Research Article

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Treatment of Acquired Perforating Dermatosis with Allopurinol

Naomi Carrara Matsuura[1]*, Luana Rocco Pereira Copi[2], Fernanda Pereira[1] and Lissa Nakazato[1]

[1]*Academic doctor of the college CERES, Brazil*

[2]*Doctor Dermatologist, specialist by the Society of Dermatology. Professor College of Medicine CERES - Sao Jose do Rio Preto, Sao Paulo, Brazil*

Abstract

Perforating dermatoses are papulonodular cutaneous pathologies characterized by transepithelial extrusion of components of the extracellular matrix of the dermis, by inflammation or degeneration. When secondary to systemic diseases they are called Acquired Perforating Diseases (APD). The APD is a rare condition, generaly associated with renal insufficiency, with an incidence of 11% of the patients submitted to the hemodialysis. In dialysis are not removed substances such as uric acid and calcium pyrophosphate, which settle in the dermis and cause a local inflammatory reaction. The lesions are located predominantly on the extensor surfaces of the limbs, trunk and head. They are characterized by plaques, papules or nodules which umbilicate in 3 to 5 weeks and regress in 6 to 8 weeks, forming an adherent keratotic buffer, and subsequent evolution to scarring or residual hyperchromia. Common symptoms are itching, pain, bruising and crusting. The objective of this paper aims to report a case of a 58 year old female patient, with acquired perforating dermatoses secondary to dialysis chronic renal failure and Multiple Myeloma. The treatment with Allopurinol proved to be effective in this case. Allopurinol would act as an antioxidant, reducing the inflammatory reaction in tissues and consequent damages to the collagen fibers.

Keywords: Allopurinol, Renal Insufficiency, Chronic, Prurigo, Perforating

***Corresponding author:** Naomi Carrara Matsuura, Academic doctor of the college CERES, Brazil, Tel: +038 988216390; E-mail: naomimatsuura.c@gmail.com

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Introduction

Perforating dermatoses are papulonodular cutaneous pathologies that are characterized by transepithelial extrusion of components of the extracellular dermal matrix, by inflammation or degeneration [1]. Perforating diseases are classified into primary or hereditary and secondary or acquired. Acquired Perforating Disease (APD) is a clinic pathological entity that is associated with systemic diseases [2,3]. The most prevalent symptoms of APD are pain and itching, with frequent bruising and crusting. Koebner's phenomenon occurs in 31% of the cases. The lesions are characterized by plaques, papules or nodules with 4 to 10 mm, which umbilicate in 3 to 5 weeks and regress in 6 to 8 weeks, forming an adherent keratotic buffer, and subsequent evolution to scarring or residual hyperchromia. The lesions are located predominantly on the extensor surfaces of the limbs and on the trunk and head, being more frequent the multiple localization.

The diagnosis is clinical and histopathological, implying the compliance of Fayer criteria: histopathology with transepidhermic elimination of basophilic necrotic collagen fibers in an epidermal depression in the form of cups, papules or umbilicated nodules with adherent keratotic center, and beginning after the age of 18 years. The differential diagnosis includes other perforating diseases, the nodular prurigo and hypertrophic lichen planus [4].

Materials and Methods

A female patient, 58-year-old, with dialytic chronic renal failure by Multiple Myeloma, presented 30 days ago appearance of erythematoviolaceous papules, pruritic umbilicates in the trunk region and limbs (Figure 1). Performed incisional biopsy compatible with APD (Figure 2). It was initiated treatment with topical corticosteroids and antihistamines with improvement only of the pruritus. It was prescribed Allopurinol 100mg daily, but no response after 4 weeks. The dose was optimized for 200mg daily and after 3 weeks there was resolution of the disease, without recurrence of lesions (Figure 3). After 6 months, medications were discontinued due to autologous bone marrow transplantation. Returned in consultation after 9 months with new APD lesions. It was again prescribed Allopurinol 200mg daily, with lesion resolution in 4 weeks.

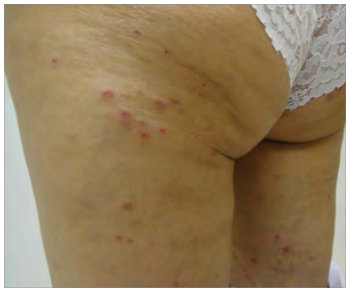

Figure 1: Umbilicated erythemato-violaceous papules in lower limbs and gluteus.

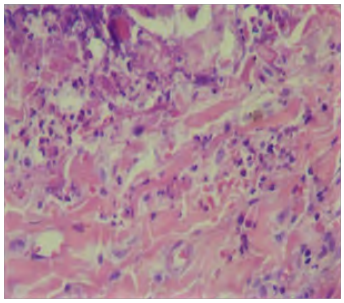

Figure 2: Hematoxylin & eosin, 100x Calcified basophilic collagen fibers.

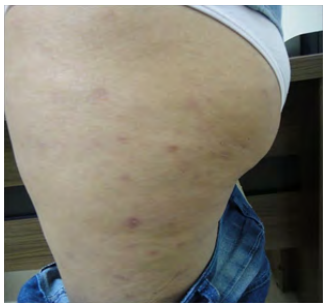

Figure 3: Resolution of the picture after treatment with Allopurinol.

Results and Discussion

The APD is a rare condition, with an incidence of 11% of the patients submitted to the hemodialysis, generally appearing at 56 years [4], similar to the case presented. In dialysis are not removed substances such as uric acid and calcium pyrophosphate, which settle in the dermis and cause a local inflammatory reaction.The leukocyte infiltrate releases cytokines such as interleukin-1 which stimulates the synthesis and activation of metalloproteinase, which degrade the components of the extracellular matrix. In addition, is believed that the chronic renal pruritus, which occurs in 50 to 90% of patients submitted to the hemodialysis, causes the rupture of fibers of the collagen system, tissue necrosis and its consequent elimination through the epidermis, resulting in a APD [5].

Several conducts have been suggested as treatment, but is not still available of controlled randomized clinical studies comparing the different therapeutic possibilities. Among them are the use of corticosteroids, antihistamines, phototherapy, topical retinoids and cryotherapy. The use of Allopurinol has been described as a new possibility of treatment in use isolated or associated with PUVA [6].The mechanism of action could be explained by the inhibition of Allopurinol in the xanthine oxidase enzyme. This enzyme is responsible for catalyzing the oxidation of hypoxanthine to xanthine, forming during this reaction reactive oxygen species [7]. These molecules are highly reactive due to their oxidative properties and can act directly on the lipid components of cell membranes, culminating in a destructive effect on the cell. Thus Allopurinol would act by decreasing the free of oxygen radicals that cause collagen damage [8]. A previous study demonstrated the efficacy of Allopurinol in the treatment of APD, using the initial dose of 100 mg per day oral, being observed an improvement of seven patients in a period of 4-weeks, and in five patients within 2 to 4 months [9].

Conclusion

In the reported case, Allopurinol was effective in APD treatment in double doses with results in 3 to 4 weeks, without recurrence of lesions during the patient follow up. There were no adverse effects reported. It was concluded that Allopurinol was effective for the treatment of APD triggered by chronic dialytic renal failure, acting as an antioxidant, reducing the inflammatory reaction in tissues and consequent damages to the collagen fibers.

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