

Sarcoid Uveitis: A Look Beyond The Eyes

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Background: Bilateral acute uveitis can cause significant morbidity, and a complete workup is often warranted. This report illustrates a case of sarcoid uveitis definitively diagnosed by skin biopsy in a patient with red tattoo ink.

Case Report: A 40-year-old African American male presented with bilateral photophobia and intraocular pressures of 26 mmHg in both eyes, 1+ grade cell and flare in both eyes, and granulomatous (mutton fat) keratic precipitates in both eyes. Serum angiotensin-converting enzyme level was elevated at 146 U/mL (normal value <40 U/mL), and computed tomography imaging revealed mediastinal and hilar lymphadenopathy. Multifocal induration and elevation in the areas of red pigment of a tattoo were also present and on punch biopsy revealed noncaseating granulomas, confirming the diagnosis of sarcoid uveitis.

Conclusion: Our case suggests that a complete physical examination and inquiry about the presence of any tattoos should be conducted as part of the workup of uveitis.

Keywords: Sarcoidosis, tattooing, uveitis

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INTRODUCTION

Sarcoidosis is an inflammatory disease characterized by the formation of noncaseating granulomas in affected organs. In the United States, the incidence of sarcoidosis is thought to be 11 cases per 100,000 people.¹ The prevalence of sarcoidosis is 10 times greater in black patients compared to white patients. Black patients are also more likely to have an acute presentation of the disease and a more severe clinical course.¹

The etiology of sarcoidosis is still unknown. As previously stated, the disease is characterized by the formation of noncaseating granulomas in affected organs, most commonly the eyes, lungs, lymph nodes, and skin. Histologically, these granulomas are comprised of epithelioid histiocytes, lymphocytes, and multinucleated giant cells.² Ocular involvement occurs in approximately one-quarter of the patients affected by the disease, and sarcoid uveitis comprises 3%-10% of all cases of uveitis.²

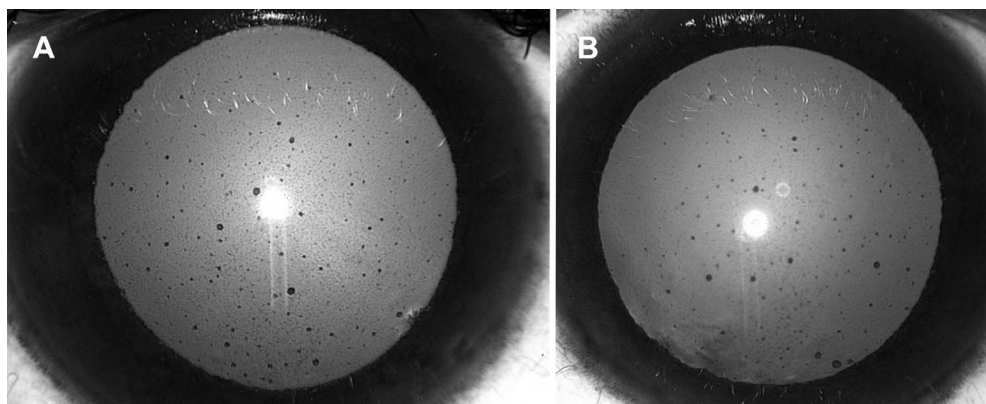


Figure 1. Slit lamp photographs demonstrate mutton-fat keratic precipitates in the right eye (A) and left eye (B).



Figure 2. Photograph of the patient's tattoo shows red-pigmented areas exhibiting induration.

Symptoms of sarcoidosis include fever, cough, dyspnea, fatigue, erythema nodosum, acute polymyositis, arthritis, and skin nodules. Ocular symptoms include blurred vision, photophobia, floaters, redness, and pain.³ Diagnostic workup of sarcoidosis includes testing for an elevated angiotensin-converting enzyme (ACE) level and chest x-ray to assess for the presence of hilar lymphadenopathy. However, definitive diagnosis of sarcoidosis requires a positive biopsy. Typically, an easily accessible site without risk of significant morbidity is chosen. Conjunctival biopsies, because of the ease of access and low risk of morbidity, have been typically performed but have unreliable success rates.⁴ In contrast, directed biopsy of affected skin or lymph nodes has had more reliable success rates.⁵

CASE REPORT

A 40-year-old African American male presented to the eye clinic with acute bilateral photophobia and visual acuity of 20/20 in both eyes. The patient reported that his

ocular symptoms began approximately 2 weeks prior to presentation. Intraocular pressure was 26 mmHg in both eyes. Slit lamp examination demonstrated bilateral granulomatous (mutton fat) keratic precipitates (Figure 1) and 1+ grade cell and flare in both eyes. Serum ACE level was elevated at 146 U/mL (normal value <40 U/mL), and computed tomography imaging revealed mediastinal and hilar lymphadenopathy. These findings are consistent with a diagnosis of sarcoidosis. During the review of systems, the patient reported that the red ink of a tattoo on his left arm had started to become elevated, concurrent with the onset of his photophobia (Figure 2). A punch biopsy of the elevated skin under the red pigment demonstrated noncaseating granulomas and confirmed the diagnosis of sarcoidosis-related uveitis (Figure 3). The patient was administered topical and systemic steroids and showed marked improvement of symptoms. He has been followed for 2 years after his original presentation and remains in remission.

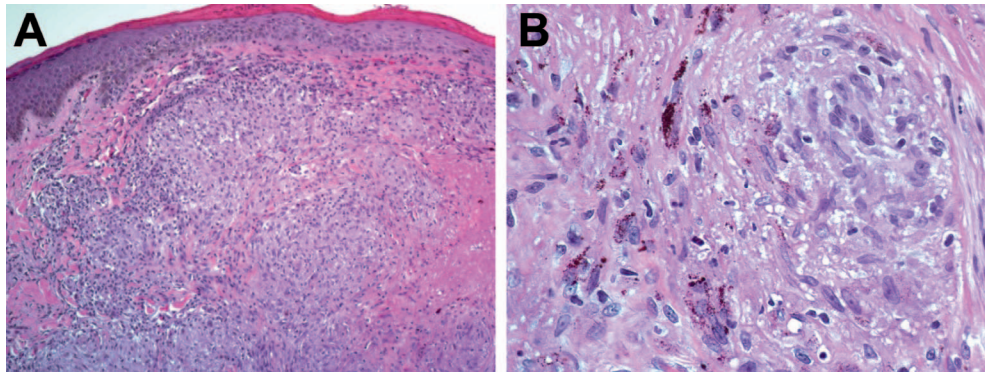


Figure 3. Punch biopsy of the raised areas of the tattoo stained with hematoxylin and eosin under low power (A, 10× magnification) and high power (B, 40× magnification) shows noncaseating granulomas surrounding red tattoo pigment.

DISCUSSION

Definitive tissue diagnosis of sarcoid uveitis can be a challenge for the patient and care team. Blind conjunctiva biopsies are unreliable diagnostic tools,⁴ making the biopsy-proven diagnosis of ocular sarcoidosis difficult. Furthermore, cutaneous granulomas may be the only sign of systemic sarcoidosis.⁶ Approximately 10%-25% of the general population in western countries is believed to have been tattooed, and along with the incidence of sarcoidosis which is believed to be 11 per 100,000 people, it is expected that 1-2 per 10,000 tattooed individuals have sarcoidosis.^{1,7} Patients with tattoos have been reported to experience a granulomatous reaction to tattoo ink, potentially providing an easily accessible source for a tissue diagnosis.⁸ The positive skin biopsy spared our patient more invasive diagnostic procedures and confirmed our suspicion of sarcoid uveitis. Reports in the literature have suggested treating sarcoid uveitis with topical or systemic steroids and/or immune-modulating therapies.^{7,9,10} Our patient was administered systemic and topical steroids and showed marked improvement and sustained remission on this treatment.

CONCLUSION

Sarcoidosis is a relatively common condition with nonspecific symptoms requiring a biopsy for confirmation. Because blind conjunctival biopsies have a low yield, determining whether other easily accessible locations for biopsy are available is important. When assessing a patient with uveitis, a full review of systems including the presence and inspection of any tattoos is warranted.

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