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Case Report / Приказ случаја

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Keratouveitis Caused by Handling of a Tarantula

Keratouveitis uzrokovan kontaktom sa tarantulom

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SUMMARY

Introduction The aim of this paper was to present a case of keratouveitis caused by casual handling of a tarantula. Tarantulas, including the Grammostola rosea (Chilean Rose) have barbed irritant or urticating hairs which may be shed during casual handling and in contact with eye migrate to different parts of the eye and cause inflammatory response known as Ophthalmia nodosa.

Case Outline A 15 year-old boy with sudden onset of a sore, red left eye which he noticed after handling his tarantula pet. Slit lamp examination of the left eye revealed ciliary injection and multiple hairs in all corneal layers. Topical antibiotic and corticosteroid treatment was commenced and there was initial improvement in his clinical status. Three weeks after the initial presentation he developed uveitis and mild macular oedema in his left eye and the best corrected visual acuity in the left eye was reduced. Only local corticosteroid treatment was continued and there was improvement in both, the best corrected visual acuity and clinical status of the left eye, while the corneal hairs had not migrated and were still present in all corneal layers despite of long–term tapering regimen of topical steroid therapy.

Conclusion Handling of these increasingly popular exotic pets requires special precaution measures.

Keywords: keratouveitis; tarantula spider, urticating hairs, Ophthalmia nodosa

SAŽETAK

Uvod Cilj ovog rada bio je prikazati slučaj keratouveitisa uzrokovanog kontaktom s paukom tarantulom, vrste Grammostola rosea (Chilean Rose). Tarantule mogu otpustiti dlačice koje unete u oko specifičnim mehanizmom mogu prodreti u sve slojeve rožnjače, čak i dublje u oko. Reakcija oka na ovakve dlačice naziva se Ophthalmia nodosa.

Prikaz bolesnika 15-godišnjak se javio sa crvenilom levog oka jedan dan nakon što je u ruci držao svog kućnog ljubimca, pauka tarantulu. Prvi pregled otkrio je keratitis s brojnim dlačicama tarantule u svim slojevima rožnjače uz jak podražaj bulbarne spojnice. Nakon uvođenja lokalne antibiotske, a kasnije i kortikosteroidne terapije došlo je do kratkotrajnog poboljšanja da bi nakon tri nedelje nastupilo pogoršanje s padom vidne oštrine, uveitisom i blažim makularnim edemom. Nakon što smo uveli lokalnu kortikosteroidnu terapiju, došlo je do poboljšanja, ali su i dalje perzistirale dlačice koje se nisu povukle ni nakon dužeg korištenja preporučene terapije.

Zaključak Rukovanje s tarantulama kao sve češćim egzotičnim kućnim ljubimcima zahteva posebne mere opreza.

Ključne reči: tarantula, keratouveitis, penetrirajuće dlačice; nodozna oftalmija

INTRODUCTION

Ophthalmia nodosa is ocular response to vegetation or animal urticating hairs [1-3] and was first described in 1904 as nodular response in the palpebral and bulbar conjunctiva. Urticating hairs that can cause this condition are divided into four groups depending on the mechanism they use to penetrate into tissues and pattern of their barbs. Tarantula hairs are a type 3 and are approximately 0,1-0,3 mm long, they have sharp-pointed head and numerous barbs. They travel like arrows and can penetrate deeply into skin or eye [1,4] causing multiple foci of inflammation in all layers of the eye. There are reported cases of keratoconjunctivitis [4], uveitis [4], skin urticaria [5], chronic keratitis [6], chorioretinitis [7] and even complications like secondary glaucoma [7] or cataract [7].

The aim of this paper was to present a case of keratouveitis caused by casual handling of a tarantula.

CASE REPORT

A 15-year old boy presented to our department with sudden onset of a sore, red left eye which he noticed one day after handling his *Grammostola rosea* tarantula pet. Patient also had rash of the

arm which was in contact with spider. Anamnestically we found out that he was healthy, didn't take any medications and had no allergies. Initially his best corrected visual acuity tested on Snellen chart was 1.0 on both eyes. Slit lamp examination of the right eye was normal while the left eye examination revealed ciliary injection and multiple hairs in all corneal layers with associated opacities (Figure 1). Fundus examination was normal in both eyes. Topical antibiotic and corticosteroid treatment was commenced and there was initial improvement in his clinical status (Figure 2). The infectologist was consulted and oral Azythromicine had been introduced (500 mg once daily) for three days. The laboratory tests performed (complete blood count and differential, ESR, C-reactive protein, urinanalysis, hepatic enzymes) were normal. Conjunctival swabs were negative for Chlamydia, bacteria and eosinophiles.

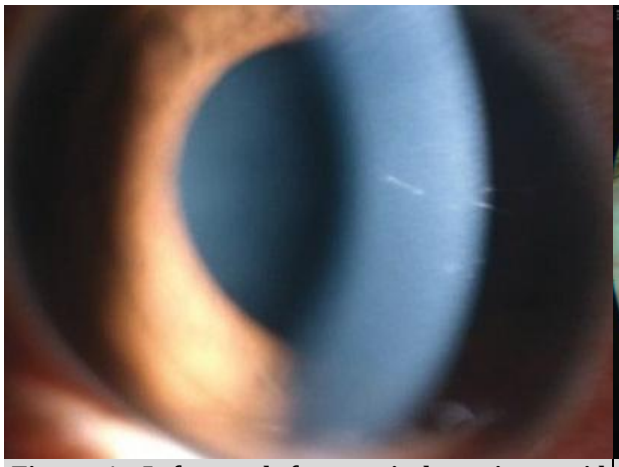

Figure 1. Left eye before topical corticosteroid therapy- tarantula hairs in all corneal layers and conjunctival injection.

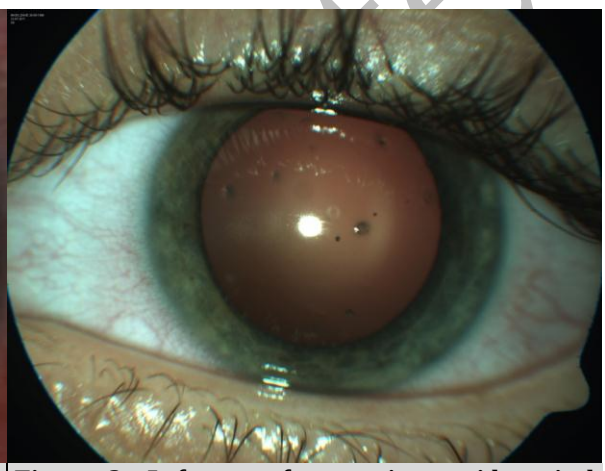

Figure 2. Left eye after corticosteroid topical therapy – corneal opacities.

After consulting of the recent medical data we found that tarantulas, including the Chilean Rose (*Grammostola rosea*) have barbed irritant or urticating hairs which may be shed during casual handling and in contact with eye migrate to different parts of the eye and cause inflammatory response known as *Ophthalmia nodosa.* Three weeks after the initial presentation there was a reduction in the best corrected visual acuity in the left eye from 1.0 to 0.75 tested on Snellen chart. Slit lamp examination of the left eye revealed strong mixed ciliary injection, even more tarantula hairs in all corneal layers, inflammatory cells in the anterior chamber and anterior uveitis. The fundus examination of the left eye revealed mild macular oedema without signs of vitritis (Figure 3) and optical coherence

Figure 3. Control fundus of the left eye shows pigment layer defect without macular oedema.

tomogram of the macula showed cystic subfoveolar lesion (Figure 4. a-c). Tomogram of the right eye was normal (Figure 5. a-b).

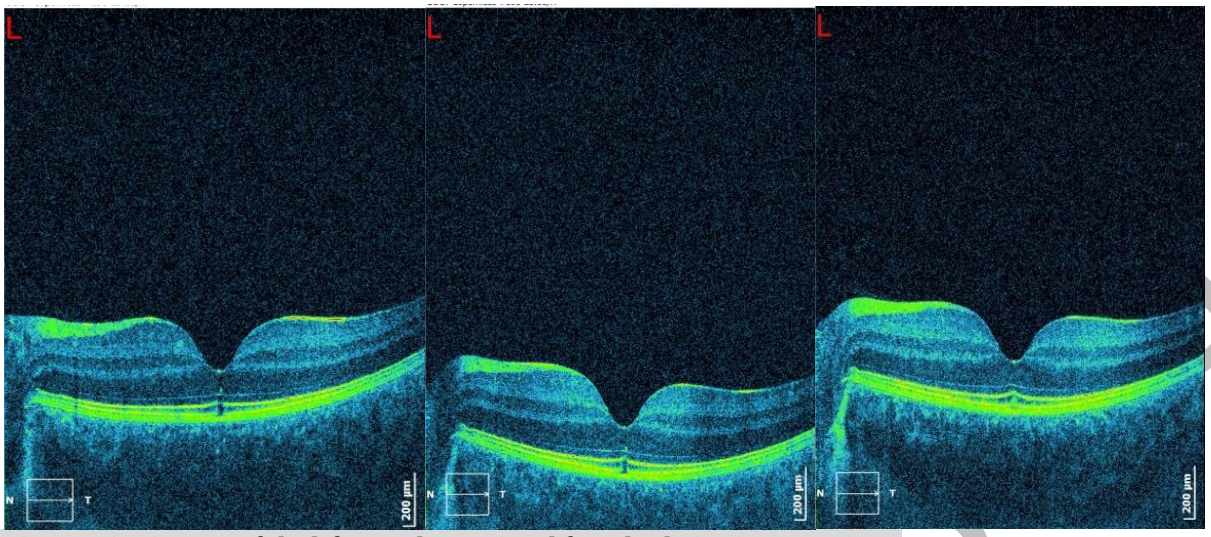

Figure 4 (a–c). OCT of the left macula- cystic subfoveolar lesion in regression 4.a – 1st month; 4.b – after two months; 4.c – after 5 months.

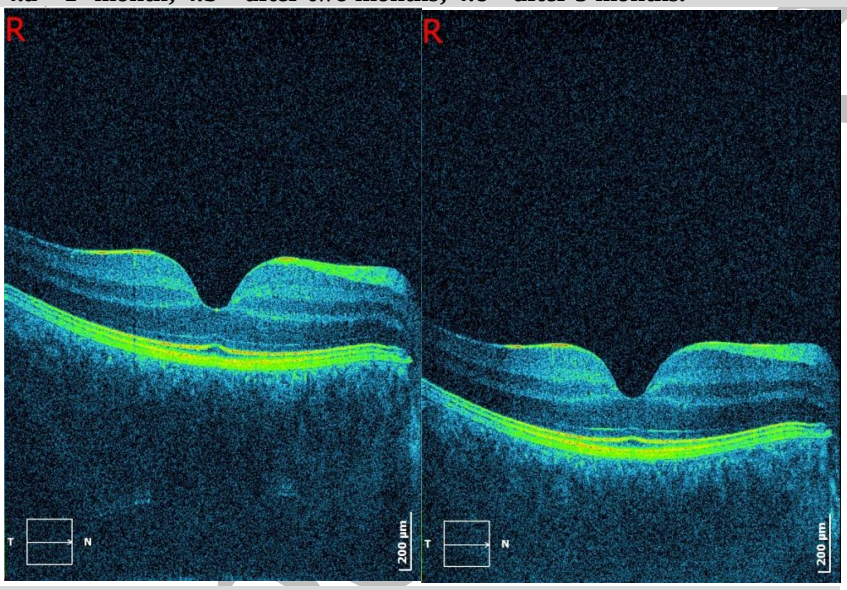

Figure 5 (a–b). Optical coherence tomograms of the right eye-normal. 5.a – 1st month; 5.b – after 5 months.

Only local corticosteroid treatment was continued and there was improvement in both, the best corrected visual acuity and clinical status of the left eye. During two months follow-up period both eyes were white and quiet . The patient was on a long–term tapering regimen of topical steroids for three months, the corneal hairs with opacities had not migrated and were still present in all corneal layers but were less numerous. Fundus examination and optical coherence tomogram of the left eye were normal.

DISCUSSION

Tarantulas are large spiders covered in numerous hairs that are usually found in tropical and subtropical areas, they belong to the *Theraphosidae* family [8]. They are increasingly popular as pets

because they are easily available, slow moving, interesting to watch, have a long life and tolerate certain amount of handling with people. All sorts of tarantulas are venomous and *Grammostola rosea (Chilean Rose)* is the least venomous and is therefore most popular. Their defend mechanism, if they feel threatened, relies on painfull bites and shower of urticating hairs they release of the dorsum of their abdomen. These hairs are located at a density of approximately 10000/mm2 and in case of danger they start to vibrate and that causes a shower of hairs towards the source of danger [8]. In contact with ocular tissue they might penetrate the cornea or sclera and involve even the posterior segment of the eye [1,4,7] .

There are reported different eye cases caused by handling a tarantula- from conjunctivitis and keratitis [9,10] that responded well to topical corticosteroid treatment to complicated panuveitis with complications like secondary glaucoma and cataract [4,7,11] that asked for sistem corticosteroid therapy or surgical treatment [12]. In case they penetrated all the way to posterior segment of the eye, these urticating hairs caused multiple foci of inflammation [7,12,13] . Similar cases were reported as a reaction to urticating caterpillar hairs, that are also type 3 of urticating hairs. These cases comprehended wide range of diagnoses from keratitis [14], uveitis [15] to endoftalmitis [16]. Eye reaction to vegetation or animal urticating hairs is known as *Ophthalmia nodosa* [1-3].

Treatment of these conditions included removal of superficial hairs and topical or even sistem corticosteroid therapy. Antibiotic therapy didn't give any results. Because of that fact, we assume that reason of this condition is hipersensitivity reaction to urticating tarantula hairs rather than infective element. Rare reported cases had to be treated surgically [7,12].

Inflammatory reaction of different eye parts, especially cornea, may persist for a long period of time with uncertain course and permanent sequel in terms of visual function. Therefore the owners of such pets should be aware of the importance of precaution measures and proper handling of these spiders. Also the public should be better advised over the potential risks with these exotic pets.

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