

An Unusual Skin Lesion in Cement Irritant Contact Dermatitis: A Case Report

Elham Behrangi¹; Habib Ansarin¹; Tanaz Hoseinzade Fakhim¹; Zahra Azizian^{1*}; Shooka Esmaeeli²

¹Department of Dermatology, Iran University of Medical Sciences, Tehran, IR Iran

²Students Scientific Research Center (SSRC), Tehran University of Medical Sciences, Tehran, IR Iran

*Corresponding author: Zahra Azizian, Department of Dermatology, Iran University of Medical Sciences, Tehran, IR Iran. Tel: +98-9357588196, E-mail: azizian_z@yahoo.com

Received: July 13, 2014; Revised: August 6, 2014; Accepted: August 18, 2014

Introduction: Cement has a wide industrial usage and it is the leading cause of occupational skin diseases among construction workers, which are present as contact urticarial and contact dermatitis.

Case Presentation: A 79-year-old water sewage worker man referred to our department with numerous symmetric hyper-keratotic papules with an erythematous base on both hands and feet for about 20 years.

Discussions: In this case, a large number of hyperkeratotic papules on common sites of cement contact are significant which is not reported among literature to the author's knowledge. These lesions are painful and pruritic; however, symptoms relieved after stopping cement exposure. In our case, occupational injury occurred because the patient's lacks of knowledge about safe working with cement and its importance.

Keywords: Irritant Dermatitis; Contact Dermatitis; Cement

1. Introduction

Cement which has a wide industrial usage is the leading cause of occupational skin diseases among construction workers, which presents as contact urticarial and contact dermatitis (1). One of the most reported skin problems among construction workers is contact dermatitis with cement causing by both allergic and irritant mechanisms (2). Cement irritant dermatitis ranges from acute from (cement burns) to cumulative irritate contact dermatitis (3-5).

2. Case Presentation

A 79-year-old man referred to our department with numerous symmetric hyper-keratotic papules with erythematous base on both hands and feet for about 20 years. He was a water and sewage worker since 25 years ago. He had been in prolonged contact with wet cement all these years. During this time, he experienced many episodes of pain and burning sensation accompanied with erythematous lesions, which were disappeared by removing contact with cement. In physical examination there were a large number of painful punctate hyperkeratotic papules with erythematous base located on sites of cement exposure hands (Figure 1 and 2) and feet (Figure 3 and 4).

All hematological and biochemical laboratory test re-

sults were normal. His laboratory tests shows WBC: 4900, RBC: 6.49, Hb: 15, MCV: 90, PLT: 120000, DIF: mixed: 10, Segment: 68, Lymphocytes: 22, ESR: 1, PT: 12, Inr: 2.3, PTT: 40, Albumin: 3.9, C4: 19, Cardiolipin: 3.2, C3: 77, antidsDNA: 12, TSH: 1.5. The histopathology of skin lesions showed skin tissue consisted of epidermis with hyperkeratosis, slight acanthoses and mild spongiosis underlined by relatively sclerotic and vascular dermis inflammation was insignificant. Mild spongiotic epidermal reaction compatible with chronic dermatitis (Figure 5).

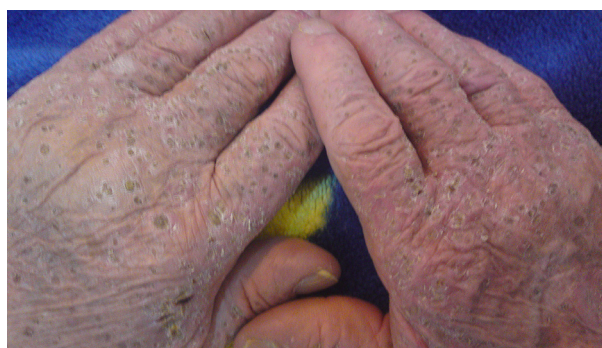


Figure 1. Numerous Hyperkeratotic Papules



Figure 2. Close View of Keratotic Papules



Figure 3. The Erythematous Base Hyperkeratotic Papules



Figure 4. Punctate Hyper Keratotic papules on Feet

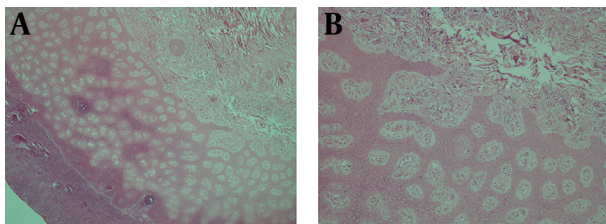


Figure 5. Histopathology Changes

3. Discussion

It is known that wet cement is an alkalis (5, 6), which can cause various lesions such as acute ulcerative damage (7). Necrotic skin changes appear 8-12 hours after exposure. Contact irritant cement dermatitis develops over months to years in those with continual exposure (7). Furthermore, the most common locations for cement contact irritant dermatitis are the feet and hands. The clinical presentations of chronic lesions are less sharply demarcated lesions with Xerosis, macular erythema and vesicles but hyperkeratose and lichenification predominant. These hyperkeratotic lesions are painful and pruritic; however, symptoms will relief after stopping cement exposure (2, 8).

In this case, a large number of hyperkeratotic papules on common sites of cement contact are observed. Contact dermatitis is one of the most frequently reported health problems among construction workers. Irritant contact dermatitis from cement ranges from cement burns to cumulative irritant contact dermatitis. Cement burns are rarely reported and are considered a severe form of acute irritant contact dermatitis. To the author's knowledge most of the case reports regard this issue had been published at least one or two decades ago though this can bold that safe working is being applied in developed countries but in the developing countries we have to pay more attention to this issue which can effect occupational power of the society and can become a concern for professional workers (2, 6, 9). Machovcova reported a case of cement burn due to acute contact with cement while starting a new job, supporting our data this article pointed to the importance of education and awareness about contact dermatitis for workers (6).

In our case, occupational injury occurred due to patient's lack of knowledge about safe work with cement and its importance. To prevent similar injuries, mostly in developing countries such as Iran with an increasing number of constructional industries, it is at a great importance to make workers accept adequate safety use. One important part of this acceptance is to increase general knowledge in this issue and the complications, which may happen by not considering the safety usage. Another part is to make safe work instruments accessible for workers. Considering these steps regarding the occupational skin injuries, the prevalence of these lesions will decrease.

Authors' Contributions

Study concept and design: Dr. Behrangi and Dr. Ansarian. Interpretation of data: Dr. Behrangi, Dr. Hoseinzade Fakhim. Manuscript drafting: Dr. Azizian, Dr. Shooka Esmaeeli. Critical revision of the manuscript for important intellectual content: Dr. Azizian, Dr. Shooka Esmaeeli.

References

1. Bock M, Schmidt A, Bruckner T, Diepgen TL. Occupational

- skin disease in the construction industry. *Br J Dermatol.* 2003;**149**(6):1165-71.
2. Spoo J, Elsner P. Cement burns: a review 1960-2000. *Contact Dermatitis.* 2001;**45**(2):68-71.
3. Stoermer D, Wolz G. Cement burns. *Contact Dermatitis.* 1983; **9**(5):421-2.
4. Onuba O, Essiet A. Cement burns of the heels. *Contact Dermatitis.* 1986;**10**:246.
5. McGeown G. Cement burns of the hands. *Contact Dermatitis.* 1984;**10**(4):246.
6. Machovcova A. Caustic ulcers caused by cement aqua: report of a case. *Ind Health.* 2010;**48**(2):215-6.
7. Poppe H, Poppe LM, Bocker EB, Trautmann A. Do-it-yourself cement work: the main cause of severe irritant contact dermatitis requiring hospitalization. *Contact Dermatitis.* 2013; **68**(2):111-5.
8. Winder C, Carmody M. The dermal toxicity of cement. *Toxicol Ind Health.* 2002;**18**(7):321-31.
9. Avnstorp C. Cement workers. *Kanerva's Occupational Dermatology*: Springer; 2012. pp. 1353-7.