

## DISCOID LUPUS ERYTHEMATOSUS IN RED TATTOO

K. PAVITHRAN\*

## Summary

A case of discoid lupus erythematosus developing in red tattoo is reported in an elderly man. The possible mechanisms of its development are discussed.

KEY WORDS : Discoid Lupus Erythematosus, Red tattoo.

The art of the tattoo is the introduction of coloured metallic salts into the upper dermis by means of a high speed vibrating needle. The pigments include the white of titanium, the red of mercury, the blue of cobalt, the brown of iron, yellow of cadmium, green of chromium or violet of manganese<sup>1</sup>. Phagocytized by the macrophages these pigments remain localised to the precise site of introduction within the skin. Sometimes infections like tuberculosis, leprosy, syphilis, wart<sup>2</sup>, vaccinia or serum hepatitis<sup>3</sup> may follow tattooing. Allergic or nonallergic reaction at site of tattooing is another complication. Tattooing may also bring out certain latent diseases like psoriasis, lichen planus and morphea. Here we report a case of discoid lupus erythematosus, in which the lesions were found confined to the red tattoos only, though the blue tattoos was also beside.

## Case report

A fifty years old male was seen in the dermatology section of Medical College

\* Assistant Professor,  
Dept. of Dermatology & Venereology,  
Medical College Hospital,  
Kottayam-686 008.

Paper presented at the meeting of  
IADVL Kerala Branch,  
held at Kottayam on 12-12-'83

Received for Publication on 18-4-'83.

Hospital, Kottayam with an asymptomatic scaly plaque on his left forearm for 6 months. He was tattooed on the forearms when he was ten years old. On the right forearm a flower was drawn with blue pigment while on the left side was tattooed a picture of Jesus Christ on the cross. Jesus was drawn in blue colour and there were three transverse red lines at the top, middle and bottom of this figure. The patient developed skin lesions on these red tattoo lines only. Examination revealed well defined oval and linear scaly plaques with central scarring, atrophy and carpet tack scales, the lesions being strictly confined to the areas of red tattoos (Fig 1 & 2). The red colour of the tattoo was still visible at the ends of the plaques. There were no lesions on the blue tattoos or on other parts of the body. A detailed clinical examination did not reveal any systemic lesions.

## Investigations

Urinalysis and a complete haemogram including the test for LE cells did not show any abnormality. Roentgenogram of the chest also was without any abnormality. Skin biopsy of the plaque revealed hyperkeratosis, keratotic plugging, atrophic epidermis and liquefaction degeneration of the basal cell layer. There was oedema

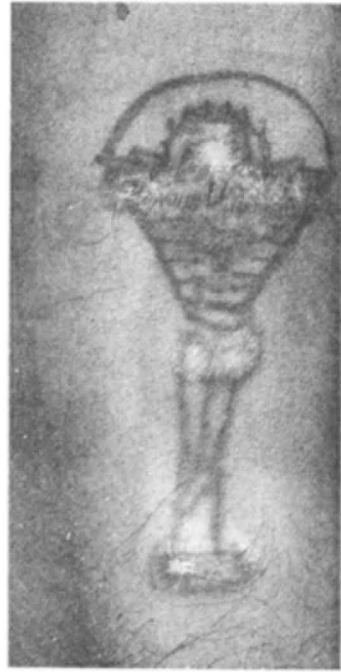


**Fig. 1** Scaly linear plaques on the tattoo of left forearm.

in the upper dermis and patchy lymphocytic infiltration around the blood vessels and appendages. There were tattoo pigments lying within the histiocytes as well as free in the upper and mid dermis. Patient was prescribed topical corticosteroid and a course of chloroquin orally but without much benefit.

#### Discussion

The development of DLE lesions confined to the red tattoos only, sparing completely the blue, in the present case is interesting. Such a phenomenon has already been reported by Fields et al in a young man<sup>4</sup>. The exact mechanism of this is not well understood. Fields et al<sup>4</sup> were able to produce DLE lesions over a red tattoo, after exposing the area to hot quartz lamp. We do not know what compound was used in our patient's tattoo. The pigment used in red tattoo is usually cinnabar which contains mercuric



**Fig. 2** Tattoo on the left forearm. Close up view. Note the DLE lesions at the middle and bottom of the figure (Jesus Christ).

chloride. Cadmium sulphide, a photosensitizer, is often admixed with mercuric chloride<sup>1</sup> so that the red areas may show photosensitivity. In the case reported by Fields et al, the DLE lesions were found confined to the red tattoos, only in sun-exposed areas. In our case, the red tattoo was on the forearm, an uncovered part. The DLE in the present case must have been triggered by photosensitivity caused by pigment in the red tattoo and the ultraviolet rays in the sunlight. DLE is an autoimmune connective tissue disease that develops in the skin exposed to the trauma of sunlight. In view of the current theories of SLE it is attractive to assume that the sunburnt skin releases an UVL-altered DNA which serves as the antigen causing the locally destructive lesion.

It is well known that DLE may develop at site of previous trauma-kobner phenomenon. The trauma alone of tattooing is unlikely to be responsible for inducing DLE, in the present case, because there were no lesions on tattoos coloured blue. So a photosensitive state by the UV rays in sunlight and photosensitising pigment in the tattoo must have been a triggering factor, which induced DLE in this case.

#### References

1. Shelly WB: Consultations in Dermatol  
logy II with WB Shelly, WB Saunerds  
Company, London, 1974; p. 320.
2. Watkins DB: Viral Diseases in Tattoos,  
Arch Dermatol, 1961; 84 : 306-309.
3. Mowat NAG, Albert - Recht F, Brunt  
PW et al : Outbreak of serum hepatitis  
associated with tattooing, Lancet, 1973 ;  
1 : 33-34.
4. Fields JP, Little WD & Watson PE :  
Discoid Lupus Erythematosus in Red  
Tattoo, Arch Dermatol, 1968 ; 98 : 667-  
669.