Bilateral Multifocal Choroiditis With Serous Retinal Detachment in a Patient With Brucella Infection: Case Report and Review of the Literature

Brucellosis is a zoonotic disease caused by the gram-negative bacteria *Brucella melitensis* or *Brucella abortus.* It is transmitted from animals to man through the ingestion of unpasteurized milk, milk products, or uncooked meat. The diagnosis of systemic brucellosis is clinically suggested in patients with fever, arthralgia, myalgias, anorexia, sweating, headache, and malaise. The onset can be acute or insidious, generally beginning within 2 to 4 weeks after inoculation. A variety of ocular complications have been reported in patients with brucellosis. Ocular inflammations are generally a late manifestation consisting variably of dacryoadenitis, episcleritis, chronic iridocyclitis, nummular keratitis, multifocal choroiditis, exudative retinal detachment, and optic neuritis. Rare cases of endogenous endophthalmitis have been reported in which *Brucella* species have been isolated from vitreous humor.

The purpose of this case report is to describe a case of multifocal choroiditis associated with serous retinal detachment in both eyes, without any other general symptoms, as the initial sign of brucellosis. Fluorescein and indocyanine green (ICG) angiographies of this disease are, to our knowledge, described for the first time.

**Report of a Case.** The patient was a 39-year-old man of Arab-Bedouin origin with a severe reduction of vision in the right eye. He had had “dust” in his left eye for 1 week and in the right eye for 4 days before admission. There were no other symptoms, known diseases, or known allergies. The patient admitted intake of raw unpasteurized goat’s milk in the past.

On examination, visual acuity was 6/240 OD and 20/20 OS. Results of slitlamp examination of the anterior chamber and vitreous of both eyes were normal. Results of ophthalmoscopic examination of the right eye showed hyperemic optic disc with serous retinal detachment of the posterior pole that included the macula, associated with multiple, deep creamy whitish yellow choroidal lesions (Figure 1A). Similar lesions sparing the macula were seen in the left eye (Figure 1B).

Fluorescein angiography demonstrated multiple hyperfluorescent lesions in the middle phase and late leakage of the lesions. Minimal staining of both optic nerves was seen, with no significant leakage (Figure 2). Results of ICG angiography were notable for multiple hyperfluorescent and hypofluorescent spots in the early and intermediate phases. The late phase showed multiple hot spots with large areas of hypofluorescence (Figure 3). The A and B scan ultrasonography showed shallow peripapillary retinal detachments without choroidal thickness.

Results of the physical examination were entirely normal. Results of the systemic workup, including serologic testing for syphilis, tuberculosis, and antinuclear antibody, were normal. *Brucella* infection was also considered because of the history of intake of raw unpasteurized goat’s milk. Results of serologic testing for *Brucella* species using the agglutination method were positive at a titer of 1:160. *Brucella* blood cultures were negative.

The patient started therapy consisting of streptomycin sulfate, 1 g/d in an intramuscular injection for 2 weeks, and doxycycline hyclate, 100 mg orally twice daily for 6 weeks. After 1 week of treatment, mild anterior uveitis, expressed as fine keratic precipitates with 1+ flare and 1+ cells, developed in both eyes. Serous detachment of the fovea-de-
veloped in the left eye, with a drop in visual acuity to 6/120 OS. He started therapy consisting of dexamethasone phosphate drops 4 times a day in both eyes and oral prednisone at a dose of 1 mg/kg.

One month after the patient’s initial symptoms, visual acuity had improved to 20/30 OU and choroidal lesions had disappeared. Fluorescein angiography demonstrated multiple peripapillary window defects without late leakage. The prednisone dose was tapered and stopped during a 2-month period. Three months after presentation, visual acuity remains 20/30 OU.

Comment. Brucellosis uveitis generally develops after the acute phase and is considered a noninfectious immune response or a form of septic choroiditis with low-virulence live organisms in the choroid. Choroiditis due to brucellosis is usually multifocal and nodular or geographic. Nodular choroiditis with adjacent retinal edema and hemorrhage is said to be characteristic of brucellosis. Tabbara and Al-Kassimi described geographic choroiditis in 3 of 5 patients. All of the patients responded to systemic antibiotic therapy and experienced complete recovery from the uveitis.

The initial clinical findings in our patient consisted of bilateral multifocal geographic choroiditis with serous retinal detachments and papillary congestion. After 1 week of systemic antibiotic therapy, choroiditis in the left eye expanded to the fovea with a corresponding severe drop in visual acuity (6/120 from 20/20). After systemic corticosteroid therapy was begun, visual acuity returned to 20/30 OU, with improvement of the choroiditis. This result supports the concept that the ocular manifestations of brucellosis have an immune component.

The diagnosis of ocular brucellosis may pose some problems because findings may mimic other causes of infectious and noninfectious uveitis. Therefore, it is important to obtain a detailed history that includes occupation, exposure to animals, travel to enzootic areas, and ingestion of high-risk foods (eg, unpasteurized dairy products).

It is difficult to isolate the organism in the chronic stages of the disease. In the absence of an isolate of the infecting organism from blood or tissues, a serologic investigation is of paramount importance to the diagnosis and management.
In the case reported herein, early anti-Brucella therapy and treatment with corticosteroids resulted in complete recovery and return of visual acuity.

Ronen Rabinowitz, MD
Marina Schneck, MD
Jaime Levy, MD
Tova Lifshitz, MD

Financial Disclosure: None.

Correspondence: Dr Rabinowitz, Tabenkin 25 St, Beer-Sheva, Israel 84750 (ronenrab@netvision.net.il).


Midbrain-Thalamic Ocular Neuromyotonia

Ocular neuromyotonia is characterized by paroxysms of tonic contraction of 1 or more of the extraocular muscles, usually consequent to radiation.1,2 We describe a unique example of ocular neuromyotonia from nonirradiated, stroke-related intramedullary lesions of the midbrain and thalamus.

Report of a Case. A healthy 41-year-old man lapsed into a coma after developing sudden dizziness, sweating, and diplopia. Magnetic resonance imaging (Figure) showed high signal intensity in both eyes, T2-weighted images at the left mesodiencephalic junction involving the left red nucleus and third nerve extending superiorly to the left centromedian thalamus, a punctate focus of susceptibility at the right exit zone of the left third nerve and a small area of abnormal signal at the right mesodiencephalic junction. The lesions were consistent with hemorrhage and infarction. The patient was presumed to have suffered a stroke. He improved but had residual diplopia, a “clumsy” right arm, and gait ataxia.

Three months after the onset, there was bilateral lid retraction, slow elevation and depression of both eyes, and limited elevation and depression of the left eye. His pupils were unremarkable. Two days later, the patient reported that he had developed about 30 episodes daily of vertical diplopia, each heralded by transient right periorbital tingling. His right eye would deviate down and in for up to 3 minutes. Tingling would recur, and the eye would return to a normal position. There was no oscillopsia. Observation of several episodes during re-examination confirmed his description. Carbamazepine abolished the episodes. Three months later, he had full ductions, but elevation and depression of both eyes were slow. On all refixations, both eyes would make a slow, conjugate, small-amplitude clockwise...