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CASE REPORT

Symmetrical Cutaneous Siderosis of the Upper Limbs

Elisa Zavattaro*,**, Federica Veronese**, Pamela Farinelli**, Paola Savoia*,**

Abstract

Cutaneous Siderosis is a condition characterized by the hyperpigmentation of the soft tissues resulting from iron leakage occurring during iron replacement therapy. Even if it is a well-known condition, to date only a few reports are available in the literature, mainly describing it as a single lesion developing after intramuscular ferric injection, thus affecting the gluteal region. We report here a case of a 72-year-old patient that developed multiple macules affecting his upper limbs, after repeated intravenous iron extravasations. To our knowledge, this is the first report of Cutaneous Siderosis affecting symmetrically both the upper limbs with numerous elements.

Keywords

Cutaneous Siderosis, Iron replacement, Ferric carboxymaltose

Introduction

Cutaneous Siderosis (CS) is a condition caused by the accumulation of iron in the dermis leading to persistent focal hyperpigmentation of the skin. It is often secondary to extravasation of iron injection (either via intramuscular or intravenous). The clinical feature is characterized by the presence of different-size, brownish to grey macular lesions occurring some days or weeks after the drug administration, that can last indefinitely. Histology of CS shows the presence of pigment particles in the dermis and subcutaneous tissue, mainly localized in the macrophages, lower case Prussian Blue staining can help demonstrating the presence of iron in the specimen. [1,2] We report here a case of symmetrical CS affecting both the upper limbs.

Case Report

A 72-year-old Italian man presented to the Dermatology Outpatients Clinic with multiple brownish macular lesions located on both forearms. He had first noticed the lesions 3 months before and he denied pain or any other systemic symptoms. Clinical examination revealed the presence of three wide, flat macules: two were located symmetrically in the middle-dorsal surface of both the forearms and the other one in his left cubital fossa region *(Figure 1 A and B)*.

Dermoscopy examination of the macules revealed lack of pigmentary network and vascular abnormalities; only a brownish homogeneous tone was present. The patient denied topical application of ointments and any contact with chemical or herbal compounds in the site of macular lesions, as well as sun exposure since the last four months, when he was hospitalized.

Indeed, his clinical history was remarkable for a previous

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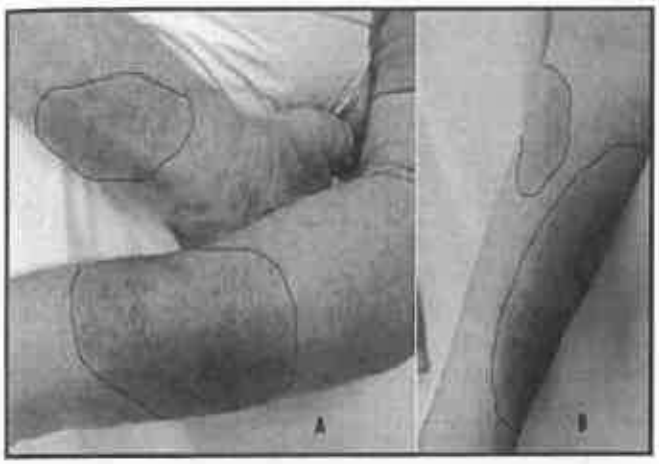

Fig 1. Clinical feature of the multiple flat macules affecting symmetrically both the patient's forearms (1A) and his left cubital fossa region (1B). The three macules have been marked in the picture.

Emergency Department admission for hearth failure due to severe iron-deficiency anaemia secondary to gastric ulcer, which led the patient to a long recovery and required numerous intravenous iron replacements with ferric carboxymaltose injection. The patient was asked about any drug leakage occurred during the recent recovery; thus, he remembered of multiple extravasations of iron replacement that took place a few weeks before the appearance of the macules.

On the basis of both clinical history and cutaneous feature, a diagnosis of symmetrical CS of the upper limbs was made. Unfortunately, the patient refused to submit to cutaneous biopsy, since he believed CS to represent a merely aesthetic issue; moreover, he rejected any treatment.

Discussion

Cutaneous Siderosis (CS) is a hyperpigmentation of the skin, mainly due to the iatrogenic iron compounds storage into the soft tissues.

In the literature, CS has been rarely reported as a result of intravenous administration and subsequent extravasation,[1] while most of the cases occurred after intramuscular injection and subsequent reflux of iron in the subcutaneous tissues. [2-4] Consequently, the most frequent site of localization of CS lesions is represented by the gluteal region. Conversely, it has also been reported one case of face-localized dyschromia following oral iron supplementation.[5] Somehow, CS due to injection site extravasation is a rare adverse reaction, accounting for 2.2% of cases reported in a clinical trial involving 139 patients complaining chronic kidney disease and treated with iron supplementation.[6] Our case reports a bilateral and symmetrical localization affecting both the upper limbs, that occurred after multiple extravasations of intravenously injected ferric carboxymaltose.

In the literature, clinical cases reporting CS are often due to the administration of iron sucrose or iron dextran,[3,4] unless the administered drug can also be not mentioned.[5] Only one recent paper reports the efficacy of pigment lasers in a cohort of 15 patients complaining CS due to the ferric carboxymaltose leakage.[7] It is well-known that iron dextran can be associated with severe immunologic responses, thus including anaphylaxis, while iron sucrose has a lower incidence of such reactions, but it requires multiple infusions. Ferric carboxymaltose allows the administration of a high dose of intravenous iron in a single dose, thus permitting a complete iron replacement in a shorter period. On the contrary, our patient required numerous administrations, given the severe anaemia leading to the hearth failure.

The management of extravasation of iron injection recommends to immediately stop the infusion, apply topical steroid and to carefully monitor the patient to prevent blisters formation and/or tissue necrosis. Once the CS has developed, its treatment is difficult and, to date, some studies have reported the efficacy of Quality-switched Alexandrite laser, Nd:YAG and Ruby lasers.[1,3,5,7] Our case patient did not require topical therapy and refused laser treatment.

Unless we cannot show the histologic feature, we are strongly convinced about the CS diagnosis. Whit this in mind, we agreed with our patient that the skin biopsy procedure was not mandatory to confirm the diagnosis. We report the present case since CS is only rarely reported in the literature, unless it is a condition that deserves to be known and remembered, mostly when starting iron replacement therapy. To the best of our knowledge, this is the first report of CS affecting symmetrically both the upper limbs, and, differently from most of the previous reports, it was due to iron carboxymaltose administration.

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