concentrations of allergens under occlusion on the intact skin of patients with suspected allergic contact dermatitis. Patch testing is an in vivo visualization of the elicitation phase of delayed, type IV hypersensitivity reactions and is better than relying on history alone, trial and error, or in vitro tests.

Indications for patch testing include:

1. Patients with undiagnosed dermatitis – hand, foot, facial stasis, etc;
2. High risk occupations for contact dermatitis – health care workers, dental assistants, cosmetologists, machinists, rubber and plastic workers, etc.;
3. Suspected allergens and occupational causes;
4. Patients with highly suggestive history or distribution of dermatitis;
5. Other undiagnosed dermatitides, etc.

Individual chemicals suspected of causing allergic reactions are applied separately to the upper part of the back and observed for reactions twice: when the patch tests are removed at 48 hours, and again, for a delayed reading up to 96 or 120 hours after initial application. The more common causes of allergic contact dermatitis include:

1. Metals – nickel and cobalt;
2. Topical antibiotics – neomycin and bacitracin;
3. Fragrance ingredients:
   A. Myroxilon pereirae (balsam of Peru);
   B. Fragrance mix;
4. Preservatives – quaternium-15 and other formaldehyde releasers;
5. Rubber chemicals – carba mix, thiuram mix; etc.

Standardization of materials and methods used for patch testing has facilitated more accurate diagnosis and comparison of data among clinics around the world. Patch test devices include:

1. The thin layer rapid use epicutaneous (**T.R.U.E.**®) test in which the allergens are crystallized, micronized, or emulsified into preloaded gels.
2. Petrolatum and aqueous - based allergens which require individual loading onto **Finn Chambers**® on **Scanpore**® **Tape**.

Screening series of allergens are available with both devices, but further testing with additional allergens is often required.

Complications from patch testing with standardized commercially available allergens are uncommon, and the procedure itself is underutilized. Although easy to perform, interpretation of patch test results requires experience and skill. **Epicutaneous patch testing** is most often performed by dermatologists and should not be confused with **intracutaneous prick testing**, which is typically performed by allergists who use it for diagnosing immediate- type allergic reactions.

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