The Vogt — Koyanagi — Harada Syndrome in Children.

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Uveitis is uncommon in childhood; patients under 16 years of age represent only five percent of the cases reported by Davis,1 Kimura,2 and Perkins.3 The Vogt — Koyanagi — Harada syndrome (V-K-H), or uveoencephalitis, is a rare type of uveitis that occurs chiefly in adults aged 20 to 50 years; only a few isolated cases in children have been reported.4,5,6 We have recently seen two cases at The Hospital for Sick Children.

CASE REPORTS

Patient No. 1

A nine-year-old boy, born in India, was first seen in our Eye Clinic in March 1976, for evaluation of unilateral cataract of two years’ duration (Fig. 1). In 1974, the parents noted a leukocoria on the left, and ophthalmologic examination elsewhere revealed a dense cataract with posterior synechiae, probable cyclitic membrane, and faulty light perception. The right eye was reported to be normal.

The patient denied any ocular symptoms before 1974 and thought there had been no change in the past two years. The parents believed that both eyes had always been normal. There was no history of neonatal problems, trauma, ocular injection, photophobia or squint, or of familial cataract. The child’s medical history was negative except for the extraction of carious teeth in India, and vitiligo of the right side of the face which had appeared at about the time the leukocoria was first noticed. Dermatologic diagnosis at that time was vitiligo secondary to herpes zoster.

Ocular examination revealed 20/20 vision OD with a −0.25 sphere and faulty light projection OS. The left cornea showed faint opacification at 3 and 9 o’clock, suggesting early band keratopathy. No cells or flare were seen, but posterior synechiae and a dense, partially calcific cataract were present. There was no red reflex. The anterior segment of the right eye was normal. The disc was normal and the retina was attached. There was patchy sheathing in the midperiphery involving arterioles and venules (Fig. 2). The periphery of the fundus showed diffuse irregular pigmentation, suggesting old chorioretinitis.

No poliosis was apparent. When asked about poliosis, the patient stated that a white patch of hair had developed on the right side of his head at about the time the vitiligo appeared and that his mother kept this area dyed black. Examination revealed an area of vitiligo and hairs which were white at the base. The patient specifically denied ever having a hearing deficit, tinnitus, or headache associated with a stiff neck.

Fig. 1. Patient 1. Vitiligo of the right side of the face and left leukocoria suggest the possibility of Vogt — Koyanagi — Harada syndrome.

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Medical examination revealed no abnormalities in other systems. Lumbar puncture was not performed. An electroencephalogram (EEG) showed diffuse dysrhythmia, and the findings on ultrasonography were compatible with a cyclic membrane OS. All other investigations, including audiogram, and skull and chest radiographs, gave normal results, and the VDRL was negative. As the uveitis was considered minimally active, treatment was withheld.

Patient No. 2

A 12-year-old black girl complained of bilateral eye pain in February 1975; headache, fever and blurred vision followed. We first saw her two weeks after the onset of symptoms, when vision was 20/200 OD and hand movements OS; photophobia, epiphora, conjunctival injection, moderate cells and flare, disk edema, and bilateral nonrhegmatogenous retinal detachments were present. The child had a low-grade fever and complained of pain on neck flexion, but there was no nuchal rigidity.

Examination revealed no other abnormalities. Lumbar puncture was not done; other investigations, including skull and sinus radiographs and a hemogram, gave normal results. Treatment was started with prednisone; this was discontinued after two months, by which time the retinas were flat. Bilateral mutton-fat keratic precipitates (KP) were noted in August 1975.

In February 1976, she complained of pain in the right eye. Vision was 20/40 OD and 20/30 OS; extensive mutton-fat KP were present, greater on the right (Fig. 3). The retinas were attached, but the fundus showed extensive pigmentary abnormalities and many small, yellow subretinal lesions were seen (Fig. 4). Vitiligo and polyosisis were absent and other systems appeared normal. The total leukocyte count was 4800/cmm, with a lymphocytosis at 63 percent. The erythrocyte sedimentation rate was 70 mm/1 hr. A chest radiograph was normal, and tuberculin skin test was negative. Urinalysis was normal, and the following investigations gave negative results: fluorescent treponemal antibody, Sabin — Feldman, latex fixation, and preparations for lupus erythematosus cells and antinuclear factor. The anterior uveitis responded well to topical steroids, which were discontinued after a few weeks. Over the next six months, the iridocyclitis remained mildly active, requiring intermittent treatment with cyclopleionate HC1 (Cyclogyl drops: Alcon Laboratories, Toronto); vision remained 20/30 in both eyes.

DISCUSSION

The ocular features of V-K-H syndrome include eye pain, sudden loss of vision,

Fig. 2. Patient 1. Right eye: Sheathing of arterioles and venules in the midperiphery, evidencing old, healed vasculitis.

Fig. 3. Patient 2. Right eye: Silt-lamp photography of mutton-fat keratic precipitates.

Fig. 4. Patient 2. Left eye: Diffuse patchy proliferation of retinal pigmentation.
exudative posterior uveitis with retinal detachment, diffuse granulomatous uveitis, papillitis, spontaneous reattachment of the retina, and diffuse pigmenory disturbance of the fundus. Levy et al.10 added two more signs — decreased pupillary response to light, and sensitivity to 2.5 percent methacholine. Neurologic features are malaise, headache, meningeal symptoms, increased cerebrospinal fluid pressure, lymphocytosis, and abnormality of the EEG. The cutaneous manifestations are vitiligo, poliosis, and alopecia. Decreased hearing and tinnitus indicate otic involvement.

Not all cases demonstrate all of these abnormalities. There are two main clinical patterns, the Vogt—Koyanagi type and the Harada type. The former is characterized by a predominant diffuse granulomatous uveitis with synechiae, cataract, and cyclitic membrane as the major complications; vitiligo and poliosis are common. The Harada type is characterized by sudden loss of vision, due to exudative retinal detachments (which resolve spontaneously), shortly after the onset of eye pain, headache, and meningeal symptoms.

Our first case closely resembles the Vogt—Koyanagi type. Although the patient was symptom-free, the appearance of vitiligo and poliosis at about the time the leukocoria was noticed suggests that the uveitis had been active for some time in that eye; further, the EEG was abnormal. The second patient represents the Harada type, with sudden loss of vision, exudative retinal detachment, eye pain, and systemic symptoms; the detachments have resolved, but the anterior uveitis is still active. Although comparison of the manifestations of disease in these two patients reveals few similarities, the uveitis in both is best classified as the V-K-H syndrome.

The theories relating to the etiology of this syndrome are as protean as its manifestations; they include viral infection, pigment sensitivity, and sympathetic ophthalmia. Takahashi11 produced uveitis in rabbits by injecting them with vitreous or cerebrospinal fluid from a patient with Harada's disease, and Morris and Schlægel12 cited seven more authors who had produced uveitis similarly in various species. Morris and Schlægel also described an additional case; their patient, a 25-year-old black woman, had virus-like particles in the subretinal fluid. Bruno and McPherson13 saw four cases of the syndrome in one year; all of the patients lived in one city which supports the concept of an infective etiology; but, viral cultures done in three cases were negative. These authors also proposed a relationship between sympathetic ophthalmia and the V-K-H syndrome,4 citing the infrequent but well-documented occurrence of vitiligo of the eyelids after sympathetic ophthalmia, and development of the syndrome after cataract surgery.14 The histopathology in the two conditions is similar, differentiation usually lying in the degree of inflammation, which tends to be more diffuse in the sympathetic ophthalmia that occurs after trauma. It has also been postulated that allergy to pigment is the underlying mechanism of both conditions; however, although antibodies to pigment have been reported, skin tests for pigment sensitivity have been negative.8,13

An interesting observation is the response to repeated injection of bacillus Calmette Guerin (BCG) in two patients with nonocular metastatic melanoma: their tumors regressed but anterior uveitis and vitiligo developed.15 Thus, it is possible that all three factors — altered immunity, pigment, and the tubercle bacillus — are involved in this syndrome.

SUMMARY

Two cases of the Vogt—Koyanagi—Harada syndrome in children, a very rare disorder in this age group, are reported; one patient had the chronic diffuse type, and the other had neurologic symptoms and exudative retinal detachments. Various theories of causation of the syndrome have been proposed, including viral infection, sympathetic ophthalmia, and altered immunologic status, but the etiology remains obscure.

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REFERENCES


