Thioglycolic acid peeling in Schamberg's disease

Peeling de ácido tioglicólico na doença de Schamberg

Authors:
Mariana Hammerschmidt[1]
Arthur Conelian Gentili[2]
Themis Hepp[3]
Maira Mitsue Mukai[4]

ABSTRACT

Schamberg's disease is a progressive pigmentary dermatosis of chronic course. The present article describes the use of thioglycolic acid peelings in Schamberg's disease, with histological and photographic analyses. A 43-year-old female patient with clinical and histological diagnoses of Schamberg's disease underwent five sessions of 10% thioglycolic acid peeling in gel with an interval of 15 days between each session. The patient had considerable whitening of the lesions, with clinical improvement of 68.7%. Thioglycolic acid solubilizes the haemosiderin, being a treatment option that leads to the whitening of the lesions with good tolerance and few side effects.

Keywords: *purpura; hemosiderim;therapeutics; hyperpigmentation.*

RESUMO

A doença de Schamberg é dermatose pigmentar progressiva de curso crônico. Apresentamos o uso de peeling de ácido tioglicólico nessa manifestação, com estudo histológico e análise fotográfica. Paciente do sexo feminino, 43 anos, com diagnóstico clínico e histopatológico de doença de Schamberg. Foram realizadas cinco sessões de peeling de ácido tioglicólico 10% em gel com intervalo de 15 dias entre cada sessão. A paciente apresentou significativo clareamento das lesões com melhora clínica de 68,7%. Solubilizante hemossiderínico, o ácido tioglicólico é opção de tratamento, mostrando clareamento das lesões com boa tolerância e poucos efeitos colaterais.

Palavras-chave: púrpura; hemossiderina; terapêutica; hiperpigmentação.

[1] Volunteer Preceptor at the Stomatology Outpatient Clinic of the Dermatology Service of the Universidade Federal do Paraná (UFPR)—Curitiba (PR), Brazil.
[2] Pathology Resident Physician, Hospital das Clínicas da Universidade Federal do Paraná (UFPR)—Curitiba (PR), Brazil.
[3] Dermatologist Physician —Caxias do Sul (RS), Brazil.
[4] Dermatology Instructor at the Universidade Federal do Paraná (UFPR).

Correspondence:
Dra. Mariana Hammerschmidt
Travessa Lange, 109
80240-000 – Curtiba – PR
Brazil
E-mail: mari-hammer@hotmail.com

INTRODUCTION

First described in 1901, Schamberg's disease is a progressive pigmentary dermatosis of chronic course that is characterized by reddish-brown, irregular maculae associated with petechiae, resembling grains of cayenne pepper. It is asymptomatic and usually affects the legs, however it can affect the trunk and upper limbs.[1,2] The observed lesions appear to be the result of hemosiderin deposits associated with melanic hyperpigmentation. It is believed that there is melanocytic activation secondary to ferric pigment deposition in the dermis.[3] Thioglycolic acid peelings have been shown to be a safe and efficient treatment option for dermatoses of ferric origin.[4]

Received on: 13 April 2012
Approved on: 26 May 2013

The present study was carried out at the Dermatology Service, Hospital das Clínicas da Universidade Federal do Paraná (UFPR) – Curitiba (PR), Brazil.

Financial support: None
Conflict of interest: None

CASE REPORT

A 43-year-old female patient presented complaining of the sudden onset of stains on the legs and feet, one year earlier. The stains worsened after exposure to the sun. The patient denied comorbidities and use of medication. The examination showed irregular brownish maculae—some confluent—in the legs and dorsum of the feet, bilaterally. The dermoscopy of the lesion evidenced a brownish pigment with areas of erythema (Figure 1). The histologic analysis (Figure 2) showed an increase of melanin pigment in the keratinocytes, as well as dermis with edema and discrete perivascular lymphohistiocytic inflammatory infiltrate with the presence of hemosiderin—evidenced by Perls staining— confirming the diagnosis of Schamberg's disease.

In order to prepare the skin, 10% glycolic acid + 4% hydroquinone + 1% alpha-bisabolol was prescribed for three weeks prior to the procedure. Five sessions of 10% thioglycolic acid (in gel) peeling were carried out at intervals of 15 days. Prior to performing the procedure, it is recommended that the skin be cleansed with a mixture of alcohol, ether and acetone, followed by the application of the acid, which is removed from the skin with soap and water after 20 minutes of contact. The patient did not report pain or any discomfort during the procedure. Slight peeling was observed beginning three days after the procedure, lasting up to ten days. There was a significant whitening of the lesions (Figures 3-8) and patient satisfaction (with a 90% improvement rate reported). Pre- and post- treatment photographic records were evaluated by 20 dermatologists who reported average improvement of 68.7% (ranging from 55-80%). A control biopsy after the fifth session showed an absence of hemosiderin deposition through Perls staining.

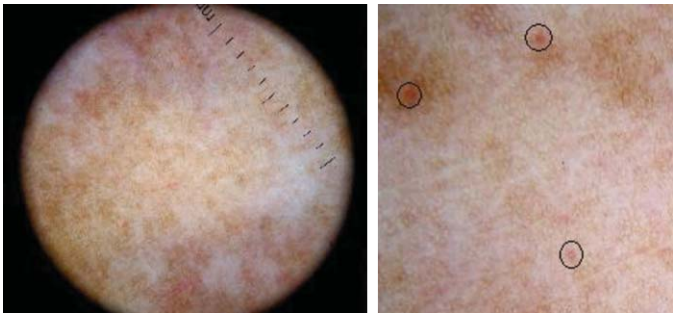

Figure 1: Dermatoscopic examination. Brownish pigment with areas of erythema, lesser magnification on the left and greater magnifications on the right hand side of the figure. Punctiform areas of erythema can be observed

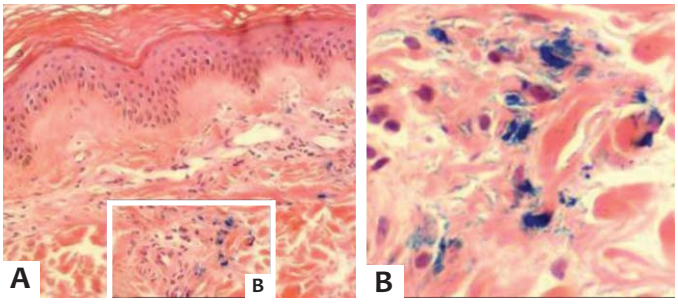

Figure 2: Histologic analysis. Presence of hemosiderin confirmed by Perls staining. **A:** Magnification = 100x (2.0x optical zoom). **B:** Magnification = 400x (2.0x optical zoom)

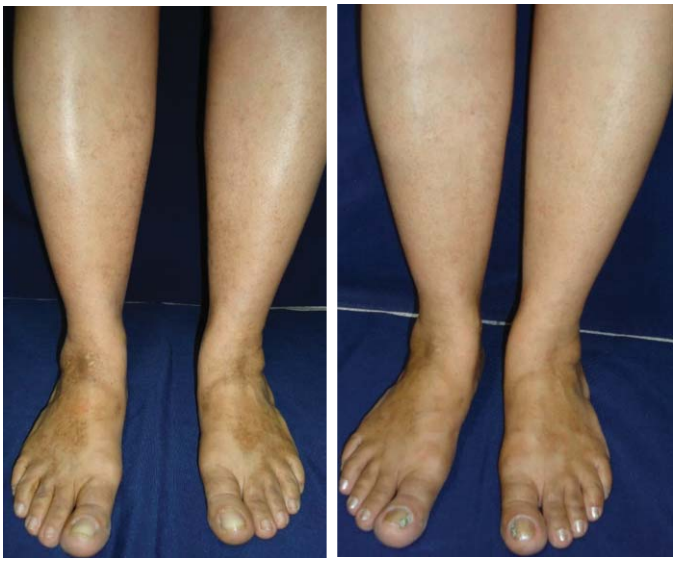

Figure 3: Anterior face of the legs. Left: pre-peeling. Right: post-peeling

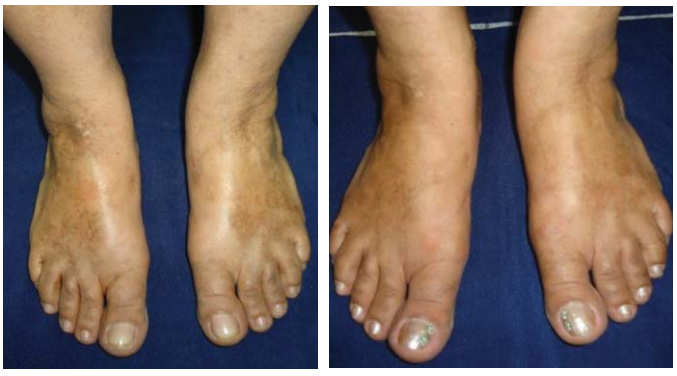

Figure 4: Dorsum of the feet. Left: pre-peeling. Right: post-peeling

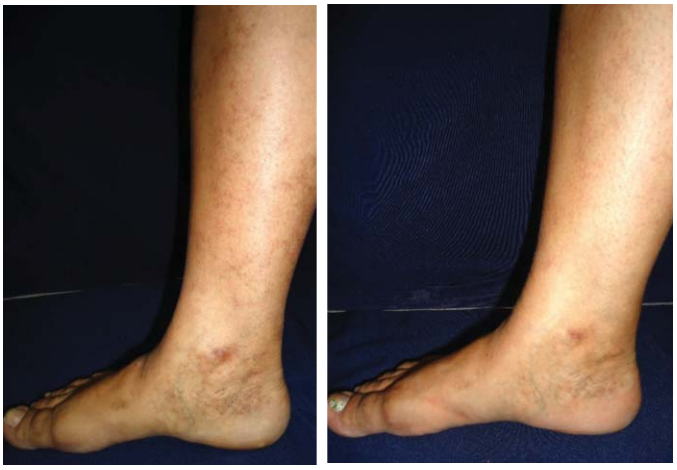

Figure 5: Medial face of the right leg and right foot. Left: pre-peeling. Right: post-peeling

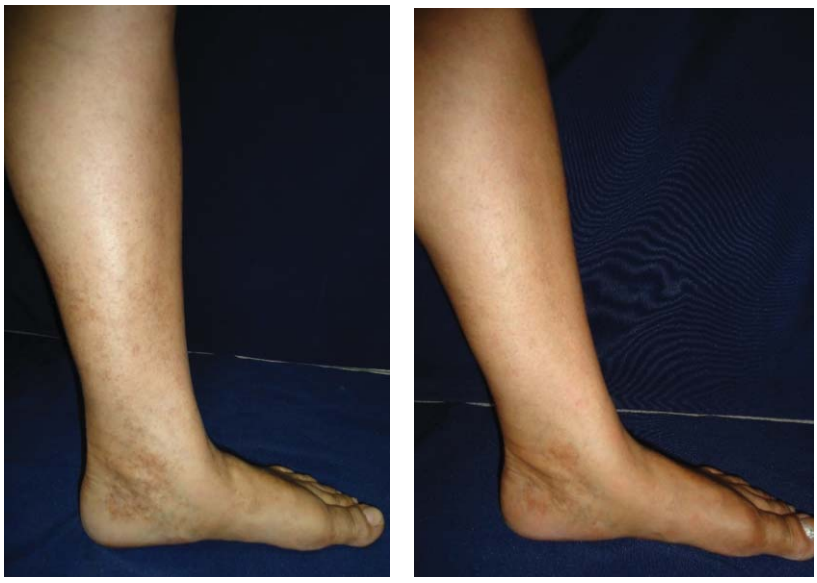

Figure 6: Medial face of the left leg and left foot. Left: pre-peeling. Right: post-peeling

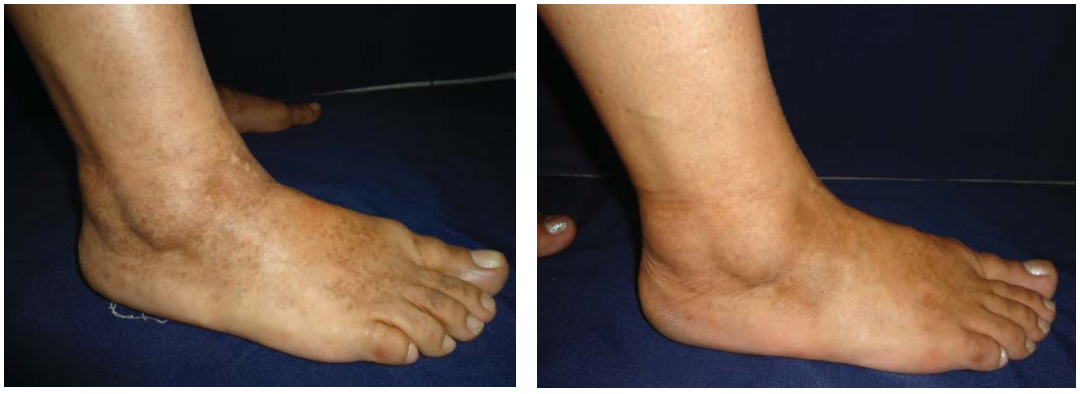

Figure 7: Lateral face of the right foot. Left: pre-peeling. Right: post-peeling

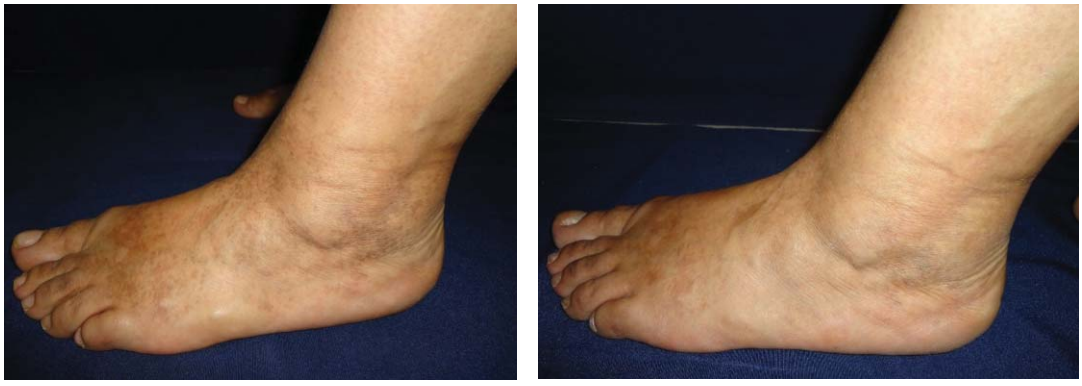

Figure 8: Lateral face of the left foot. Left: pre-peeling. Right: post-peeling

DISCUSSION

The etiology of Schamberg's disease is still unknown.[5] Triggering factors—such as hypersensitivity to drugs; and stasis, contact, and factitious dermatitis—were reported.[1] Although the exact pathogenesis is unknown, the capillary damage and entailed leakage of erythrocytes, seem to be the result of a lesion mediated by localized immune cells that is induced by a specific subtype of T helper lymphocytes[2,6] Histologically, perivascular mononuclear infiltrate can be observed in the upper dermis with extravasation of erythrocytes and hemosiderin deposition, however without fibrinoid necrosis of vessel walls[1]—a fact verified in the present case. To date, no treatment has demonstrated consistent beneficial effect. There are reports of improvement with topical steroids, griseofulvin, pentoxifylline, PUVA, anti-allergic drugs, colchicine, ascorbic acid, and oral rutosides.[1,5,6]

The residual stains common to this condition are a cause of distress for many patients, especially women. They seem to be

the result of hemosiderin deposits associated with melanic hyperpigmentation, since it is believed that there is melanocytic activation secondary to ferric pigment deposition in the dermis.[3]

Thioglycolic acid peeling is one of the treatment options for pigmentary disorders of ferric origin.[4] Serial and progressive peelings of 10% thioglycolic acid were proven to be a safe, efficient, and cost-effective therapeutic tool in the treatment of constitutional periorbicular hyperpigmentation.[7]

Thioglycolic acid—also called mercaptoacetic acid—is a representative of the thioglycolates class, and is considered a hemosiderin solubilizing substance.[3] Thioglycolates have long been used in the cosmetic industry as components of body epilators, chemical hair straighteners, and hair color.[8] Used topically, (from 5-12%) thioglycolic acid has the advantage of not causing pain or redness (sometimes mild), rare sensitization, and only mild and transient desquamation.[8] The literature recommends weekly applications, in gel, totaling five to six sessions. The procedure starts with local cleansing, followed by application of the product. The product is left on the skin for a period of 10-30 minutes and is then neutralized with water.[8] In the present case, the product was kept on the skin for 20 minutes, without the patients reporting any discomfort. Only mild erythema was observed after applying the product. The authors decided on biweekly sessions, given that mild desquamation occurred for up to ten days after the application sessions. The result obtained was significant, with the complete whitening of the stains in the lower third of the legs and on much of the dorsum of the feet (68.7% improvement) with high patient satisfaction. The absence of hemosiderin in the control biopsy may indicate a positive response to the treatment, since the sample was collected near the area of the previous biopsy, where there were previous stains. Despite the chronicity of the condition and probable recurrence of the lesions in the long-term, thioglycolic acid peeling was proven to be an efficient tool in the whitening of the lesions, with good tolerance and few side effects.●

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