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Case Presentation

Granuloma faciale treated with topical dapsone: a case report

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Abstract

Granuloma faciale (GF) is an unusual, treatment-resistant skin disorder that commonly affects the face. Several medical and surgical interventions are available that offer varying degrees of benefit. Both the condition and the treatment modalities can lead to significant disfigurement. The use of oral dapsone in the treatment of GF has been described in the literature, but there are no reports, to our knowledge, of the use of topical dapsone 5% gel (Aczone; Allergan Inc, Irvine, CA). We present a case of a patient with GF on the nasal tip successfully treated with topical dapsone.

Keywords: granuloma faciale; GF; dapsone; therapy; topical treatment

Introduction

Granuloma Faciale (GF) is a rare, inflammatory skin disorder of unknown etiology that may result in disfigurement [1,2,3]. It typically affects middle-aged, Caucasian men, but can occur in individuals of any race [4]. Clinically, GF is characterized by well-defined, red-brown or violaceous papules, plaques, and nodules on the nose, cheeks, forehead, or ears. Rarely, it occurs on the trunk and extremities [4,5]. Histopathologic features include a normal-appearing epidermis separated from the underlying inflamed dermis by a narrow grenz zone [4]. A dense, mixed infiltrate of eosinophils, lymphocytes, plasma cells, and neutrophils are present. A leukocytoclastic vasculitis may be present [4,6].

Treatment for GF can be challenging and randomized-controlled trials are lacking. Limited successes have been reported with topical tacrolimus, intralesional corticosteroids, dermabrasion, cryotherapy, surgical excision, and lasers (pulsed-dye, carbon dioxide and argon) [3,4,5]. The success of systemic dapsone has also been established [4]. Herein, we present a case of a patient with GF successfully treated with topical dapsone, a treatment option that is easy to use, cost-effective, and poses less morbidity than the above mentioned therapies.

Case synopsis

A 62 year-old man presented with a persistent plaque on the right nasal tip (Figure. 1). The lesion arose spontaneously and had been present for two years. Skin exam revealed a solitary, smooth, 1.0 x 1.5 cm red-brown plaque. A punch biopsy confirmed the diagnosis of GF (Figure. 2). Several individual therapies had been tried unsuccessfully including: three sessions of intralesional triamcinolone (5mg/cc) administered over a 2-month interval, topical mometasone 0.1% ointment for 2 months, and, a 6-month

trial of doxycycline (twice daily dose at 20mg). After failure of these therapies, topical dapsone 5% gel (Aczone®) applied twice daily was initiated. A 50% clinical improvement was observed at 6 months and near-complete resolution was observed at 9 months. At an 18-month follow-up, the plaque had nearly regressed without continued use of the medication (Figure. 3).

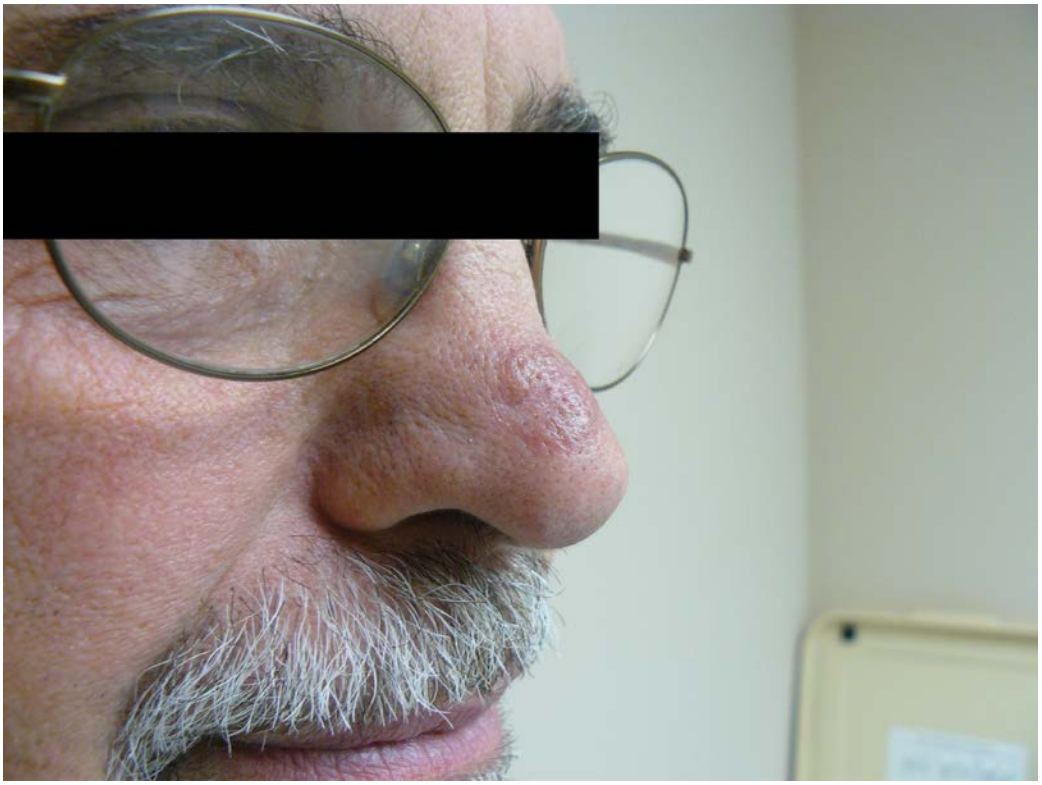

Figure 1. Before treatment, patient presented with a red-brown plaque consistent with granuloma faciale.

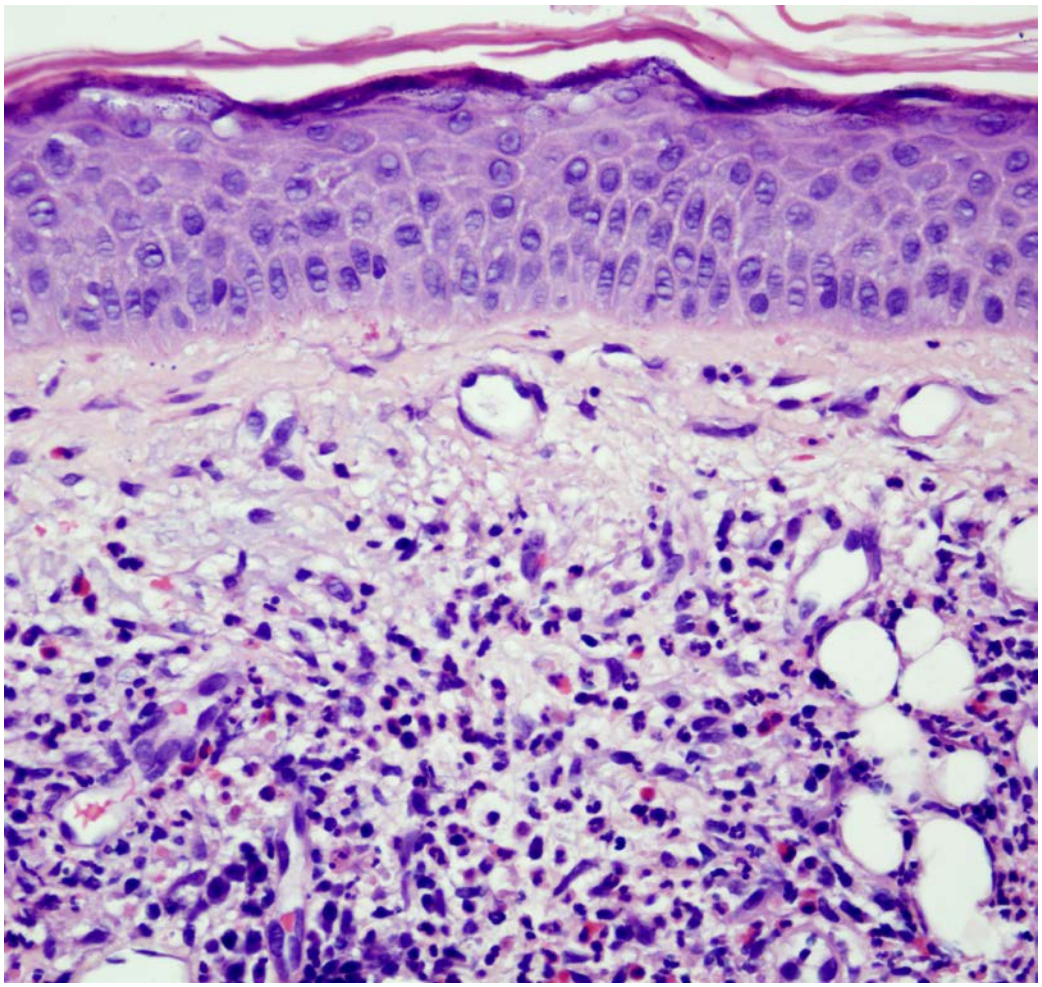

Figure 2. Histopathologic examination showing dense inflammatory infiltrate

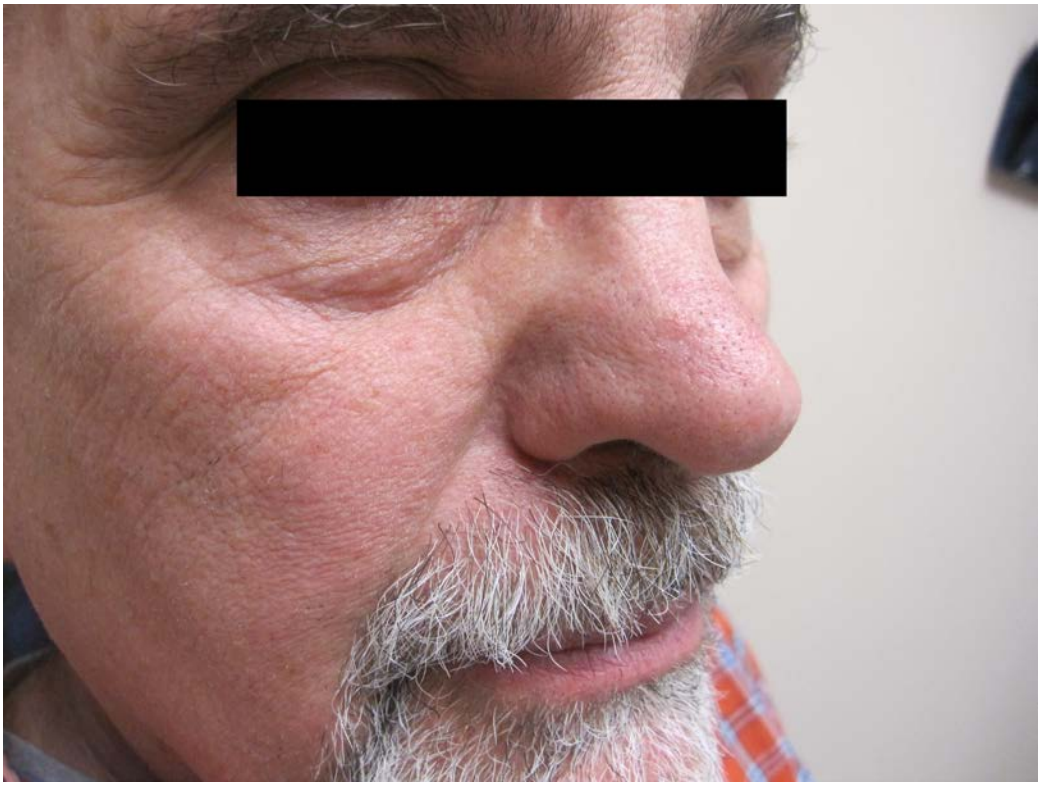

Figure 3. After treatment, patient showed significant improvement of granuloma faciale lesion.

Discussion

Granuloma faciale is an idiopathic, inflammatory condition for which evidence-based therapies are lacking. Although several surgical modalities have been advocated in the literature, scarring is an obvious risk. Laser therapy, most notably pulsed-dye laser, has also been successful but requires multiple treatments and can be costly. Oral dapsone has had reported successes but the risk of hemolytic anemia, drug hypersensitivity, and motor neuropathy make it a less attractive option [7,8,9].

Although the mechanism of action of dapsone is not completely understood, it is thought to inhibit activity of lysosomal enzymes, impede chemotaxis of neutrophils and eosinophils, and suppress inflammatory cytokines in the skin [10,11]. This case introduces a novel use to a unique drug for an often times treatment-resistant skin condition. To our knowledge, this is the first published report of the effectiveness of topical dapsone 5% gel in GF. Its efficacy has recently been demonstrated in erythema elevatum diutinum, a distinct condition consisting of leukocytoclastic vasculitis, mixed inflammatory infiltrate, and dermal vessel proliferation [12]. Given its efficacy in our patient, ease of use and low side-effect profile, topical dapsone may emerge as an important agent in the treatment of GF.

References

1. Thiyanaratnam J, Doherty SD, Krishnan B, Hsu S. Granuloma faciale: Case report and review. Dermatol Online J. 2009 Dec;15(12):3. [PMID: 20040253]
2. Requena C, Castejón P, Sanmartín O, Botella-Estrada R, Nagore E, Serra-Guillén C, Sorní G, Guillén C. Rhinophyma-like granuloma faciale. J Eur Acad Dermatol Venereol. 2006 Aug;20(7):881-2. [PMID: 16898922]
3. Caldarola G, Zalaudek I, Argenziano G, Bisceglia M, Pellicano R. Granuloma faciale: a case report on long-term treatment with topical tacrolimus and dermoscopic aspects. Dermatol Ther. 2011 Sep-Oct;24(5):508-11. [PMID: 22353159]
4. Mehregan DA, Mehregan DR. Chapter 34. Granuloma Faciale. In: Goldsmith LA, Katz SI, Gilchrest BA, Paller AS, Leffell DJ, Dallas NA, eds. *Fitzpatrick's Dermatology in General Medicine*. 8th ed. New York: McGraw-Hill; 2012.
5. Ludwig E, Allam JP, Bieber T, Novak N. New treatment modalities for granuloma faciale. Br J Dermatol. 2003 Sep;149(3):634-7. [PMID: 14511001]
6. Ortonne N, Wechsler J, Bagot M, Grosshans E, Cribier B. Granuloma faciale: a clinicopathologic study of 66 patients. J Am Acad Dermatol. 2005 Dec;53(6):1002-9. [PMID: 16310061]

7. Anderson CR. Dapsone in Granuloma Faciale. The Lancet, 1975;1:642. [PMID: 47990]
8. Hsia CC, Chin-Yee IH. Dapsone hemolysis. Blood. 2012 Jun;119(23):5349. [PMID: 22855947]
9. Kannan G, Vasantha J, Rani NV, Thennarasu P, Kousalya K, Anuradha P, Reddy CU. Drug usage evaluation of dapsone. Indian J Pharm Sci. 2009 Jul;71(4):456-60. [PMID: 20502558]
10. Goldner R, Sina B. Granuloma faciale: the role of dapsone and prior irradiation on the cause of the disease. Cutis. 1984 May;33(5):478-9, 482. [PMID: 6478871]
11. Debol SM, Herron MJ, Nelson RD. Anti-inflammatory action of dapsone: inhibition of neutrophil adherence is associated with inhibition of chemoattractant-induced signal transduction. J Leukoc Biol. 1997 Dec;62(6):827-36. [PMID: 9400824]
12. Frieling G, Williams N, Lim S, Rosenthal SL. Novel use of topical dapsone 5% gel for erythema elevatum diutinum: safer and effective. J Drugs Dermatol. 2013 Apr;12(4):481-4. [PMID: 23652900]