

# Case Study Of Contact Dermatitis Treated With Investigational Topical Product

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3/15/99: Condition of lesions after treatment for five months with Vaseline Brand Solutions Skin Repair. Note redness, induration and cracking.



4/9/99: Results following use of Elta® Nuvase™ Creme twice daily and Elta Provase™ Creme at night. Note reduction in redness and induration. Some peeling was observed, but fewer cracks were seen.



5/12/99: Results following Elta Nuvase Creme twice daily and Elta Provase Creme at night. Affected areas are pink, cracks healing, and skin is more pliable.



6/7/99: Three months after beginning treatment with Elta Nuvase and Provase Cremes, hand and wrist are healed. Most of the dermatitis, including itching, has completely resolved.



TABLE 1 (Continued On Other Side)

<u>TREATMENT</u>	<u>DURATION</u>	<u>EFFECTS</u>	<u>TREATMENT</u>	<u>DURATION</u>	<u>EFFECTS</u>
<b>Over the Counter Products</b>			<b>Prescription</b>		
Benadryl Capsules 25 ms Warner Lambert, (Morris Plains, NJ)	3/99 - 6/99	Relieved itching 2 to 4 hours. Allowed sleep.	Prednisone 20 mg decreasing dose Center Laboratories, (Port Washington, NY)	2 weeks orally	Helped itch, redness & pain while using.
Lubiderm Warner Lambert, (Morris Plains, NJ)	2 weeks	Redness & itching worse.	Triamcinolone 0.1%, Fujisawa USA, Inc Elocon 0.1%, Scering Corporation	2 weeks topically 2 weeks topically	Helped itch, redness and pain while using. Helped itch, redness and pain while using.
Cortiad Pharmacia-UpJohn Consumer Health Care, (Kalamazoo, MI)	Off & on for 2 months	Relieved itching, but dried skin.	<b>Investigational OTC Drug Products</b>		
Elta Melting Moisturizer Swiss-American Products, Inc., (Dallas, Texas)	Less than 1 week	Redness and itching worse.	Elta Nuvase Creme Swiss-American Products, Inc., (Dallas, Texas)	3/15/99-3/31/99 TID 3/31/99-6/17/99 BID	Relieved redness & itching immediately.
Lanacort 10 Combs Inc. (White Plains, NY)	1 week	Relieved itching, but dried skin worse than Cortiad.	Elta Provase Creme Swiss-American Products, Inc., (Dallas, Texas)	3/31/99-6/17/99	Nightly. Relieved redness, itching immediately.
			Elta Forte Creme Swiss-American Products, Inc., (Dallas, Texas)	5/12/99-5/19/99	Nightly. Did not relieve itching as well as Elta Nuvase or Provase Cremes.

**TABLE 1 (Continued From Other Side)**

<u>TREATMENT</u>	<u>DURATION</u>	<u>EFFECTS</u>
Aveeno Moisturizing Lotion Rydelle Laboratories, Division of SC Johnson & Son, (Racine, WI)	Less than 1 week	Redness & itching worse, but no dry skin.
Attrac-Tain, Coloplast-Sween, (North Mancato, MN)	Less than 1 week	Dried skin and caused flaking.
Vaseline Solutions, Skin Repair, Chesebrough-Pond's, (Greenwich, CT)	10/98-3/15/99	Best of all products tried prior to 3/15/99.
Elta Lite Lotion, Swiss-American Products, Inc., (Dallas, Texas)	4/9/99-6/17/99 daily	Helped moisturize areas.
Elta Cleanser, Swiss-American Products, Inc., (Dallas, Texas)	4/9/99-6/17/99 daily	Helped reduce number of hand washes.

**ABSTRACT**

Contact dermatitis is an inflammatory response of the skin to an irritant or an allergen. Common occupational irritants causing contact dermatitis include but are not limited to soaps and detergents, latex, scouring compounds, chemicals and metals. Clinical manifestations are usually localized to the area of contact and may include pruritis and burning sensations, changes in pigment, erythema, vesiculation, weeping, crusting, lichenification, dry fissuring and peeling.

Contact dermatitis can affect hospital staff. Most clinicians are routinely exposed to irritants such as latex, detergents and chemicals on a daily basis. Treatment with topical corticosteroids and avoidance of suspect irritants usually lead to resolution of the dermatitis.

A case study will be presented of a LPN who developed persistent contact dermatitis. The dermatitis did not resolve with traditional treatments. Only after three months of treatment with an investigational topical drug product, was resolution of the dermatitis and complete healing achieved. The new investigational product and the traditional treatment products will be discussed. Results of irritant specificity test will be presented. A series of photographs documenting resolution and healing will also be presented.

**INTRODUCTION**

Contact dermatitis is an inflammatory response of the skin to an allergen or an irritant<sup>1</sup>. Clinical manifestations include itching and burning sensations, changes in pigmentation, erythema, vesiculation, weeping, crusting, lichenification, dry fissuring and peeling<sup>1</sup>. The U.S. Bureau of Labor Statistics and NIOSH/NORA reports occupational skin disease (allergic and irritant contact dermatitis) is the second most common type of complaint filed<sup>2,3</sup>. From 1983 to 1994, the rate of reported occupational diseases increased from 64 to 81 cases per 100,000 workers, approximately 20% of all occupational diseases reported. In health care workers, allergy and/or irritancy to latex may cause up to 10% of all skin disorders reported<sup>2</sup>. Of all workman's compensation claims for dermatological conditions, 90% are due to contact dermatitis<sup>4</sup>. It is estimated the total annual cost, including lost work days and loss of productivity associated with skin disease/contact dermatitis, may reach \$1 billion annually.

The prognosis of occupational irritant and allergic dermatitis is poor. It is reported 75% of patients with occupational contact dermatitis develop chronic skin disease<sup>2</sup>. The most important part of treatment is to identify and eliminate exposure to the causative agent<sup>4</sup>. Although not recommended, most contact dermatitis cases will usually resolve without intervention within four to six weeks if further exposure is prevented<sup>4</sup>.

Contact dermatitis can affect hospital staff. Most clinicians are routinely exposed to irritants such as latex, detergents and chemicals on a daily basis. Treatment with moisturizing lotions, topical and systemic corticosteroids, systemic antihista-mines and avoidance of suspect irritants usually leads to resolution of the dermatitis.

Reported in this poster is a case study of an LPN who developed persistent occupational dermatitis. The dermatitis did not resolve with traditional treatments. Only after three months of treatment with two investigational topical drug products was resolution of the dermatitis and complete healing achieved.

**MATERIALS & METHODS**

A variety of traditional over the counter treatments were used (see Table 1). Some treatments were more effective than others. Vaseline Brand Solutions Skin Repair was used as needed on a daily basis until 3/15/99 when Elta<sup>®</sup> Nuvase<sup>™</sup> Creme was started. Benadryl was taken orally to help relieve the itching and allow sleep.

Elta Nuvase and Provase<sup>™</sup> Cremes are topical investigational new over the counter drugs. Both products contain moisturizers and vegetable enzymes which help combat itching. Both products can be used on severely dry and irritated skin, dermatitis and open superficial wounds. Elta Nuvase Creme is a heavier creme whereas Elta Provase Creme is a lighter formulation.

Photographs and wound assessments were performed every 48 hours to monitor progress. Later, photographs and assessments were performed on a weekly basis to monitor progress.

Latex sensitivity was suspected. A RAST test was performed for the specific antigen *Havea braziliensis*. A RAST score of 60 or above would be considered positive latex allergy.

**CASE STUDY BACKGROUND**

G-J is an 53 year old female LPN who developed contact dermatitis in January 1998 after a few months of working at Punxsutawney Area Hospital. Medical history revealed only one prior case of contact dermatitis, but not with such severity or persistence. The previous case of dermatitis occurred 25 years ago and was triggered by an unknown irritant or allergen. The dermatitis resolved within two to three weeks, following treatment with a prescription cortisone cream.

**REFERENCES**

- 1 Fitzpatrick, Thomas B. Chapter 32; Dermatitis In Color *Atlas and Synopsis of Clinical Dermatology*. Dermatology. Lippincott Publishers 3:48-53, 1997.
- 2 NIOSHA/NORA Allergic and Irritant Contact Dermatitis: Background and Definitions: December 14, 1998. Web address: [http://www.cdc.gov/niosh/skn\\_dis.html](http://www.cdc.gov/niosh/skn_dis.html)
- 3 U.S. Bureau of Labor Statistics Table R48 Number of nonfatal occupational injuries and illness and occupational summary groups, 1996. Web address: <http://stats.bls.gov/case/ostbo5090.pdf>
- 4 Michael, John: Contact Dermatitis, 1998. Web address: <http://www.emedicine.com/EMERG/topic131.htm>

G-J developed dermatitis on the right hand, right wrist and left hand knuckles following exposure to Hibiclens (Zeneca Pharmaceuticals, Wilmington, DE). She tried a variety of products (see Table 1) continually on a trial and error basis to resolve the lesions. To try to reduce the irritation from hand washing, various hand soaps were tried including Dove, Dial, Ivory, and Caress. The least irritating soap was Caress. The Punxsutawney Area Hospital Employee Health physician saw G-J in January 1998. He suggested the dermatitis was merely a latex allergy and placed her on Triamcinolone, Elocon and descending dose of Prednisone. These products helped the dermatitis only while G-J was taking the medication. Since latex sensitivity/allergy was suspected, she began using latex-free and powder-free gloves as suggested by the Employee Health physician. The change in glove types did not improve her lesions. The only apparent improvement in resolving the dermatitis was seen after G-J had had a few days away from work. Frequent hand washing continued to aggravate the lesions, making improvements short lived.

After several months, G-J was examined by a dermatologist, but could do little more than what the Employee Health physician had done. Both physicians suggested in order to resolve and prevent further dermatitis, G-J should make a change in occupation. Since G-J did not want to quit working as an LPN, she continued to live with the dermatitis and try new products that might help.

**CASE STUDY RESULTS**

By 3/15/99, the dermatitis had still not resolved. Right hand and wrist were inflamed, indurated, red, lichenified and extremely itchy (see photos). Cracks were apparent and the skin was dry and scaly despite the use of Vaseline brand Solutions Skin Repair. The itching at night was so severe, G-J would wake herself by scratching the affected areas. In order to sleep, Benadryl capsules were taken at night. The Benadryl would relieve most of the itching for about four hours.

Application of Elta Nuvase Creme three times daily to affected areas caused the redness of the lesions to fade immediately. Itching was temporarily relieved. Forty-eight hours after starting with the Elta Nuvase Creme regimen (about 7 treatments), the areas were less red and the itchiness was less severe, although still present. Frequent hand washing at work increased the pruritus and Vaseline Brand Solutions Skin Repair lotion was used following hand washing to moisturize the skin.

Approximately two weeks after treatment with Elta Nuvase Creme, the hand and wrist were less red with fewer cracked areas. The itching was no worse than before. To try to optimize improvement, Elta Nuvase Creme was switched to twice daily applications with no other moisturizers following hand washing. Elta Provase Creme (light formulation) was used at night. At this time, the left hand knuckles were also treated with this regimen.

On 4/9/99, approximately two weeks after the last change in treatment regimen, both hands and wrist had less inflammation and induration (see photos). The affected areas were pink-red and had some scaling. Itching continued to be a problem, but was less severe than the previous two weeks. Benadryl was continued at night to help relieve the itching and allow sleep. The treatment regimen was modified on 4/9/99 to help minimize the antagonistic effect of frequent hand washing by using Elta Cleanser and Elta Lite Lotion at times in place of hand washing with soap.

On 5/12/99, one month after the last change in regimen, both hands and right wrist were much improved (see photos). The redness of the areas had faded to a pinkish color. The cracked areas were healing. G-J indicated the skin was less indurated and more pliable. Itching continued to be a problem and seemed to have worsened. Elta Nuvase Forte Creme, similar to Elta Nuvase Creme, was used at night for about one week (5/12-5/19/99) to try to control itching.

On 6/7/99, there were no more open or cracked areas on either hand or wrist. The affected areas appeared more pliable, although still pink. The itching, although present at times, had been almost completely alleviated. Some areas continued to be dry and scaly. These areas were treated with the previous regimen. Benadryl was no longer needed and was discontinued.

From June until the last week in August, G-J did not require any treatments to her hands or wrist. Frequent hand washing was noted, however, to cause flare ups on both hands and wrist. The last week in August, G-J had a flare up on both hands and right wrist, coinciding with the onset of allergy season in Punxsutawney. G-J treated these new lesions with the last treatment regimen for one week and all lesions resolved. No further treatments have been needed as of 10/15/99. G-J has been able to continue working at the hospital.

On June 4, 1999, G-J was tested for latex allergy using a RAST test. The specific allergen used was *Havea braziliensis*. G-J scored 20 and was considered latex allergy negative.

**CONCLUSIONS**

- Occupational contact dermatitis can be painful, expensive and frustrating to treat.
- This case study had persistent contact dermatitis that was not due to a latex allergy.
- This case study of persistent contact dermatitis did not resolve with traditional O-T-C or prescription treatments.
- Elta Nuvase and Provase Cremes achieved complete healing and almost complete resolution of the contact dermatitis within three months.
- A dramatic decrease in redness & relief of itching was noted immediately following application of Elta Nuvase and Provase Cremes to the affected areas. This relief would last approximately six hours.