Tattoo-associated uveitis

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A 19-year-old man with extensive body tattooing presented with recurrent episodes of reduced vision, bilateral photophobia and concomitant swelling of body tattoos. He had multiple tattoos over his entire body with mainly black pigment and occasional red and yellow pigment, performed over a period of 3 years prior to the presentation of ocular symptoms. He enjoyed good past health with no history of autoimmune diseases. There was no joint pain, skin rash or chest symptoms.

Ophthalmological examination revealed bilateral injection, anterior chamber cells, posterior synechiae (Fig 1) and marked vitritis, consistent with anterior and intermediate uveitis. There were no mutton-fat keratic precipitates or iris nodules. Presenting visual acuity was 20/200 in both eyes. Dermatological examination showed prominent induration of skin with mild tenderness in areas of body tattoo containing black pigment (Fig 2). Non-tattooed skin was unremarkable with no signs of inflammation. Incisional skin biopsy was taken from an area of prominently indurated tattoo. Histopathology showed marked non-caseating granulomatous reaction within the dermis and abundant black pigment deposition (Fig 3). Periodic acid-Schiff staining showed no fungal elements. Chest radiograph was clear with no hilar lymphadenopathy and interferon-gamma releasing assay was negative. Syphilis and human immunodeficiency virus serology was negative. Immune markers including antinuclear antibodies, antineutrophil cytoplasmic antibodies and anti-extractable nuclear antigens antibody were negative. The patient declined a blood test for angiotensin-converting enzyme level due to the associated cost. Serum calcium was not elevated.

FIG 1. Slit lamp photo of the right eye showing ciliary injection, posterior synechiae formation. There were no iris nodules

FIG 2. Prominent induration of part of a tattoo containing black pigment. Surrounding non-tattooed skin was unremarkable

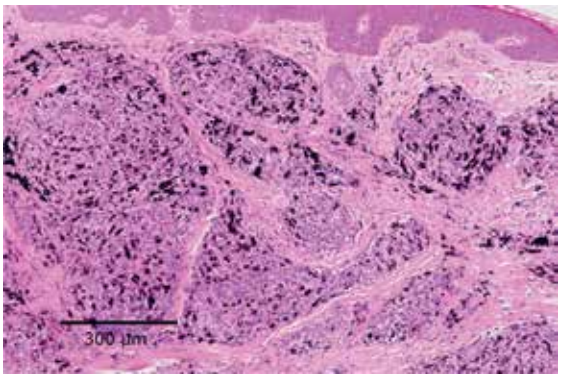

FIG 3. Skin biopsy of indurated tattoo under haematoxylin and eosin staining showing dermal deposition of black pigment and marked non-caseating granulomatous reaction

He was treated with topical prednisolone and oral prednisolone 60 mg daily after exclusion of infectious uveitides. Body tattoo swelling subsided rapidly after systemic steroid and the uveitis was brought under control gradually with significant

improvement in bilateral vision. He was maintained on mycophenolate mofetil 1g twice a day as a steroid-sparing agent for uveitis control. His oral prednisolone was tapered to below 15 mg daily. His visual acuity improved and maintained at 20/30 bilaterally. There were no features of systemic sarcoidosis. Overall clinicopathological features were compatible with tattoo-associated uveitis, a rare dermato-ophthalmological complication of body tattooing.

Systemic sarcoidosis, a rare disease in Asians, can occasionally cause tattoo granuloma and uveitis.[1] Tattoo-associated uveitis without systemic sarcoidosis is a rare entity first described in a case series half a century ago.[2] The disease is characterised by recurrent episodes of uveitis in conjunction with raised and indurated tattoo, while histology of affected skin demonstrates florid non-caseating granulomatous reaction indistinguishable from tattoo granuloma in systemic sarcoidosis.[3] The exact pathogenesis is unknown, but it was believed to be a type of delayed hypersensitivity reaction to tattoo pigments.[3] Treatment is mainly to control ocular inflammation by topical and systemic steroid, with or without steroid-sparing agent. Tattoo excision has been reported to be useful in limiting recurrences.[1,3] However, the extensive tattoo involvement in our patient rendered excision impractical.

In summary, the clinical photos illustrate a rare case of tattoo-associated uveitis, highlighting the importance of inquiry into tattoo history and skin examination of tattoos in a patient with recurrent uveitis.

Author contributions

Concept or design: CY Mak, ME Brelen, AL Young.
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Drafting of the manuscript: CY Mak, M Ho, AZ Chan.
Critical revision of the manuscript for important intellectual content: All authors.

All authors had full access to the data, contributed to the study, approved the final version for publication, and take responsibility for its accuracy and integrity.

Conflicts of interest

All authors have disclosed no conflicts of interest.

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Ethics approval

This patient was treated in accordance with the Declaration of Helsinki. The patient provided written informed consent for all treatments and procedures and for publication of clinical photos.

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