The hand is a common site for dermatitis. This area remains a diagnostically complex region due to the multifactorial nature of hand dermatitis, and both endogenous and exogenous factors play a role in this condition. The exact prevalence is difficult to determine because many cases may go unreported. With 20%-35% of all dermatitides involving the hands, it is estimated that 2%-10% of the general population is affected by hand dermatitis. Contact dermatitis has been reported to be the most common type of dermatitis involving the hands. Several studies have highlighted that hand dermatitis is common among people in occupations involving wet work. The profession traditionally considered “high risk” for women is hairdressing and, for men, construction.

**Presentation**

Developing a differential for potential contactants in hand dermatitis can be challenging. A helpful starting point may be to question the possibility of occupational causes. Risk factors include the use of gloves and chemical exposure. Wet work is also a very important risk factor for hand dermatitis. Exposing the hands to a wet environment daily can lead to maceration of the stratum corneum and impairment of the protective barrier. In these cases, the hands become more susceptible to irritants and potential allergens. According to a cross-sectional analysis by the North American Contact Dermatitis Group (NACDG), occupational hand dermatitis is frequently related to gloves, bacitracin, preservatives, metals and fragrance.

Gloves are an example of occupational contact dermatitis occurring due to personal protective equipment (PPE). Gloves are often used in fields such as healthcare, cleaning and food preparation. The pattern seen with glove dermatitis is somewhat analogous to that seen with shoe dermatitis on the feet. The thinner skin of the dorsal hand and wrists tends to show a patchy dermatitis while there is relative sparing of the palmar skin. The dorsal forearm may also be involved. Chemicals used in the production of rubber compounds called “rubber accelerators” are considered to be the most common cause of allergic contact dermatitis.
dermatitis due to gloves. Among the rubber accelerators, thiurams are the most frequently implicated allergen in glove dermatitis. Carbamates, mercaptobenzothiazole, mixed dialkythioureas, chromates and p-phenylenediamines are other potentially relevant allergens in gloves.

An allergy related to rubber components can also be found in many other sources. An isolated and patterned or geometric dermatitis of the hands should initiate a Sherlock Holmes-like approach to obtaining possible contactant history. Some examples of unique rubber contactants affecting the hands include: the rubber grip on mechanical pencils and pens, seen as dermatitis near the distal phalanges, chronic dermatitis of the finger tips in a phlebotomist due to rubber tourniquet use (see Figures 1 and 2), and involvement of the palmar aspect of the hand near the region of proximal phalanges following exposure to a pipe bowl (see Figure 3).

Contact dermatitis medicamentosa is also important to consider in the evaluation of hand dermatitis. Many cases of hand dermatitis likely begin as xerosis or adults with atopic dermatitis manifesting as chronic hand dermatitis. This endogenous barrier disruption then sets the stage for hand dermatitis that becomes secondarily driven by allergic contact
dermatitis to the agents utilized for treatment. In these cases there are more patients who demonstrate palmar (Figure 4) or diffuse involvement than seen with glove dermatitis. Both over-the-counter and prescription products need to be considered. Bacitracin is a classic example of this. Its use is often seen in the healthcare field and it is also widely applied by patients due to its availability without a prescription. Propylene glycol is another important allergen to consider. It is found in many topical medications and is the most common allergen in topical corticosteroids. It causes both irritant and allergic contact dermatitis.

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Sorbitan sesquioleate, thiazolinones, lanolin and formaldehyde-releasing preservatives are other common allergens in topical steroids.1 Metal is another common allergen that can affect the hands. While systemic ingestion of foods high in nickel has been associated with dyshidrosis, hand dermatitis related to metals is more often due to the handling of metal containing instruments. Certain occupations are notable for work with metal instruments. A dermatitis localized to the fingers and palm in an individual who works as a hairdresser is very suggestive of an allergy to nickel in nickel-plated scissors.5 Locksmiths, cashiers and carpenters are other individuals with frequent exposure to nickel containing substances such as keys, coins and handheld work tools with metal parts.6,7

Chronic dermatitis of the mid-palm has been termed the “palmar grip pattern.” This distribution suggests an allergen that is grasped in the palm such as a computer mouse, cell phone, vehicle stick shift, railing or cane.7 See Figure 5. Jewelry such as rings (see Figure 6) may lead to a negative image of dermatitis on the skin that is contacted.

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