

**TATTOO REACTIONS: A REPORT OF 2 CASES**

Kambil Srinath M., MD and \*Vijayan Brijina K., DA

Karuna Medical College.

\*Corresponding Author: Vijayan Brijina K., DA

Karuna Medical College.

Article Received on 13/10/2020

Article Revised on 03/11/2020

Article Accepted on 23/11/2020

**ABSTRACT**

Tattooing is being increasingly used for body art and cosmetic purposes in recent times. Adverse reactions associated with tattooing include infections and allergic reactions to the tattoo pigment. Lichenoid reactions and granulomatous reactions are types of allergic reactions which may occur on the tattoo. We report 2 cases of tattoo reactions, a lichenoid pattern and a granulomatous type of reaction.

**KEYWORDS:** tattooing, granulomatous, lichenoid.

**INTRODUCTION**

Tattooing has been in practice in India since ancient times as a part of tribal art and religious belief. In recent times cosmetic tattooing and body art tattooing has gained much popularity. This has also led to an increase in adverse effects of tattooing.<sup>[1]</sup> Here we report 2 cases of tattoo reaction, a lichenoid pattern and granulomatous type of reaction.

**CASE REPORTS**

Case 1: A 25 year old male presented with asymptomatic raised lesions of 3 months duration over the tattoo on his left forearm. Tattooing was done 1 year ago in a local parlour. On examination, multiple skin coloured nodules and plaques were seen over the green pigmented tattoo

present over the middle 1/3<sup>rd</sup> of the flexor aspect of the left forearm [Figure 1]. Biopsy taken from one of the nodules showed epidermis with marked hyperkeratosis and acanthosis. Dermis shows dense perivascular and periadnexal lymphoid aggregates with plasma cells, histiocytes and few multinucleated giant cells and a focus of dermal collection of intracellular and extracellular brown to black pigment which was suggestive of tattoo induced granulomatous reaction [Figure 2a and b]. Special stain and culture for fungus and mycobacteria and Mantoux test were negative. Chest X-ray and serum ACE levels were normal. Patient was treated with intralesional corticosteroids and was advised laser tattoo removal, but was lost for follow up.



Figure 1: Granulomatous tattoo reaction.

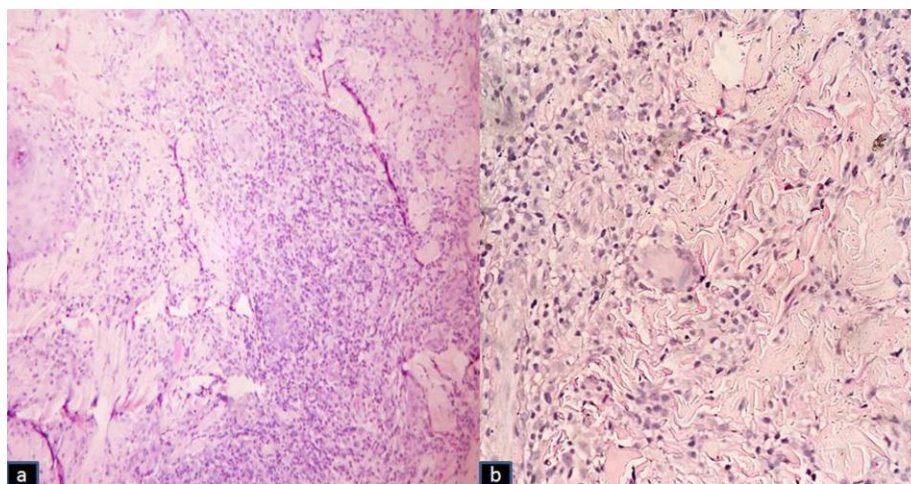


Figure 2. a and b.

Case 2: A 29 yr old male patient with complaints of pruritic red raised lesion of 5 months duration over the tattoo on right forearm which was done 6 months ago. On examination, erythematous plaques were seen within the tattoo area at the site of red ink while green ink tattoo was uninvolved [Figure 3]. Biopsy from the

erythematous plaque showed mild hyperkeratosis, acanthosis and focal basal cell vacuolar degeneration. Dermis shows dense lichenoid infiltrate composed of lymphocytes and histiocytes in a perivascular pattern suggesting a diagnosis of lichenoid tattoo reaction [Figure 4a and b].



Figure 3: Lichenoid tattoo reaction.

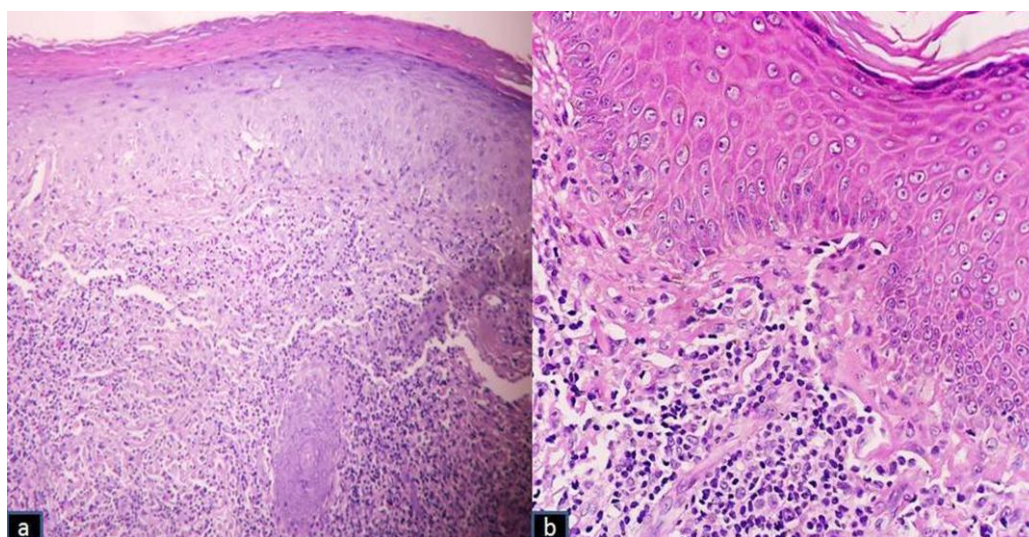


Figure 4. a and b.

**DISCUSSION**

With the increasing popularity of tattooing for body art and cosmetic purposes, there is also an increased risk of adverse effects. It can act as a portal for entry of pyogenic infections and also for HIV, Hepatitis B and C, mycobacteria and deep fungal infections.<sup>[2],[3],[4]</sup> Allergic reactions to tattoo pigment may occur and the various histologic patterns described include lichenoid, allergic contact dermatitis, photoallergic dermatitis, pseudolymphomatous, granulomatous, morphea like and sarcoidal reaction.<sup>[2],[5],[6],[7]</sup> Severe reactions like uveitis, disseminated granulomatous reaction, erythema nodosum and ulceration of tattoo may occur. Tattoo reactions can occur with organic dyes and inorganic pigments, but more commonly associated with red pigment containing mercuric sulphide.<sup>[8]</sup>

Granulomatous tattoo reaction may be a foreign body reaction to the tattoo pigment or it can be sarcoidal. Sarcoidal reaction may be a manifestation of systemic sarcoidosis or it may be localised reaction without any systemic manifestations.<sup>[1],[9]</sup> Mycobacterial and deep fungal infections may also present with granulomatous lesions on the tattoo.<sup>[2],[3]</sup> Hence it is essential to rule out these infections and sarcoidosis when histology shows granulomatous pathology. Lichenoid tattoo reactions may present as erythematous scaly plaques or verrucous plaques with lichenoid pattern of histology. It is usually seen with red pigment that contains mercury and this may be triggering a localised form of lichen planus in tattoo areas.<sup>[1],[10],[11]</sup>

Tattoo reactions are less reported in literature. To reduce adverse reactions to tattoos it is essential to do it under strict aseptic precautions and red dyes especially which contain mercury is avoided. This case report highlights the importance for dermatologists to be aware of the various adverse effects of tattooing which has become more popular in recent times.

**REFERENCES**

1. Sanghavi SA, Dongre AM, Khopkar US. Tattoo reactions--an epidemic on the surge: a report of 3 cases. *Indian J Dermatol Venereol Leprol*, 2013; 79: 231-4.
2. Wollina U. Severe adverse events related to tattooing: an retrospective analysis of 11 years. *Indian J Dermatol*, 2012; 57: 439-43.
3. Bary P, Kuriata MA, Cleaver LJ. Lymphocutaneous sporotrichosis: a case report and unconventional source of infection. *Cutis*, 1999; 63: 173-5.
4. Apte G, Gedam JR, Poojary S, Nagpur NG, Pai VV, Ganapathi R. Chromoblastomycosis in a case of borderline lepromatous leprosy with recurrent type II lepra reaction. *Lepr Rev*, 2011; 82: 310-5.
5. Ortiz AE, Alster TS. Rising concern over cosmetic tattoos. *Dermatol Surg*, 2012; 38: 424-9.
6. Blumental G, Okun MR, Ponitch JA. Pseudolymphomatous reaction to tattoos. Report of three cases. *J Am Acad Dermatol*, 1982; 6: 485-8.
7. Kluger N, Mathelier-Fusade P, Moguelet P. Scleroderma-like reaction restricted to red parts of a tattoo. *Acta Derm Venereol*, 2009; 89: 95-6.
8. Kaur RR, Kirby W, Maibach H. Cutaneous allergic reactions to tattoo ink. *J Cosmet Dermatol*, 2009; 8: 295-300.
9. Post J, Hull P. Tattoo reactions as a sign of sarcoidosis. *CMAJ*, 2012; 184: 432-3.
10. Aguayo-Leiva I, González-García C, Pérez B. Lichenoid red tattoo reaction and alopecia areata. *Int J Dermatol*, 2011; 50: 893-5.
11. Taaffe A, Knight AG, Marks R. Lichenoid tattoo hypersensitivity. *Br Med J*, 1978; 1: 616-8.