

Eye injury from tarantula

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A B S T R A C T

BACKGROUND

Tarantulas have become increasingly popular pets. Typically, owners are unaware of the potential risk of ocular injury from the barbed urticating (vascular reaction of the skin associated with itching) hairs found on the dorsal aspect of a tarantula's abdomen.

CASE REPORT

A 22-year-old man experienced a red eye with excruciating pain after handling a tarantula. On examination, slit-lamp biomicroscopy revealed approximately 30 to 40 barbed tarantula hairs in the conjunctiva, penetrating all layers of the cornea. These foreign bodies were causing pain, conjunctival injection, and an anterior chamber reaction. The patient's condition was diagnosed as ophthalmia nodosa and was effectively treated with topical corticosteroids.

RESULTS

Patients who manifest red eye and pain after handling a tarantula should be examined to determine if offending barbed hairs are present in the cornea and conjunctiva. To obtain a correct diagnosis, a detailed case history and careful slit-lamp biomicroscopy must be performed.

KEY WORDS

tarantula, urticating hairs, topical corticosteroids, ocular injury

Tarantulas—especially the more colorful and aggressive species found outside the United States—are increasingly being obtained as pets. Most owners are unaware, however, of the potential for debilitating eye injury from these exotic pets.

When threatened or provoked, the tarantula moves its hind legs to the dorsal part of its abdomen, where urticating barbed hairs are located.¹ It then vibrates its legs rapidly, flicking the barbed hairs into the air and into the path of unsuspecting victims.² The mode of injury can be ocular or respiratory. The barbs of the hairs facilitate deep, merciless penetration into tissue—especially ocular tissue.

Case Report

A 22-year-old man, who was on active duty in the Navy, reported to his corpsman a foreign body sensation and tearing of his right eye. The symptoms had begun several weeks earlier, but had gotten worse over the preceding 3 days. The corpsman referred him to the Optometry Department at the Naval Medical Clinic in Long Beach, California for evaluation.

One month before the optometric evaluation the patient had been playing with his roommate's pet tarantula. While holding the spider at arm's length, he blew a puff of air at the tarantula. He noticed rapid movement of the spider's hind legs, and this immediately resulted in excruciating pain and lacrimation in the patient's right eye. Feeling something had gotten into his eye, but not knowing what, he went to a local hospital emergency room and the eye was flushed out. No slit-lamp evaluation was performed during the emergency room visit. Also, no definitive diagnosis was made to account for the ocular pain. The patient stated the pain became tolerable after 3 to 4 days, but the eye remained red and irritated. He was then assumed by the hospital staff physician to have a viral conjunctivitis and treated with a combination vasoconstrictor-antihistamine.

On arrival at the Optometry Department, correctable distance visual acuity was found to be 20/15 in each eye. Slit-lamp biomicroscopy revealed

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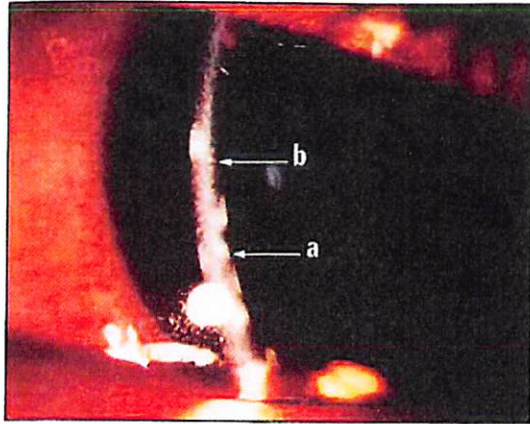


Figure 1 Clinical presentation of infiltrates (a) and tarantula barbs (b) in the patient's right eye.

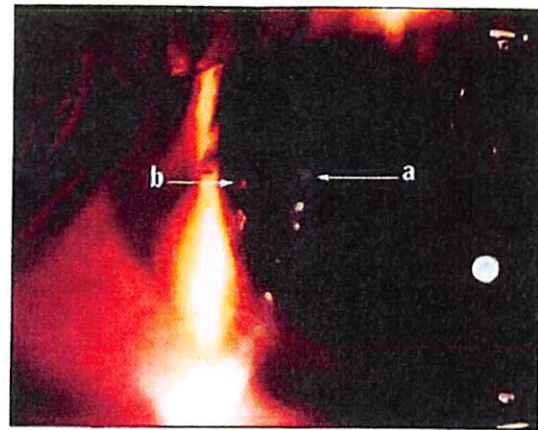


Figure 2 Infiltrates (a) and granulomas (b) of the patient's right eye.

slight chemosis of the superior and inferior lids of the right eye. The right temporal conjunctiva had 2+ diffuse injection. Concentrated about the temporal region of the cornea off the visual axis were 30 to 40 ocular foreign bodies that looked like clear, acrylic rods. The multiple ocular foreign bodies were identified as barbed hairs from a tarantula. The barbed hairs were penetrating all the layers of the cornea, with one hair in the lacrimal lake, others embedded in the epithelium, several migrating through the stroma, and a few protruding into the anterior chamber. There were keratic precipitates and trace cells in the anterior chamber. Epithelial infiltrates and endothelial granulomas were surrounding several of the barbs that had penetrated the cornea. The anterior segment of the left eye appeared normal. The dilated fundus examination and intraocular pressures of both eyes were also unremarkable.

Topical corticosteroid treatment was instituted. Recognizing that the inflammation may persist as a result of the presence of embedded hairs, a mild topical corticosteroid was used to reduce the risk of ocular complications. The patient was initially treated with Blephamide (sodium sulfacetamide-prednisolone acetate 0.2%) four times a day. In the following weeks, the anterior chamber remained clear, while symptoms and injection decreased, but the corneal barbs were still present. He was then switched to a regimen of topical ocular FML (fluormethalone alcohol 0.1%) twice daily. On subsequent visits the patient reported intermittent pain, but the barbs had begun to be absorbed and were slowly disappearing. Over a 3-month period, the corticosteroid was gradually decreased and discontinued. This lengthy duration occurred as a result of rebound inflammation from earlier attempts to decrease the medication regimen. At 6 months, there

were still a few barbs, infiltrates, and granulomas present (see Fig. 1), but the condition appeared stable and the patient was asymptomatic. He is currently being seen every 3 months. Given time, the remaining few barbs are expected to disappear, leaving minimal residual corneal opacities, with unaided vision of 20/15. No further complications are anticipated.

Discussion

Skin irritation has been reported after handling tarantulas.^{3,4} This irritation occurs from the urticating hairs of the spider. Urticating hairs are found in the *Theraphosidae* subfamilies *Ischnocolinae*, *Grammostolinae*, *Theraphosinae*, and *Avicularinae*. The hairs are located on the dorsal surface of the abdomen, at a density of approximately 10,000/mm², and are attached to the abdomen by a characteristic smooth stalk, 0.10 mm long.¹ Since these hairs are small and fine in appearance, they may be mistakenly identified as glass, fiberglass, or other fibrous material.⁵ The type of barbed hairs vary from what was seen in the reported case to large sturdy type hairs, depending on the species of tarantula.³ The tarantula responsible for the injury in this case report was thought to be from Chile, in South America.

Tarantulas are not the only species with urticating hairs. Certain caterpillars also have them.⁶ For example, the urticating hairs of the *Puss Caterpillar*, *Lagoa Crispata*, not only cause mechanical irritation, but are also poisonous.⁶

In this presentation, granulomas were observed in the cornea resulting from the barbs (see Fig. 2). Various stages of reaction, from acute inflammatory cell

infiltration to mature granulomas, have been documented.² The granulomatous reaction represents an immune response to a foreign antigen. Granulomas have been noted in similar cases in the conjunctiva, uvea, cornea, sclera, and retina.²

Treatment with topical steroids appears to be successful.^{7,8} In the case reported, the use of topical ocular fluoromethalone alcohol resulted in improvement of patient symptoms and reduction of inflammation. Other reports indicate the use of subtenon injection of corticosteroids may be the most effective management—especially in cases of deeper penetration and inflammation.⁵ One report observed complete absorption of the barbed hairs by 10 months.⁶ To prevent chronic keratoconjunctivitis, and because of the possibility of intraocular migration, superficial hairs in the lids, conjunctiva, and cornea should be removed without delay. Since this patient responded well to corticosteroid therapy, and surgical removal would have required extreme dissection of the cornea and sclera, mechanical removal was not used. The hairs were microscopic in size and had already deeply penetrated the ocular tissue.

Summary

Ocular injury by the urticating barbed hairs of tarantulas is a rare occurrence, but unsuspecting patients, ignorant of the potential danger, are the most likely to be injured. Patients who own or come in contact with this unusual type of pet should be informed of the risk.

In cases of suspected injury, because the offending barbed hairs are difficult to detect, a careful slit-lamp examination and thorough case are essential to making the correct diagnosis.

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Footnotes

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