8:35 AM - CONTACT ALLERGY TO A TRADITIONAL CHINESE MEDICINE POULTICE

Matthew Karpman, MD and Gillian de Gannes, MD, FRCPC
Author Affiliations: University of British Columbia, Canada

As a result of widespread immigration and the ethnic diversity in our communities, dermatologists are increasingly seeing patients who use complementary and alternative medicine. A survey of caucasian Canadians and Americans showed that 59% and 43% of the population respectively have used complementary and alternative medicine in the past year. Traditional Chinese medicine poses both physiologic and pathologic side effects with the most common adverse event being contact dermatitis to those topically applied.

We present a case of severe allergic contact dermatitis to a traditional Chinese medicine poultice used to heal a musculoskeletal injury. The patient had 13 positive patch test reactions to the ACDS 80 core series and hair dye series. In addition, we discuss common chemicals found in traditional Chinese medicines that may elicit allergic contact dermatitis.

Our case highlights the need to review over the counter and alternative therapies that patients might be using when taking a medication history and suggests potential chemical culprits to consider when patch testing these patients.

8:45 AM - HYPERSENSIVITY CAUSED BY SURGICAL SUTURES: REPORT OF A CASE AND REVIEW OF THE LITERATURE

Patrick H. McDonough, MD and Ponciano D. Cruz, Jr., MD.
Author Affiliations: The University of Texas Southwestern Medical Center, Dallas, Texas, USA.

An otherwise healthy 24 year-old man was referred for management of an eczematous eruption on the left foot and for pruritic bullae on both palms, neither of which responded to topical steroids. Five months prior, he underwent Achilles tendon repair of that foot, which dehisced; a skin graft was implanted but did not take. Lesional skin biopsy of the foot showed spongiotic dermatitis. Patch testing to Chemotechnique NACDG 80 and steroid allergens revealed: very positive to DMDM hydantoin, fragrance mix II, glutaraldehyde, *Myroxolon pereirae*, nickel sulfate, propylene glycol, and triclosan; weakly positive to several other allergens. This outcome indicated an excited skin syndrome, rendering the tests uninterpretable. Despite avoidance of the positive allergens and treatment with prednisone and mycophenolate mofetil, the dermatitis worsened to involve the trunk. Theorizing that retained Fiberwire, PDS and Vicryl sutures in the wound contained the relevant allergen(s), we lobbied his surgeons to remove these. Removal of the sutures 18 months after the initial surgery led to marked improvement of the eruption such that prednisone and mycophenolate were tapered off. We plan to repeat patch tests, including the aforementioned suture materials applied epicutaneously (and potentially intradermally). Our discussion will focus on: persistent antigen exposure causing the excited skin syndrome; and review the literature on hypersensitivity caused by surgical sutures.

8:55 AM- ACUTE GENERALIZED EXANTHEMATOUS PUSTULOSIS (AGEP) CAUSED: A CASE SERIES AND REVIEW OF THE GUIDELINES FOR PATCH TESTING IN CUTANEOUS DRUG ERUPTIONS

Ashley C. O'Toole, Julie LaCroix, and Melanie Pratt
Author Affiliations: University of Ottawa, Ottawa, Ontario, Canada

Background: Acute generalized exanthematous pustulosis (AGEP) is a significant adverse cutaneous

reaction most often induced by drugs or by acute infections. In recent years, the usefulness of skin testing in the investigation of drug eruptions has been better delineated.
Objective: We present a case series of AGEP induced by rarely reported by commonly used medications; Benzacaine and Hydroxyzine, in two patients. We then discuss the process of patch testing these patients to determine the exact cause of the drug eruption.
Methods: A review of the literature including PubMed and Medline for similar cases as well as a review of the evidence and guidelines for patch testing in cutaneous drug eruptions.
Results: To our knowledge, there are no previously reported cases of AGEP secondary to Benzacaine use and there are only two other reported cases of AGEP caused by Hydroxyzine. Patch testing pinpoint the cause of cutaneous adverse drug reactions in up to 50% of the cases and should be performed in every dermatology centre.
Conclusion: The proven causal relationship with AGEP and commonly used medications Benzacaine and Hydroxyzine should inform clinical practice. We also review the guidelines for patch testing in drug eruptions.

9:05 AM- ALLERGIC CONTACT DERMATITIS CAUSED BY TOBRAMYCIN CONTAINED IN BONE CEMENT

Michael A. Sawchuk, MD; Melanie Pratt and Jennifer Lipson, MD
Author Affiliations: University of Ottawa, Ottawa, Ontario, Canada
Background: Bone cements containing aminoglycosides have been incorporated into joint arthroplasties
since 1970 to help reduce the risk of infections. Although aminoglycosides are common allergens, the majority of documented allergic contact dermatitis (ACD) cases from orthopaedic implant materials have been attributed to metal alloys in the prostheses.
Objective: To present a case report of a 56-year-old male who developed left knee ACD secondary to tobramycin contained in bone cement (Simplex™ P with Tobramycin, Stryker®) initially used for prosthesis fixation during a left total knee arthroplasty in 2011 and later manipulated during arthroscopic lysis of adhesions in 2014.
Methods: Patch testing was performed to the North American Contact Dermatitis Group Standard Screening Series, Trolab® Metals and Medicaments Series, and some of the patient's own products. Additionally, a review of the literature for similar cases was conducted.
Results: Patch test results at 120 hours demonstrated a positive reaction to gentamicin, which cross reacts with tobramycin. Tobramycin patch testing is pending. To our knowledge, there is only one other published case in the English literature describing an ACD to an aminoglycoside in bone cement.
Conclusion: Although rare, sensitization to an aminoglycoside contained in bone cement following joint
arthroplasty is possible, even years later, and should be considered in the correct clinical context**.** This patient's ACD only resolved after he underwent arthroplasty revision with removal of the aminoglycoside-containing bone cement.

9:15 AM – NICKEL DERMATITIS TO A DISPOSABLE ELECROCAUTERY TIP

Bryan D. Sofen, MD[1]; Raegan D. Hunt, MD, PhD[2]; Ronald R. Brancaccio, MD[3]; David E. Cohen, MD, MPH[3];
Author Affilliations: 1.Rush University Medical Center, Chicago, Il. 2.Baylor College of Medicine, Houston, Tx ; 3. New York University School of Medicine, New York, Ny;
A 55-year-old woman developed a pruritic, erythematous patch around her wound two days postoperatively following removal of a basal carcinoma on her right cheek. During surgery, alcohol, 1%

lidocaine with epinephrine, electrodessication for hemostasis, and vicryl sutures were used. The wound was dressed with petrolatum and paper tape. Bacitracin was never used.
Patch testing revealed positive reactions to nickel and bacitracin, notably coiled vicryl and intradermal lidocaine with 1% epinephrine were negative. In addition, an electrodessication test site on the forearm resulted in an eczematous patch (days 2 and 4). Nickel was detected in the disposable Hyfrecator electrosurgery tip with dimethylglyoxime.
This patient with proven nickel sensitivity developed allergic contact dermatitis after electrodessication. In this case, nickel exposure from the electrosurgery tip is the most likely explanation for her postsurgical
dermatitis.
Nickel in surgical instruments is a recognized cause of allergic contact dermatitis in sensitized individuals. Although many physicians utilize nickel-free surgical instruments, nickel in electrosurgery tips may be overlooked. Practitioners should be aware of this potential contactant as post-operative allergic contact dermatitis may impair functional and cosmetic outcomes.

9:25 AM-OCCUPATIONAL AIRBORNE ALLERGIC CONTACT DERMATITIS FROM OMEPRAZOLE WITH CROSS-REACTIONS TO OTHER PROTON PUMP INHIBOTORS.

Khuzama Al-Falah, Jordana Schachter,MD; and Denis Sasseville
Author Affiliations: McGill University Health Centre, Royal Victoria Hospital, Montreal, QC, Canada
Background: Contact dermatitis from omeprazole and other proton pump inhibitors has rarely been reported. Most cases are airborne and occupational, in workers of the pharmaceutical industry who handle PPI in powder form.
Case report: A 44-year-old non-atopic woman and professional horse trainer, was referred for investigation of a pruritic dermatitis of 3 months duration, involving her eyelids, face, neck and forearms. This occurred after giving a racehorse a veterinary omeprazole-containing paste (GastroGard) as treatment for gastric ulcers. Lesions would appear within hours of treating the horse, and would fade over a few days with topical corticosteroids.
Method: The patient was patch tested to 3 concentrations of GastroGard, and to 2 concentrations (10% and 1% in petrolatum, prepared from crushed tablets) of each of the PPIs available for human use in Canada.
Result: At D4, the patient had a positive reaction to every agent tested. Patch tests were negative in 5 control subjects.
Conclusion: We did not separately test the active ingredient, or the components of the vehicle of each drug. However, our results favor the active ingredient and not the vehicle as the sensitizer. We believe that our case is the first to show broad cross-reactivity among PPIs after cutaneous sensitization.

9:35 AM- SEVERE AIRBORNE ALLERGIC CONTACT DERMATITIS

Farheen Mussani, BHSc, MD[1] and Sandra Skotnicki[2]
Author Affiliations; 1.University of Toronto, 2.St Michael's Hospital, Toronto, Ontario, Canada
We describe two cases of severe airborne allergic contact dermatitis to fragrance that required significant workplace modification. The first case is of a 51 year old female who works at a university laboratory as a laboratory technician. After two to three months of working in the laboratory, she began developing a significant facial eruption, including conjunctival blisters. Her cutaneous symptoms have been further exacerbated by respiratory symptoms. Patch testing was performed and at 120 hours, she reacted positive to cinnamic aldehyde, amerchol, fragrance mix 1 and 2 and nickel. The second case is of a 59 year old female civil servant who works in an office with an open concept with hundreds of

employees. She has had multiple episodes of a severe facial eruption spreading to her neck. While her workplace is mandated to be fragrance and scent free, not all co-workers adhere to this policy. Patch testing was performed and showed a positive result for fragrance mix 1, balsam of peru, paraphenylenediamine,
toluenesulfonamide reside and nickel. Both patients were diagnosed with a severe
airborne allergic contact dermatitis requiring workplace alterations including special fragrance free rooms to work in. Airborne allergic contact dermatitis will be reviewed and the two cases will be discussed.

9:45 AM – THE SPECTRUM OF *COMPOSITAE* CONTACT ALLERGY: A CASE SERIES

Chloé E. Ward and Melanie Pratt
Author Affiliations: University of Ottawa, Ottawa, Ontario, Canada

Background: *Compositae* contact allergy has a spectrum of clinical presentations, ranging from allergic
contact dermatitis (ACD) and airborne contact dermatitis (ABCD), to chronic actinic dermatitis (CAD) and systemic contact dermatitis (SCD). In the *Compositae* family, sesquiterpene lactones (SQL) are the most common allergenic oleoresins. Both direct physical contact and contact with airborne particles can cause *Compositae* dermatitis. A subset of patients goes on to develop CAD, and herbal remedies containing the oleoresin can present in a systemic clinical variant of the contact allergy.

Objective: To demonstrate the clinical spectrum of *Compositae* dermatitis.

Methods: Various clinical presentations of contact dermatitis associated with *Compositae* allergy were
identified in our patch test clinic health records. A review of the literature including PubMed and Medline for similar cases was also done.

Results: We present the spectrum of different manifestations through the following case series: a case of ACD on the lip related to the patient's lip balm containing SQL, a case of chronic hand dermatitis in a gardner, two cases of CAD associated with SQL allergy, and a systemic contact dermatitis to ingested chamomile from the *Compositae* family.

Conclusion: Knowledge of the wide spectrum of *Compositae* allergic contact, coupled with appropriate
history taking, physical examination, phototesting, patch testing and photopatch testing allows for the prompt diagnosis and treatment

9:55 AM - METHYLISOTHIAZOLINONE (MI) AND METHYLCHLOROISOTHIAZOLINONE/METHYLISOTHIAZOLINONE (MCI/MI): THREE YEAR PATCH TEST RESULTS FROM CLINICAL PRACTICE

Sherry H. Yu BS BA[1]; James S Taylor MD[2]; Deb Murray LPN[2] and Apra Sood MD[2]
Author Affiliations: 1.Case Western Reserve University School of Medicine, Cleveland, OH; 2. Department of Dermatology, Cleveland Clinic, Cleveland, OH

Background: To investigate the prevalence, co-reaction patterns, and outcomes of patients patch tested
with methylisothiazolinone (MI) and methylchloroisothiazolinone/ methylisothiazolinone (MCI/MI).

Methods: Retrospective chart review of patients patch tested with MI and MCI/MI in 2012-2014 according to NACDG methods. Demographic data, exposures, and outcomes were recorded.

Results: 719 patients were patch tested. Contact allergy to MI and/or MCI/MI occurred in 54 (7.5%),

with 33 reactions to MI only, 3 reactions to MCI/MI only, and 18 reactions to both. Most were female (70%); average age was 47.5 years. Average duration of dermatitis was 35 months; most patients (52%) had a history of atopy. Most commonly affected sites were hands, face, and generalized. Contact allergy to MI and/or MCI/MI was occupationally related in four cases. Relevance of exposures was identified and rated. Cosmetics, soaps and cleansers (including personal wet wipes), and hair care products accounted for all identified sources. Concomitant allergy occurred to other preservatives. Outcomes were available for 18 patients; most improved significantly with allergen avoidance.

Conclusion: The high prevalence of contact allergy to MI supports its addition to the standard series to
identify cases missed by testing with only MCI/MI. Intervention is needed to reduce the number of products containing these preservatives.

10:05 AM - IMPLEMENTING OPTICAL MARK RECOGNITION TECHNOLOGY TO ENHANCE PATCH TEST DATA COLLECTION: A PILOT STUDY

Anh Khoa Pham[1], Huy D. Le[1], Kathryn A. Zug[2], and Emma Malenka[3]
Author Affiliations; 1.Geisel School of Medicine at Dartmouth, Hanover, NH 2.Dartmouth-Hitchcock Medical Center, Lebanon, NH 3.Hanover High School, Hanover, NH

The North American Contact Dermatitis Group (NACDG) currently collects results of patch testing via manual entry into a database. Manual entry of data is time consuming, costly, and subject to errors. Optical Mark Recognition (OMR) technology may alleviate these drawbacks by using an automated document scanner and OMR software to record data on custom-made forms. To test whether OMR can enhance patch test data collection, results of 409 cases of patch testing (total of 38,446 data fields) recently performed by the NACDG were separately entered into a database by manual entry and OMR entry. The error rate per 1,000 data fields was 1.51 for manual entry and zero for OMR entry. The average entry time per 1,000 data fields was 25 minutes for manual entry and 0.7 minutes for OMR entry. The OMR system is speculated to recuperate its high price through cost savings from manual data entry after 2.5 years of data collection by the NACDG. Its drawbacks include an increase in paper and ink usage and a requirement of technical familiarity. OMR technology is a promising alternative to manual entry because of its enhanced speed, accuracy, and long-term cost savings.

10:15 AM - CONTACT ALLERGY TO SURFACTANTS IN A LIQUID CLEANSER

Jamie L Hanson, BS[1 3] and Erin M Warshaw, MD, MS [2 3]
Author Affiliations: 1.University of Minnesota Medical School 2.University of Minnesota Medical School Department of Dermatology 3.Veterans Affairs Medical Center Minneapolis, MN

A massage therapist with a history of contact allergy to multiple allergens presented to our patch testing clinic with recurrent hand dermatitis despite having achieved 2 years of remission by avoiding known allergens. Repeat patch testing identified a new positive (1+) reaction to a personal product, a liquid cleanser (semi-open test).

In order to further characterize the patient's allergy, we performed additional patch testing to 9 of the 12 ingredients used in the formulation of this product, kindly provided by the manufacturer. The patient developed positive reactions (1+) to disodium lauroamphodiacetate 1% and 2% aqueous, isostearamidopropyl morpholine lactate 1% aqueous, sodium lauroyl sarcosinate 1% aqueous, and again to the product itself. A doubtful reaction was noted to sodium lauroyl sarcosinate 0.5% aqueous. Ten healthy controls were negative to these 3 surfactants as well as the personal product, liquid cleanser (semi-open test).

These 3 surfactants are widely used in soaps, shampoos, and other cleansers. However, contact allergy to these surfactants is rare; in fact only sodium lauroyl sarcosinate has been reported in the literature.

Interestingly, our patient also had a strong positive (2+) reaction to another, more common surfactant allergen, oleamidopropyl dimethylamine. This case highlights rare allergy to surfactants and the value of patch testing personal products.

10:25 AM- CINNAMON SPICE AND EVERYTHING NOT NICE: MANY FEATURES OF INTRAORAL ALLERGY TO CINNAMIC ALDEHYDE

Megan Isaac-Renton, MD; Monica Kayi Li, MD and Laurie M. Parsons, MD, FRCPC
Author Affiliations: University of Calgary, Calgary, Canada
Intraoral allergic contact dermatitis (ACD) is an uncommonly reported entity. The most commonly implicated allergens are metals that are incorporated into dental appliances.
Intraoral ACD to non-metal allergens is even less frequently described.
Cinnamic aldehyde is widely used as a flavoring agent in foods and dentifrices. However, intraoral ACD to cinnamon flavoring agents has only been sporadically reported. In these cases, a variety of sources have been implicated, including candy, chewing gum, mouthwash, lip sunscreen, cinnamon toast, volatile oils, and toothpaste.
The clinical presentation of intraoral ACD reactions varies greatly, and thus clinicians often do not recognize the diagnosis. Furthermore, since patients are typically unable to provide a list of putative allergens, a high degree of clinical suspicion is necessary to make the correct diagnosis.
We describe several patients with intraoral ACD caused by cinnamon, and review the literature on this association.

11:05 AM - LATEX ALLERGY – IS THE PREVALENCE DECREATING?

MSB Blaabjerg, KE Andersen, C Bindslev-Jensen, CG Mørtz.
Author Affiliations: Department of Dermatology and Allergy Centre, Odense University Hospital, Denmark
Latex allergy has been the focus of attention for decades due to the risk of severe allergic reactions occurring in sensitized people. Many interventions have been introduced to reduce the occurrence of latex allergy.
Objectives: This retrospective study investigates changes in the prevalence of latex allergy and clinical symptoms from 2002 to 2013
Methods: Latex skin prick tests (SPT) were included in the SPT baseline series for all patients tested at the Department of Dermatology and Allergy Centre, Odense University Hospital. For tho s e wi th pos i t i v e latex S P T medical records were reviewed to determine the clinical relevance. Furthermore, concomitant positive SPT for birch pollen were recorded, and in a subgroup of patients also tests with fresh foods.
Results: 8580 consecutive patients were included. The prevalence of positive latex SPT decreased from 6.1% in 2002-2005 to 1.9% in 2006-2009 and to 1.2% in 2010-2013 ($p<0.0001$). The prevalence of clinically relevant latex allergy decreased from 1.3% in 2002-2005 to 0.5%-0.6% in 2006-2013 ($p<0.0004$). Among the patients with positive SPT to latex 64% had a concomitant positive SPT to birch pollen and 52% had a history of reaction to related fruits or vegetables.
Conclusion: The study showed a statistically significant decrease over time in the occurrence of latex positive SPT and clinically relevant latex allergy. Many of the positive latex SPT are explained by cross-reactions to birch pollen and selected foods.

11:25 AM- AN OBSERVATIONAL STUDY OF PATCH TESTING FOR METAL ALLERGY

WITH MANUFACTURER-SUPPLIED MATERIALS PRIOR TO NUSS BAR INSERTION

Kerry Heitmiller BA[1], Andrea French CRNP[2], Samuel M. Alaish MD[2], Anthony Gaspari MD[1]
Author Affiliations: Departments of [1]Dermatology and [2]Surgery, University of Maryland School of Medicine, Baltimore, MD

The increasing use of metal implantable devices has raised awareness of nickel allergies. However, standards for preoperative testing for nickel allergy are lacking. Nickel allergy is particularly relevant among pectus excavatum (PE) patients who undergo the Nuss procedure as a number of postoperative complications have been attributed to nickel allergy. The Nuss bar manufacturer offers a stainless steel disk for preoperative testing for metal sensitivities. Preliminary clinical findings from preoperative testing of two PE patients (14-16 years; 1 male, 1 female) suggest that the stainless steel disk is not sensitive to detect nickel allergy. To further investigate the sensitivity of the stainless steel disk, seven patients without PE (44-68 years; 6 females, 1 male) undergoing standard patch testing with suspected nickel allergy were additionally tested with the disk. We evaluated patch testing reactions and reactions to the disk 48 and 72 hours after application. Patients who displayed a positive patch test reaction to nickel did not exhibit a corresponding reaction to the stainless steel disk. These results suggest that the disk is unable to accurately determine nickel allergies and may not properly prevent complications postoperatively due to metal allergy. Patch testing alone may be sufficient and more effective in determining metal sensitivities.

11:35 AM- MASTISOL CONTACT DERMATITIS

Daniel W. Shaw, M.D.,
Author Affiliations: Division of Dermatology, University of California, San Diego

We describe 12 patients seen over a 13 year period with allergic contact dermatitis (ACD) from Mastisol. Exposures included its use as an adhesive aid under skin closure strips, under the tape used in pressure dressings, and under electrocardiogram electrodes during exercise stress testing.

Mastisol contains gum mastic (*Pistacia lentiscus*), gum storax (*Liquidambar styraciflua*), methyl salicylate, and ethanol denatured with acetone. The number of patients with positive patch tests / number tested were: gum mastic 8/10, gum storax 4/11, methyl salicylate 0/11, and ethanol 0/11. Other patch test findings included compound tincture of benzoin 5/10, Balsam of Tolu 4/8, Compositae mix 4/12, Majantol 3/4, *Styrax benzoin* 3/6, propolis 3/8, ylang-ylang oil 3/10, sandalwood oil 2/10, Balsam of Peru 2/12, colophony 2/12, lavender oil 1/6, camphor 1/6, oxidized tea tree oil 0/8, fragrance mix I 0/12, and fragrance mix II 0/10. One colophony allergic patient was allergic to Select™ Skin Closure Strip Reinforced because of its colophony content, but not to 3M Steri-Strip™ which is colophony-free.

Gum mastic contains α-pinene, (Z,Z)-farnesol, β-myrcene, β-caryophyllene, β-pinene, limonene, linalool, and other ingredients. 1/6 patients tested had a weakly positive patch test with farnesol (a mix of 4 isomers). Patch tests with the others listed plus caryophyllene oxide and hydroperoxides of linalool and limonene were negative in all three patients tested.

In summary, ACD from Mastisol is caused by uncertain ingredients of gum mastic and/or gum storax.

11:45 AM- PATCH TESTING OUTCOMES AND REDCAP (RESEARCH ELECTRONIC DATA CAPTURE)

Margo J Reeder
Author Affiliations: University of Wisconsin School of Medicine and Public Health, Madison, Wisconsin.

REDCap (Research Electronic Data Capture) is a HIPAA-compliant, web-based application that can be used for clinical data collection and storage. Forms and surveys are created in REDCap using an online designer tool. No previous programming experience is necessary to use REDCap.
Using REDCap, we created a clinical database of patch testing results at our institution. The database can be queried and analyzed using built in analysis tools. Forms and data may also be downloaded for collaboration among different institutions. REDCap is a unique tool that has potential for many uses in Dermatology.
Acknowledgements: REDCap is supported by a grant from UW Institute for Clinical and Translational Research.

11:55 AM - PATCH TESTING IN CHILDREN – AN EXPERIENCE FROM KASHMIR

Yasmeen J Bhat, MD, FACP, Saniya Akhter, MBBS, Farhan Rasool,DNB, Iffat Hassan, MD, Syed Mubashir, MD
Author Affiliations: Department of Dermatology, STD & Leprosy, GMC, Srinagar, J&K- INDIA
Background: Allergic contact dermatitis in the pediatric population is more common than previously recognized, with recent prevalence estimates of positive patch test reactions in the range of 14-70% of children patch tested.
Aim: To find out the proportion of positive patch test among children suspected of allergic contact dermatitis, to examine the relevance of positive patch test reactions, and to assess the most common allergens.
Methods: This was a case series analysis carried out on 60 pediatric patients suspected of allergic contact dermatitis, of age group 1-18 years, attending the contact dermatitis clinic of SMHS hospital, Srinagar. An ethical clearance was sought from instutional ethical committee.
Results: Twenty patients (33%) were having the positive patch test reactions and 15 of these showed positive current clinical relevance. Total number of positive reactions were 44 (average of 2.20 reactions per patient). Positive patch test reactions increased with age, 26.67% in 1-6 years, 26.95% in 7-12 years and 47.38% in 13-18 years age group. The common allergens were nickel sulphate, cobalt chloride, neomycin sulfate, potassium dichromate and fragrance mix.
Conclusion: Patch testing is a practicable and clinically worthwhile procedure to be done in all children with persistent dermatitis.

2:30 PM- SENSITIZATION: A FOCUS ON METHYLISOTHIAZOLINONE

L. Fakhrzadeh, D. Chase, D. Mays, L. Telofski, R. Walters, A. Robillard, K. Menas, H. Swei, E. Atillasoy –
Author Affiliations: Johnson & Johnson Consumer Companies, United States
The acquisition of skin sensitization is a well-established process, consisting of induction of sensitivity & subsequent elicitation of an allergic response. The induction-phase requires penetration through the stratum-corneum. Bioavailability depends on the size, physicochemical properties, and details of application. Once bioavailable, the sensitizer forms hapten-protein complex by binding epidermal proteins. This event primes the immune system, whereby subsequent exposure elicits allergic reactions which manifest as contact dermatitis. Therefore, a consistent approach to identify and manage skin sensitization is critical to ensure overall consumer safety and safety of cosmetic-products(CP). Methylisothiazolinone-(MIT) has been allowed in CP since 2005 at concentrations =100ppm with the threshold for sensitization established to occur at concentrations of 600-1000ppm. We have tested a broad range of 96-formulations in human repeat insult patch test, across 16801-subjects and found negligible rate of 0.065% confirmed allergic response when using MIT at the accepted safe levels. Neither the industrial or household products industry adheres to the 100ppm limit used in the CPindustry,

and uses concentrations of 500-2500ppm. These 5-to-25-fold higher concentrations, highlight the critical need to 1)create a taskforce with the objective to better develop consistent industry-wide use limits for threshold sensitizers aimed at consumer safety; 2)to develop patch testing standards reflective of best practices that would avoid inadvertent exposure to high levels and related adverse reactions.

2:40 PM- WORKPLACE PREVENTION AND EDUCATION PRACTICES AMONG WORKERS ASSESSED FOR CONTACT DERMATITIS

Tanya Gupta[1], Irena Kudla[1,2], Victoria H Arrandale[2], D Linn Holness[1,2,3]
Author Affiliations 1.Department of Occupational and Environmental Health St Michael's Hospital, 2.Dalla Lana School of Public Health and 3.Department of Medicine, University of Toronto, Toronto, CANADA

Background: Although strategies for preventing occupational skin disease (OSD) are known, workers continue to develop OSD. This may relate to gaps in prevention and education practices in workplaces. Objective: To identify gaps in workplace prevention and education practices among workers being assessed for contact dermatitis.

Methods: Following ethics approval, patients being assessed for contact dermatitis who were working or off work because of skin disease, were invited to participate. Information on demographics, workplace characteristics, prevention and education practices was collected by a self-completed questionnaire.

Results: In total 127 patients have participated in the study to date. The mean age was 44 and 54% were male. The main industry sectors represented were healthcare and manufacturing. While the majority reported general occupational health and safety training, only half reported skin specific training. Of those reporting skin training, the majority reported education related to avoiding exposure, hand washing and gloves but the use of creams or early recognition of symptoms was reported less frequently.

Conclusions: Workers continue to report gaps in prevention and education practices in their workplaces. This information may help regulators identify areas for focus in inspection activities.

Funding: Tanya Gupta was supported by a student scholarship from the Centre for Research Expertise in Occupational Disease.

2:50PM - DERMATITIS UNIFIED

Susan Nedorost MD
Author Affiliations: University Hospitals Case Medical Center/ Case Western Reserve University

Patients and non-dermatologist colleagues recognize that oozing skin and chronic itch interfere with sleep, concentration, and the ability to work. Dermatologists separate this condition into "atopic eczema" and "allergic contact dermatitis" and give different advice, often to the same patient, depending on which label is considered. Patients overwhelmingly believe that allergy plays a role in their condition, but dermatologists often do not patch test.

We may do better to adopt a unified approach to dermatitis that recognizes the many factors involved. Barrier dysfunction can be inherited (atopic dermatitis) or acquired (irritant dermatitis); both of these conditions predispose to allergic contact dermatitis. Some patients who are sensitized through skin also develop antigen specific IgE and exhibit the atopic march and systemic contact dermatitis. Tolerance can develop to cutaneous challenge independent of ongoing antigen specific IgE. Sensitivity to commensal organisms can also cause dermatitis, as can antigens considered to be weak sensitizers.

Dermatitis is a multi-factorial condition that challenges our ability to create a mental framework for our

patients and colleagues. We need to educate our patients at all phases of care from initial consultation through testing and on to execution of action plans that require behavioral change. We need to recognize co-morbidities as well.
Unifying the approach to dermatitis should enhance patient engagement and improve outcomes. Then, we can design pragmatic studies to find the approaches that yield best outcomes for lowest cost.

POSTER PRESENTAION ABSTRACTS

Metropolitan II

REVIEW OF DIAGNOSTIC METHODS FOR EVALUATING METALLIC ORTHOPEDIC IMPLANT REACTIONS: LYMPHOCYTE TRANSFORMATION TEST VERSUS EPICUTANEOUS PATCH TEST

Eseosa Asemota,MD, MPH[1]; Carrie Kovarik, MD[1]; and Glen Crawford, MD[12]
Author Affiliations: 1. University of Pennsylvania 2. Contact Dermatitis Clinic

Objective: There is limited evidence to link metal hypersensitivity as diagnosed with patch testing to orthopedic implant surgery outcomes. Diagnostic tests are not well-delineated and the patient evaluation protocol remains challenging. The lymphocyte transformation test (LTT) and patch-test (PT) are metal allergy detection methods. This review summarizes the evidence, and compares diagnostic value and clinical relevance of both tests.
Methods: Literature search conducted through the National Medicine Library. Research papers were identified, appraised, and findings synthesized.
Findings: Currently, PT is utilized in evaluating presumed metal-related implant reactions. While both tests have high concordance, LTT has higher sensitivity, specificity, reproducibility, and reliability. LTT distinguishes irritant and allergic responses, preventing false-positive results. Some reports show poor correlation of pre-implant PT and implant-hypersensitivity. PT involves soluble metallic ions with Langerhans cells primarily initiating response. LTT (in-vitro) is advantageous- simulates the periprosthetic environment.
However, LTT is more expensive, fewer haptens available for testing, fewer laboratories performing it, lack of standardized protocols, and few third-party carriers covering testing cost.
PT remains the standard in most dermatology practices, given the wider range of testing materials and relatively standardized protocols.
Conclusion: Currently tests to potential metal sensitivity include the epicutaneous patch test and lymphocyte transformation test. While PT is more commonly employed, emerging evidence suggests LTT may have distinct advantages. Large-scale, prospective studies are needed to determine the diagnostic and predictive value of LTT and PT regarding implant reactions.

PATIENT FEEDBACK ON POSTERS TO RAISE AWARENESS OF OCCUPATIONAL SKIN DISEASE

Meghan Clynick[1], Nikhil Rajaram[2,3], Muna Ali[2], Irena Kudla[2,3], Illia Tchernikov[5], Kiran Kapoor[5], D Linn Holness[2,3,4]
Author Affiliations: 1. Western University,2.Department of Occupational and Environmental Health, St Michael's Hospital, 3.Dalla Lana School of Public Health and 4.Department of Medicine, University of Toronto and [5]Workplace Safety and Prevention Services, Toronto, CANADA

Background: Awareness of occupational skin disease is low in many industry sectors. To increase awareness, we have developed sets of prevention posters for vehicle sales and service, hairdressing and food services.

Objective: To obtain patient feedback on the posters
Methods: Following ethics approval, 60 patch test patients completed a survey obtaining information on the general use of posters in the workplace and feedback on each of the seven posters.
Results: While only 12% of patients reported skin awareness posters in their workplace, 80% thought they would be useful. 85% felt that the posters should reflect their particular industry. Over 80% reported the posters attracted their attention, were easy to read, had a clear message and that the visuals were easy to understand.
Conclusions: Patients reported a strong preference for the use of posters in the workplace to raise awareness of OSD. They endorsed the use of the seven posters on a rotating basis and also the customization of the posters to their particular industry sector. Preferences for particular posters varied, supporting the use of different approaches to reach a broad audience.
Funding: The project was funded by the Ontario Ministry of Labour.

OCCUPATIONAL CONTACT DERMATITIS: WORKERS' COMPENSATION PATCH TEST RESULTS OF PORTLAND, OREGON, 2005-2014

Garrett Coman[1], Christopher Zinsmeister[2], Patricia Norris[3]
Author Affiliations: 1 University of Utah School of Medicine, Salt Lake City, UT; 2 Portland, Oregon; 3 Oregon Health & Science University, Portland, OR
Background: Workers are exposed to potential irritants and allergens with constant introduction of new
industrial chemicals in the workplace.
Objective: Characterize the final diagnosis, demographics, occupations, exposures, clinical presentations, patch test results, dermatologic histories, and risk factors of workers evaluated for suspected work-related allergic contact dermatitis (ACD).
Methods: A retrospective chart review of 310 Workers' Compensation Independent Medical Exams evaluated for suspected work-related ACD was performed. The workers were seen in a community dermatology clinic in Portland, Oregon from 2005-2014. Evaluation included history, physical examination, patch testing, and further diagnostic work-up when indicated.
Results: The majority of workers presented with hand dermatitis (n=148, 47.7%). The most prevalent occupations included healthcare workers (n=51, 16.5%), custodial staff (n=41, 13.2%), and machinists (n=36, 11.6%). ACD (47.5%) was more common than ICD (38.9%) in those diagnosed with occupational skin disease (n=185). The highest frequency work-related allergens were thiuram mix (21/88, 23.9%), carba mix (20/88, 22.7%), potassium dichromate (9/88, 10.2%), and epoxy resin (9/88, 10.2%).
Conclusion: ACD and irritant contact dermatitis (ICD) are common occupational skin disorders. ACD was the most common in our review, with 73.3% of those cases work related, compared to 86.7% of ICD being work related. Blue-collar work and wet work were risk factors for development of both ACD and ICD.

LIDOCAINE ALLERGY: DO POSITIVE PATCH RESULTS RESTRICT FUTURE USE?

Michael Corbo, MD[1], Elizabeth Weber, MD FRCPC[2], Joel DeKoven, MD FRCPC[1]
Author Affiliations: 1. Division of Dermatology, Department of Medicine, University of Toronto, Toronto, Ontario, Canada; 2. Division of Clinical Immunology and Pharmacology, Department of Medicine, University of Toronto, Toronto, Ontario, Canada
Objective: Adverse reactions from lidocaine are commonly reported. When allergy is suspected, patients may be referred for specific skin testing to confirm their clinical findings. We investigated seven cases of suspected lidocaine allergy to analyze if positive patch results restricted future use as an

injectable local anesthetic.

Methods: A prospective study was conducted from November 2012 to February 2014 at two academic hospital-based patch test clinics in Toronto. Patients were patch tested to the NACDG standard series (Smart Practice) and, if suspicion for lidocaine allergy was high, a local anesthetic series (Chemotechnique). Intradermal skin testing to local anesthetics below irritant concentrations was subsequently conducted. If negative, the patient was challenged with 1% Xylocaine subcutaneously.

Results: Seven patients presented to clinic with delayed hypersensitivity reactions and tested positive to

lidocaine with patch testing. Four patients had relevant reactions to over-the-counter products containing lidocaine, one to subcutaneous Xylocaine, and two were incidental findings. There were no patients with positive results to intradermal testing. Three patients had delayed reactions to the subcutaneous challenge.

Conclusions: Patients with positive patch test results to lidocaine and negative results with the subcutaneous challenge may be able to safely use lidocaine as a local injectable anesthetic in the future.

STOMAL CARE PRODUCTS REPRESENT A COMMON AND UNDERREPORTED SOURCE OF PERISTOMAL CONTACT DERMATITIS

Brienne D. Cressey, MD[1], Viswanath R. Belum, MD[2], Pamela L. Scheinman, MD[3], Dianne L. Silvestri, MD[4], Mario E. Lacouture, MD[2], Jonathan H. Zippin, MD, PhD[1]

Author Affiliations: 1. Weill Cornell Medical Center and New York-Presbyterian Hospital,New York, NY; 2. Memorial Sloan-Kettering Cancer Center, New York, NY; 3. Brigham and Women's Hospital Ambulatory Care Center, Chestnut Hill, MA; 4. University of Massachusetts Medical School, Worcester, Massachusetts

Background: While stoma skin care products (SSCP) are advocated as part of stoma care, peristomal dermatitis as a result of their use seldom receive attention.

Objective: To evaluate SSCPs as a potential cause of peristomal dermatitis.

METHODS: We utilized a retrospective chart review of patients with peristomal dermatitis at 4 academic hospitals from Jan 2010 to March 2014. Patient demographics, clinical information, and patterns of repeated open application test (ROAT) and patch test reactivity were documented.

Results: 54 patients with peristomal dermatitis were identified. ROAT reactivity pattern data was available for 18/54 patients, of which 10/18 were patch tested. The incidence of peristomal contact dermatitis to a defined agent was 89% (17/18). There were 22 positive test reactions in the 10 patients patch tested. Of the 18 patients ROAT tested, 16 reacted to their SSCPs (89%). SCCPs included stoma skin barriers, skin adhesives, and barrier removers.

Conclusions: Patients with peristomal dermatitis should be tested to their SSCP agents to determine the need for removing or changing their SSCP agent.

SURVEY OF PEDIATRIC PATCH TEST PROVIDERS

Alina Goldenberg BA[1] and Sharon E Jacob MD[2]

Author Affiliations: 1. UC San Diego, San Diego, California; 2. Loma Linda University, Loma Linda, California

Pediatric allergic contact dermatitis (ACD) in the United States is widely underreported despite significant morbidity for the involved children and their families. Combing the data from the three largest (multi-centered) North American studies (Hoegling 2008, Jacob 2008 and Zug 2008) summates a total of 592 affected children being tested by a total of 19 patch testers over an average of 5.3 years (an average of six patients per year.) This data suggest a significant possibility of underreporting of pediatric cases of patch testing and ACD in the US. Underreporting translates to a lack of objective data from

which further research questions, studies, and regulatory guidelines may begin to be built.
This poster highlights our recent survey of medical professionals providing pediatric patch test services in dermatology, allergy, and pediatric dermatology and identifies pediatric patch test 'hotspots' in the USA and the areas for which providers still need to be identified.

ERYTHRO (ZEBRA) DERMA

Katherine Gordon MD and Ponciano D. Cruz, Jr. MD.
Author Affiliations: Department of Dermatology, The University of Texas Southwestern, Dallas, Texas, USA.

A 53 year old forklift driver presented with chronic dermatitis of both palms and volar wrists with fissures and erosions. Patch tests to Chemotechnique NACDG 80, acrylate, and plant series as well as her skin care products were negative, except for a strong reaction to Amerchol L 101 alone. Despite counseling to avoid skin care products containing lanolin and treatment with topical clobetasol, her dermatitis worsened so that she progressed to erythroderma. She was hospitalized and improved with a course of mycophenolate mofetil. The original restriction of her dermatitis to palms and volar wrists, the solitary patch-test reactivity to lanolin (which was absent from her personal skin care products), and her deterioration to erythroderma led us to uncover an occupational hazard – exposure to lanolinwaxed leather covering the steering wheel of her forklift. Clearance of her eruption after avoiding this hazard confirmed lanolin as the relevant allergen. Our case exemplifies a pearl and a zebra, respectively, regarding lanolin allergy: While more commonly incriminated as an allergen in skin care products, lanolin is also used to coat leather in order to enhance pliability and water resistance, thus serving as the active component of polish for leather products. Our case documents lanolin as a rare cause of erythroderma, alongside *p*-phenylenediamine and the systemic contactants, *Parthenium* (*Compositae*),
Balsam of Peru (*Myroxolon perierae*), nickel, and metal implants.

EVALUATING TWO RHESUS MACAQUES(*Macaca mulatta)* FOR ALLERGIC CONTACT DERMATITIS

Carsten R. Hamann,[1] Zach Peña,[2] Kristin Morton,[2] Patricia Norris[2]
Author Affiliations: 1. Loma Linda University School of Medicine, Loma Linda, CA; 2. Oregon Health & Science University, Department of Dermatology, Portland, OR

Introduction: As dermatologists in a large multi-disciplinary center we are on occasion called to assist in
unique dermatologic issues not directly related to ordinary clinical or research responsibilities. We were contacted by the National Primate Research Center, part of the greater OHSU community to assist evaluating two research animals for possible allergic contact dermatitis (ACD).

Case History: Two rhesus macaques (*Macaca mulatta*) in long-term clinical trials presented with >2 year
histories of severe, relapsing and remitting hand/foot dermatitis with fissuring, and intermittent superimposed infection. They had been subjected to multiple antibiotic courses, biopsies, and extensive topical treatment regimens with only mild improvement. The two macaques were patch tested to a custom series of 20 allergens with 48 and 96 hour readings. One macaque had a relevant 2+ reaction to povidone iodine 2%aq. After ceasing all palmoplantar exposure to iodione the macaque had dramatic clinical improvement at 2-month follow-up. The second had no positive reactions.

Discussion: ACD is not well described in non-human animals. While some rudimentary patch testing and

repeat open application testing has been reported in some mammals, clinical evaluation of ACD with patch testing in non-human primates has never been reported.
Conclusion: We present our successful patch testing experience with two rhesus macaques. Patch testing these animals may be a viable option for evaluating suspected ACD.

PARAPHENYENEDIAMINE ALLERGY AND MUSTACHE DERMATITS

Carsten R. Hamann,[1] Justin Love,[2] Curt Hamann,[3] Dathan Hamann,[4] Sharon E. Jacob[1,2]
Author Affiliations: 1. Loma Linda University School of Medicine, Loma Linda, CA; 2. Loma Linda University, Department of Dermatology, Loma Linda, CA; 3. Contact Dermatitis Institute, Phoenix, AZ; 4. The Ohio State University, Division of Dermatology, Columbus, OH
Introduction: Facial contact allergy to paraphenylenediamine(PPD) in hair dye applied to the beard or mustache has been reported sparingly. The majority of over-the-counter(OTC) hair dye kits available in America contain PPD. We present two cases of PPD-induced "mustache dermatitis" in American patients using OTC-hair dye kits.
Case History: Patient one is a 56-year-old Caucasian male who presented with a 6-week history of pruritic scaly patches on the upper cutaneous lip and malar cheeks. He reported using an OTC-hair dye on his mustache 6 weeks previously. Patient two is a 62-year-old African-American male who intermittently self-dyed his mustache with an OTC-hair dye for ~5 years. He presented with a 4-month history of pruritic papular rash on his upper cutaneous lip and diffuse perioral hyperpigmentation/lichenification. The patients were patch test positive to PPD at 96 hours.
Discussion: Historically PPD allergy has affected predominately women. Men with PPD allergy typically
have a history of non-facial hair dying. Increased OTC-hair dye kit use and use of these kits on beard/mustache hair may contribute to a rising prevalence of PPD allergy in America.
Conclusions: Pruritic papular rashes or non-specific facial hyperpigmentation may be the presenting symptoms of PPD contact allergy. OTC-hair dyes purchased in America can cause PPD-induced "mustache dermatitis."

CONTACT DERMATITIS TO PIG SEMEN

Sara A. Hylwa, MD[1] and Erin Warshaw, MD[12]
Author Affiliations: 1. Department sof Dermatology, University of Minnesota, Minneapolis, MN, USA 2.VA Medical Center, Minneaplis, MN, USA
Precis: We offer a case of occupational protein contact dermatitis to pig semen.
Case: We present a case of a male pig inseminator in his 40s who presented to dermatology a 2-year history of a pruritic eczematous facial rash with associated weeping and crusting of the nasal passages and external ear canal that would flare with mild facial swelling while at work. Allergic contact dermatitis was suspected and initial patch testing revealed a 1+ mild reaction to paraphenylenediamene, with no clear relevance. Subsequent office open-application testing to the occupational pig semen revealed immediate light pink erythema of the skin with subsequent local urticarial response at 30 and 60 minutes. No systemic signs or symptoms of anaphylaxis developed. The patient was started on mycophenolate mofetil with the hope of being able to maintain employment.
Discussion: Protein contact dermatitis is often manifest by chronic or recurrent dermatitis often with urticaria or vesicles within minutes of contact. When the protein is volatile rhinoconjunctivitis or asthma symptoms may develop. The pathogenesis of protein contact dermatitis remains elusive, but it is thought to be a combination of type I and type IV reactions. Materials associated with protein contact dermatitis include foods (vegetables or fruits), enzymes, grains, and animal proteins - as exhibited in this case.

REPEATED MONTHLY SKIN CHALLENGES WITH DIPHENCYPRONE RESULT IN A 'RESPONSE PLATEAU' IN HEALTHY HUMAN VOLUNTEERS

Kristian Fredløv Mose[1], Mark Burton[2], Mads Thomassen[2], Flemming Andersen[1], Torben Arvid Kruse[2], Qihua Tan[2], Lone Skov[3], Mads Almose Røpke[4], Ole Clemmensen[5], Bjarne Winther Kristensen[5], Peter Simon Friedmann[6], Klaus Ejner Andersen[1]
Author Affiliations: 1. Department of Dermatology and Allergy Centre, Odense University Hospital, Denmark; 2. Department of Clinical Genetics, Odense University Hospital, Denmark;
3. Department of Dermato-Allergology, Gentofte Hospital, Denmark; 4. LEO Pharma A/S, Department of Clinical Pharmacology, Denmark; 5. Department of Clinical Pathology, Odense University Hospital, Denmark; 6. Dermatopharmacology Unit, Southampton University Hospitals NHS Trust, UK
Background. The response pattern after repeated challenges with Diphencyprone (DPCP) in human skin
remain unclear.
Objectives. To investigate the effect of repeated challenges with DPCP on inflammatory pathways and the response pattern over time in pre-sensitized participants.
Methods. Ten healthy volunteers were sensitized to DPCP followed by five or six challenges with DPCP at four week intervals. Punch biopsies were taken from challenge sites and used for microarray gene expression analysis and immunohistochemical staining for specific markers. The clinical response was measured using a visual ordinal scale and a skinfold caliper. The study was approved by a regional ethics committee.
Results. Repeated monthly challenges with DPCP resulted in a 'response plateau' both clinically and on a molecular and cellular level. A marked increase of inflammatory pathways was shown from 1st to 2nd challenge, whereafter the overall response reached a plateau level.
Conclusion. Our findings suggest that repeated monthly challenges result in a 'response plateau' in healthy volunteers.

A MYSTERIOUS DRAGON INK

Ariane Schreiber, MD[1] and Marie-Claude Houle, MDCM, FRCPC[2]
Author Affiliations; 1. Université Laval, Québec, Canada ; 2. Contact and Occupational Dermatitis clinic, Hôtel-Dieu de Québec, Université Laval, Québec, Canada
Tattoo reactions, especially in red pigment areas, may be due to allergic contact dermatitis. Standardized epicutaneous patch testing is often deceiving when trying to prove this type of allergy. Some authors suggest that the responsible allergens may be produced from haptenization in the dermis. We report a case of a 45-year-old man with a positive epicutaneous patch test to his own red tattoo ink. The patient presented with erosive and granulomatous plaques involving only the red areas of his tattoo, starting a few weeks after having it completed. A granulomatous allergic contact dermatitis was suspected to the red ink. An incisional biopsy showed a suppurative granuloma with pseudoepitheliomatous hyperplasia with no evidence of bacteria/fungi/foreign body. The red tattoo ink container mentioned "pure organic tattoo ink" as ingredient, but no company name was provided to obtain more information. The epicutaneous patch test were performed to an extensive array of standardized allergens (NAS, metal, textile, cosmetic and acrylate series) but the only positive reaction was to the red ink brought by the patient. This case emphasizes the lack of regulation of tattoo products, as well as the need for a better understanding of tattoo ink components and of their possible induced reactions.

A CASE OF EXPOXY ALLERGIC CONTACT DERMATITIS NEGATIVE TO STANDARDIZED

SERIES

Lin Xing[1,2] and Melanie Pratt[1,2]
Author Affiliations: 1. The Ottawa Hospital Division of Dermatology; 2. The University of Ottawa, Ottawa, ON

Introduction: Epoxy resins are frequently used chemicals in industrial adhesives and sensitization can occur via contact with the uncured material. Patch testing is the "gold standard" for diagnosis and standardized screening series have been developed.

Methods: A literature search was performed using Medline and PubMed with the terms "epoxy", "resins", "allergic contact dermatitis", "occupational" and "patch test". Patient record was reviewed.

Case: A 51-year-old female electronics assembler presented with a two year history of pruritic, papulovesicular dermatitis on her hands. Patch testing with standardised series was negative. Further testing using dilute materials at patient's workplace showed she was in fact positive for a number of epoxy acrylates. Arrangements were made to transfer her to a different sector of work and her dermatitis resolve within one month. Interestingly, almost a year after being clear, patient developed classic pattern of ACD on her head, neck and hands secondary to epoxy dust contamination of her lab coat at work. Alternative arrangements were made again and her skin cleared up within a month.

Conclusions: Previous studies have shown that allergic contact dermatitis can be missed if the patient is only patch tested to standardized allergen series. We strongly urge including additional patch testing of suspected sensitizing chemical at the works place. Delaying such diagnosis prolongs the negative impact on quality of life, income and occupational potential.