Ocular Vicarious Menstruation

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ABSTRACT
Vicarious menstruation represents cyclical bleeding in extragenital organs during a normal menstrual cycle. We present an unusual case of ocular vicarious menstruation (bloody tears) in a 17-year-old girl. The indications and treatment of this rare disorder are discussed.

INTRODUCTION
Vicarious menstruation is a rare condition manifested by cyclical bleeding in extragenital organs during menstruation. The bleeding may precede or coincide with normal menstruation, or it may occur cyclically in amenorrheic women. Although the nasal mucosa is the most common site of extragenital bleeding, other sites such as the lung, stomach, intestine, kidney, lips, skull, skin, and eyes have been reported as well. Two forms of vicarious menstruation have been described: supplementary, in which bleeding occurs regularly in the absence of menstruation, and substitutive, in which extraterine bleeding is concomitant with the menstrual cycle. The latter form represents 30% of all cases of vicarious menstruation. We present an unusual case of ocular vicarious menstruation in a 17-year-old girl.

CASE REPORT
A 17-year-old girl presented with intermittent bleeding from the right eye during her menstrual cycle for the first time in March 1984. Up to that time her menstrual cycles, which started at the age of 13, were uneventful. The eye bleeding episodes lasted for two to three minutes, increased in frequency up to ten episodes per day, and were preceded by retro-orbital pain and pressure in the right eye. These symptoms were entirely relieved once the bleeding started. She denied diplopia, decrease in vision, photophobia, loss of smell, numbness of her cheeks, sinus pain, temporomandibular joint pain, epistaxis, or bleeding disorders. She complained of intermittent right sided headaches that were controlled with Tylenol with codeine. There was no history of bleeding disorder in the family. Ophthalmologic examination revealed a flow of blood from the fornix, medial canthal region, and lacrimal gland area. Her vision was 20/20 OS and 20/100 OD. Pupils were round and reactive to light. There was small left exotropia, normal intracocular pressure, normal discs and maculae, normal slit lamp examination of the anterior segment of the eyes, and no evidence of tumor or abnormal tissue in the conjunctiva or lacrimal gland. Complete gynecologic, neurologic, otolaryngologic, and psychiatric examinations were normal.

Laboratory tests, which included a CBC, SMA-20, ESR, PT, PTT, cortisol level, urinalysis, ANA titer, anti-RNT, immune-electrophoresis, Raji cell levels, skull and facial bone x-rays, were all normal. To clarify the nature of the headaches and to rule out infraorbital, intracranial and intraocular vascular lesions, a CT scan with contrast of the head and neck, bilateral carotid angiograms, EEG, and spinal tap were performed. All these tests were normal as well. A lacrystogram with panto-paque and air contrast,
as well as examination of the conjunctiva and cul-de-sac with cobalt blue light after IV fluorescein injection, failed to show any capillary abnormality or evidence of mass in the lacrimal apparatus. Cytologic examination of the discharge of the right eye for endometrial cells during an active bleeding episode was not performed.

The patient was treated with Enovid 5 mg given orally, daily. After several days the bleeding subsided. Since March of 1984, this patient has twice been admitted to another hospital with bleeding from the right eye. After repeated evaluations failed to reveal any new findings, the patient revealed that she had stopped taking the Enovid pills. She was restarted on Enovid with complete resolution of her bleeding.

DISCUSSION

Ocular vicarious menstruation is an uncommon phenomenon. It was first reported by Dodonaeus in 1581, with only sporadic cases reported in the literature since then.\(^4\) Roth reported in 1920 one of the largest series of vicarious menstruation.\(^5\) He found 167 cases of supplementary type and 58 cases of the substitutive type. Only 1% of those had ocular symptoms. Sikorski et al reported two patients with vitreous body hemorrhage bilaterally occurring at the time of menstruation without evidence of abnormal ovarian hormonal activities.\(^6\) Estrogen treatment led to the control of the hemorrhages and improvement of visual acuity.

While the cause of this type of bleeding is obscure, it has been related to vascular changes that occur in response to hormonal stimuli. Both estrogen and progesterone have the capability to increase the capillary permeability of extra-gential tissues, resulting in congestion, hyperemia, and secondary bleeding at those sites.\(^2\) Bleeding in an extra-gential organ during menstruation may also be secondary to the presence of endometrial tissue in that organ. It is well known that this type of tissue has the capability to metastasize to both adjacent and distant organs by lymphatic and hematogeneous spread in up to 10% of cases of endometriosis.\(^2,\(^3\)\)

Vicarious menstruation is more common between the third and fourth decades of life, when pelvic endometriosis is most frequently diagnosed. The characteristics of vicarious menstruation include bleeding from the affected organ in a close temporal relationship to the onset of menstrual flow—usually within 48 hours—a recurrent nature of these episodes, and absence of symptoms during ovulation suppression by drugs or pregnancy.

Prior to establishing the diagnosis of vicarious menstruation, local lesions, anomalies, or tumors of the lacrimal apparatus, metastatic endometriosis, conjunctivitis, vascular tumors, trauma, occult AV malformations, collagen vascular disorders producing vasculitis of the peripheral vessels, or regurgitation of blood during epistaxis through the nasal lacrimal duct, must be ruled out. The most effective treatment of vicarious menstruation is ovulatory suppression, providing that there are no contraindications to this type of treatment. Suppression of endometrial tissue has also been reported with Danazol, which inhibits the release of follicle-stimulating hormones (FSH) and luteinizing hormones (LH).\(^7\) Vicarious menstruation secondary to endometriosis can be treated successfully by resection of the endometrial containing tissue, whenever feasible.\(^7\) In the absence of endometrial tissue elsewhere, the only successful treatment for this condition is hormonal therapy.

REFERENCES