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Case Repost Open Access

Transitory Acquired Flagellate Ictyosis, an Easy Treatment

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Abstract

We described the case of 45 years-old woman affected by a flagellate dermatitis arisen immediately after having a bath in sulfurous thermal water. Such dermopathy resolved after a common scratching of the lesions by the patient, so that the possible pathogenetic mechanism to explain the resolution of the lesions is the mechanical removal of cornified cell layer. After six months follow-up, the patient is in good conditions, without relapses of the flagellate dermatitis.

Keywords: Flagellate dermatitis, Sulfurous thermal water

Case Study

Flagellate dermatitis is a cutaneous disease usually related to specific drugs as bleomycin or other chemotherapies.

The term "flagellate" is linked to the particular arrangement and morphology of the lesions, suggesting cutaneous signs deriving from tortures or sadomasochistic sexual practices.

In July 2014, 45 years-old healthy woman, with a light xerotic skin, presented some linear and differently oriented pigmented macules with a flagellate shape, localized on her lower limbs, arisen after having a bath in sulfurous thermal water (Figure 1, Table 1).

The same lesions had appeared slightly also two weeks before, after having the same bath. In both events the patient, on her own initiative, superficially scratched the macules immediately after the bath, removing cornified material with the resolution of the dermatitis (Figure 2).

Parameter	Unit of measure	Methodical	Result
Temperature at the source	°C	Method APAT IRSA/CNR ed. 29/2003 n°2100	24.0
Concentration of hydrogen ions to the water temperature at the source	Unit of pH	Method APAT IRSA/CNR ed. 29/2003 n°2060	6.34
Silica	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°3020	48.1
Hydrocarbon ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n° 2010	1.531
Chloride ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°4090° A1	163
Sulphate ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°4140	905
sodium ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°3020	164
potassium ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°3020	36.0
Calcium ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°3020	721

Magnesium ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°3020	159
Iron ions (dissolved)	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°3020	2.0
Ammonium ions	mg/L	Method APAT IRSA/CNR ed. 29/2003 n°4030	2.60
Iodide ions	mg/L	Standard Methods 20th edition method 4500 - I- C	0.04

Table 1: Main components of thermal water that causes flagellate dermatitis in our patient. Note the high concentration of sulphate ions.

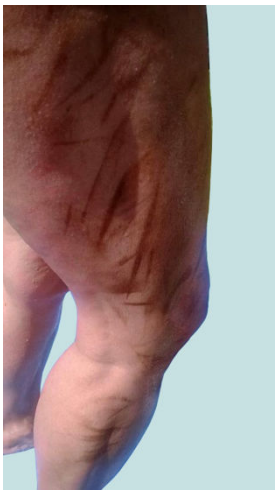

Figure 1: Flagellate dermatitis with linear and differently oriented pigmented macules with a flagellate shape, localized on the lower right limb of the patient, after the bath in sulfurous thermal water.

The patient denied any assumption of drugs, or contact with grass and stinging substances before the appearing of the dermatitis. The clinical history of the patient was negative for any cutaneous or systemic diseases and haematochymic exams we performed were all in the normal range.

When we observed the lesions appeared in the second event, we had taken a sample of cornified material, treated with potassium hydroxide solution and we noticed the presence of cornified cells. The patient referred she had never bathed in sulfurous thermal water again, and after six months follow-up, she had no relapses of the flagellate dermatitis.

Flagellate dermatoses are persistent cutaneous lesions, so defined because of their typical whip-shaped aspect [1-3].

They are usually related to specific drugs as bleomycin or other chemotherapies but can be also the clinical manifestation of phytodermatitis or photodermatitis [4-6].

The pathogenetic mechanism of typical flagellate dermatoses is not well-known, even if an increased melanogenetic process or an increased epidermic cell turnover are the main causes described in literature [2,7].

Figure 2: The resolution of the flagellate dermatitis after the superficial scratching of the macules by the patient immediately after the bath.

Thermal waters generally have healthy effects for skin, due to their chemical components; in fact they are used in different cutaneous diseases, like psoriasis, seborrheic dermatitis, eczematous dermatitis, Still's disease and many others [8-12].

Sulfurous water, a particular type of thermal water, is composed by both ionic and combined sulfur.

Into the skin, sulfur interacts with cysteine rich elements and its catabolites, favouring an antinflammatory, antipruriginous and pro-differentiative action. Moreover, sulfur reacts with free oxygen radicals, producing hydrogen sulfide that has an antimicrobic and antimycotic action. Concerning to keratinocyte differentiation process, sulfur generates the thickening of malpighian layer [13-15].

We hypothesize that this latter effect of sulfur on skin is responsible for the cutaneous lesions on our patient. The flagellate shape and the single involvement of the lower limbs are more difficult to explain. Because of the quick disappearing of the dermatitis, we couldn't perform histological examination of the lesions but only a scratching of the superficial layer that showed desquamative cornified cells by light microscopy.

We named the described dermatitis "Transitory Acquired Flagellate Ichthyosis", because the scratching spontaneously induced by the patien, resolved the dermatitis in both cases so we suppose that an increased number of cornified cells accumulates on epidermal superficial layers.

More studies are necessary; to better identify this new nosologic entity.

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