

## A Culprit of Lichenoid Reaction: Red Tattoo

*To the Editor.* - A 28 year old man admitted to our dermatology department with six month history of erythematous swelling at the tattoo area on his left arm. He noted that the tattoo was made a year ago and only the red pigment area of the tattoo was affected. Dermatological examination showed linear erythematous-squamous plaques with sharp borders restricted to the red pigment area (**Figure 1**). Skin biopsy revealed superficial focal parakeratosis and slightly acanthosis of the epidermis and basal cell liquefactive degeneration with band-like lymphohistiocytic infiltration predominantly with T cells in the dermo-epidermal junction and deep dermis (**Figure 2**). Based on these clinical and histopathological findings, the patient was diagnosed as red tattoo related lichenoid dermatitis.

Tattoos appear to be aesthetic and also become a way to express individuality especially in adolescents. Therefore, tattooing has been very popular in recent years. Thus, current popularity increase the risk of adverse effects related to the tattoos. Tattoo related side effects can be classified as infectious, inflammatory and neoplastic. Infections can be seen as systemic (hepatitis, HIV) or local forms. Malignancies have been reported in the tattoo area nevertheless the mechanism is not clearly defined [1].

Inflammatory reactions include eczematous, lichenoid and granulomatous pattern. The most common form is local lichenoid reaction [1]. There are few cases of generalized lichenoid reactions too [2]. The most culprit pigment is the red one which contains mercury and its sulphides. However, mercury isn't the only reason of the reactions related to red pigment. X-ray microanalysis of the red pigment revealed aluminium, iron, calcium, titanium, silicon and cadmium which have also been thought in the etiology [3]. The emergence of the reaction onset is variable. It can be seen in months even years [4]. In our case the lesion occurred after

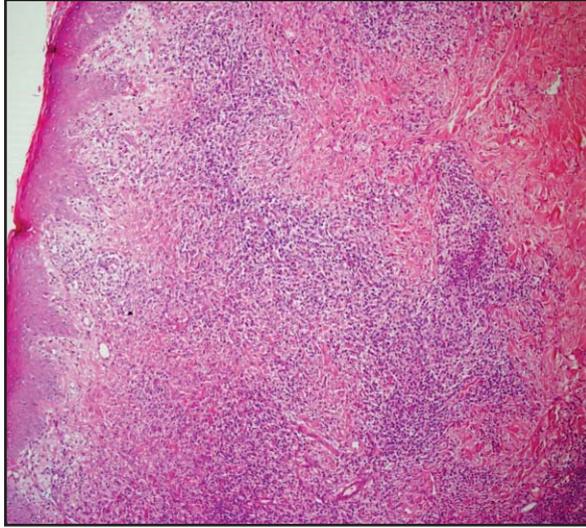
6 month. Lichenoid reaction believed to be a localized delayed T cell mediated hypersensitivity [1]. *Aguayo-Leiva et al* [5]. reported a case of red tattoo related lichenoid reaction accompanying with alopecia areata. They were considered as related disorders because both of them are autoimmune and lymphocytic mediated reactions.

Treatment options can be medical, surgical and laser treatment. Q-switched Nd: YAG laser has shown better results in patients with tattoo related reactions [1, 2, 4]. The patient treated with clobetasol propionate ointment twice a day for 2 weeks and referred to laser therapy.

In this case we wanted to emphasize the tattoo related lichenoid reactions. Understanding the mechanism of lichenoid reactions due to red pigment may help us to define the etiology of lichen planus.



**Figure 1.** Erythematous, squamous plaques with sharp borders restricted to the red pigment area on the left arm



**Figure 2.** Superficial focal parakeratosis and slightly acanthosis of the epidermis and basal cell liquefactive degeneration with band-like lymphohistiocytic infiltration predominantly with T cells in the dermo-epidermal junction and deep dermis. ( H&E, x100)

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