A case study:
Maintained remission of contact dermatitis with a topical, herbal remedy.

Mark J. McNamara, BA, & Steven R. Frank, BS

Case Report:

The subject is a 47-year-old woman who has experience symptoms of irritant contact dermatitis of notable severity since childhood. Frequent exposure to cleaning products as a child is believed to be the initial causal factor of this sensitivity. The subject, as a child, would frequently assist her mother at work cleaning houses. Years of contact with cleaning products without the protection of gloves has led to frequent outbreaks, and visibly damaged fingertips. The subject continues to clean homes for a living, but attempts to be conscious and diligent about wearing gloves on her hands when exposed to cleaning products. The subject, however, admitted that gloves break and sometimes are not replaced in the interest of time. The subject noted that chemical exposure on her fingers would often cause them to break out. Due to recurrent outbreaks, the subject resorted to repeated use of cortisone cream preparations. Cortisone creams alleviated symptoms temporarily, but frequent reliance on the products had left the subject concerned about the consequences of over-use.

When the subject initially presented to the clinic, no eczematous breakouts were visible on her hands, but her fingertips appeared red, inflamed, and displayed small wrinkles or fissures on sights of common breakouts. The subject was enrolled in a protocol to examine the effects of applying a topical, herbal eczema remedy as a prophylactic measure in a subject prone to frequent breakouts.

Materials & Methods:

The subject was seen once a week at the clinical research department of Klearsen Corporation in Boulder, CO. At each clinic visit, an interview was conducted regarding the previous week's occurrences, a photograph of the subject's fingers was taken, and a detailed weekly symptoms survey was filled out. Daily symptoms surveys were returned weekly at the visits and new surveys for the upcoming week were issued. Each daily symptoms survey tracked the severity of eight different dimensions of eczema-associated discomfort and appearance. The eight dimensions tracked were sleep interference, severity of itching, severity of pain, severity of overall discomfort, severity of redness, severity of crusting, severity of overall appearance, and interference as a result of eczema discomfort. In addition to these standard daily questions, the subject was asked on each weekly symptoms survey to rate the change in the overall appearance and discomfort of their eczema as well as their satisfaction with the remedy when considering the degree of relief and tolerability of side effects. The subject, on her first visit, was given a week's worth of surveys and no product to apply. This first week was designated the baseline week (BLW) and served as a comparison for the rest of the study. On the subjects second clinic visit, the subject returned her BLW surveys, filled out a weekly survey, received an additional week's worth of surveys as well as a tub of Nature's Rite Rash Relief (NRRR). The subject was told to apply the gel liberally, three times a day, to all areas on her hands where she frequently experienced breakouts. The subject was seen once a week for the next six weeks at the clinical research facility where weekly surveys were filled out, an interview conducted, and photographic data obtained. Prior to conclusion of the study,

the subject was asked to refrain from using the gel at all for two weeks to control for the possibility of spontaneous remission of the subject's condition. This two-week period is termed the return to baseline phase (RBL).

Results:

Photographic data from the entry interview illustrates the subject's hands had experienced extensive damage due to repeated exposure to cleaning supplies. The subject's fingers, especially the tips, were fiercely red. In addition, widespread fissures are clearly seen in pictures from both visit 1 and 2. Regardless of chemical exposure, the subject reported painful, tender, and itchy fingertips from using her hands all day. The primary source of distress to the subject was the physical discomfort as described by the dimensions severity of itching, severity of pain, severity of overall discomfort, and interference with daily activities. When asked how her eczema interfered with her life on a regular basis, the subject reported a great disturbance to her work. Raw, tender fingertips, painful to the touch, often accompanied the end of a workday. Patient rated severity of itching, pain, overall discomfort, and interference with daily activities are reported in Table 1. Self-report data from the subject's symptoms surveys reveals a reduction from baseline values in all dimensions of discomfort and appearance. Particularly interesting is the decline in the patient rated interference with daily activities. In the six weeks following the BLW, the subject's rating of interference with daily activities dropped from a baseline average of 7 (of a possible 9) to a value of 1 ("none at all"). Additionally, itching, pain, and overall discomfort all dropped from their baseline levels to average ratings of one ("none at all") in the six weeks after the BLW. The inclusion of the RBL in the last two weeks of the study saw the dimensions of severity of

itching, pain, overall discomfort, and daily interference rise from values of one ("not at all") in the two weeks absent of treatment.

The damage done to the subject's fingers, extensive fissures and consistent erythema, was the source of frequent embarrassment. Photographic data confirms that after seven weeks of three times daily application of NRRR prevented the development of eczematous outbreaks on the subject's fingers. In addition, the level of erythema and extent of fissures was noticeably improved over the course of the treatment phase. The subject maintained her regular work schedule, where frequent exposure to chemicals was an inevitable risk. The subject noted on one occasion her astonishment with the maintained remission of breakouts, despite her gloves having broken several times over the course of the preceding week.

Table 1

Weekly averaged values for patient rated severity

Visit #	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Itching	3.14	2.57	1.29	1	1.14	1.42	1	1.14	1.29
Pain	2.57	2.43	1.57	1.57	1.71	1.29	1	1.14	1.29
Overall Discomfort	3	2.43	1.57	1.43	1.29	1.14	1	1.14	1.29
Redness	2.71	2.71	2.43	2.43	2	2.71	2	2	2
Overall Appearance	2.57	2.57	2.29	2.29	2	2	2	2	2
Daily Interference	7	5.86	4	3.14	1.86	1.29	1	1	1.29

Discussion:

The herbs contained in the NRRR help relieve the pain and discomfort associated with contact dermatitis by providing anti-inflammatory, analgesic, and tissue repairing agents to the skin all while protecting the damaged area from bacterial and viral infections. The results of the current case study demonstrate a clear reduction in pain, redness, and overall discomfort. Additionally, the treatment prevented the development of eczematous breakouts on the subject's fingers. The subject noted on a weekly basis the absence of even minor breakouts, which were previously a frequent occupational hazard. While the exact pathophysiology of contact dermatitis remains unclear, enough is known to propose mechanisms behind NRRR's prophylactic and pain quelling properties.

Similar to corticosteroid preparations, the actions of NRRR help to reduce inflammation and minimize the influx of immune reaction catalysts. The compounds contained in Salix species (White Willow), are readily converted in vivo to salicylic acid (PDR, 2000). Salicylic acid reduces inflammation in the body by preventing the release of histamine and prostaglandins from activated mast cell granules. By blocking the release of histamine, normal vascular tone is maintained rather than the vasodilation and increased blood flow that typically accompany histamine release. In what is typically viewed as a hyperactive immunity disorder, reducing the influx of the body's natural chemical mediators of inflammation (T lymphocytes, IL-1, macrophages), may help to retard the chronic inflammatory cycle. Another result of preventing the flooding of damaged tissue with blood is to prevent the pruritis and edema associated with eczema, which can eventually lead to water loss, and reduced epithelial integrity.

St. John's Wort is a powerful analgesic that works to diminish the afferent pain signal sent to the central nervous system. The mechanisms of action behind St. John's wort's affect lies in its ability to inhibit the reuptake of such neurotransmitters as norepinephrine and seratonin (PDR, 2000). It is possible that excess norepinephrine helps to maintain an inhibitory post-synaptic response thereby reducing the transmission of pain signals.

The inclusion of both Comfrey and Marigold in the NRRR preparation supplements the body's innate ability to heal itself and prevent future inflammation. Both herbs enhance cell proliferation and decrease time to healing in superficial wounds (PDR, 2000). Histological exams of skin with contact dermatitis reveal desmosomes, adhesion molecules normally found linking outer layers of keratinized epithelium, are either engulfed or completely destroyed (Thestrup-Pederson). Maintaining this critical barrier of epithelium not only prevents characteristic water loss, but also prevents interaction between common external allergens that may eventually become sensitized. Though a role of genetics is recognized in most atopic conditions, researchers and clinicians agree that external allergens are integral in prolonging the inflammatory process (Ruzicka, 1998).

The findings that Staphylococcus aureus enterotoxins exacerbate inflammatory reactions on the skin of both healthy individuals and those with atopic eczema, has lead dermatologists to rethink the already multifaceted approach to the treatment of eczema. Studies have found IgE antibodies to S. aureus enterotoxins in 78% of patients with

atopic eczema (Strange, 1996). A colonization of S. aureus bacteria, while probably not a causal factor in the development of eczema, could facilitate a sustained inflammatory reaction. The Larrea tridentate (Chaparral) contained in the NRRR is a bitter herb that derives its flavor from nordihydroguaiaretic acid. This naturally occurring antiseptic has been proven to reduce tooth decay and gum disease when used as a mouthwash (Castleman, 1991). Three times daily application of NRRR helps to stop the recurrent cycle of inflammation and colonization.

Conclusion:

The multi-faceted approach of NRRR treatment truly addresses the multi-causal nature of eczema. Though controlled trials of the remedy will add weight to the above claims, the maintained remission of a case of contact dermatitis with such a chronic nature is promising.

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