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Isolated Cortical Blindness in Pregnancy

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ISOLATED CORTICAL BLINDNESS due to preeclampsia or eclampsia is unusual. Recently we saw two patients with this syndrome. Reports of their cases

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and a brief discussion of localization of the problem in the occipital cortex are presented.

Reports of Cases

CASE 1. The patient, a 16-year-old girl who was 36 weeks pregnant, had an abruptly occurring visual loss. At 35 weeks of pregnancy, she was noted to have peripheral edema and proteinuria (a trace), but a blood pressure in the normal range. Two days before her admission, moderate headaches developed and she had visual blurring, nausea and vomiting. Her vision deteriorated so that she could distinguish only light and dark. Her blood pressure was 140/90 mm of mercury. There was mild pedal edema. A neurologic examination showed her neck to be supple. A mental status examination found no abnormalities. Pupils were round and briskly reactive to light. A fundoscopic examination showed sharp discs with venous pulsations. There was no optokinetic nystagmus. Visual acuity was reduced to light appreciation only and wandering eye movements were noted. On the remainder of the neurologic examination, including sensory examination, no abnormalities were noted.

Laboratory tests gave normal results on a complete blood count and serum chemistry determinations. Findings on a lumbar puncture, a computerized tomography brain scan and skull x-ray studies were normal. Analysis of urine showed a reaction for protein of 2+.

The patient initially received magnesium sulfate and hydralazine hydrochloride given intravenously to control hypertension. After an induced delivery, the patient's vision gradually improved and within three days her visual acuity was 20/20 with mildly abnormal color plate perception. An electroencephalogram done at this time showed prominent polymorphic 4 to 7 Hz activity in the occipital regions. A week after the delivery, the patient's vision and blood pressure were normal.

CASE 2. The patient, 35 years old and 37 weeks pregnant, was admitted to hospital following a grand mal seizure. She received routine prenatal care and had done well until 72 hours before admission when a moderate generalized headache developed and she was noted to be moderately hypertensive. Examination at the time of admission showed her blood pressure to be 160/110 mm of mercury. Findings on general examination were normal and she had no peripheral edema. Neurologic examination showed her to be confused, disoriented and unable to see. Pupils were 3 mm, equal and briskly reactive to light. There was no optokinetic nystagmus. Visual acuity was reduced to light perception only. Muscle stretch reflexes were brisk and symmetric and the rest of the examination showed no abnormalities. On ophthalmologic consultation the fundoscopic examination gave normal findings. Laboratory studies gave normal values for serum chemistries and normal complete blood count, platelet count, fibrinogen and coagulation. Proteinuria was noted (a trace). Findings on a computerized tomographic scan were normal. An electroencephalogram showed slowing of the dominant frequency with diffuse polymorphic theta activity.

The patient initially received magnesium sulfate and hydralazine (given intravenously) to control hypertension. Following a cesarean section her condition rapidly improved and within three days findings on neurologic and ophthalmologic examinations were normal.

Discussion

About 30 percent to 50 percent of eclamptic women have visual symptoms, often associated with retinal arteriolar spasm, hemorrhages and exudates.[1,2] Neither of our patients had retinal abnormalities to explain their visual loss. Blindness associated with normal fundi and pupillary function suggests retrogeniculate visual dysfunction. Blindness caused by a prechiasmal lesion either in the retina or optic nerve would be expected to disturb pupillary function. A chiasmal lesion of the optic pathways is associated with bitemporal visual field abnormalities and when caused by pituitary adenomas during pregnancy may resolve completely after delivery.[3,4] An insult to the optic radiations or primary visual cortex would be expected to spare pupillary reaction to light because fibers controlling this have left the primary optic pathways in the midbrain. Lesions of the optic radiations or tract spare optokinetic nystagmus, a cortical function. In lesions affecting the primary visual cortex the optokinetic nystagmus response is absent. We believe that our patients had cortical blindness, a diagnosis supported by electroencephalography in case 1 that showed theta activity in the occipital region and in case 2 generalized slowing.

It is tempting to postulate that vasospasm of the posterior cerebral arteries or their distal branches leads to relative ischemia and was re-

sponsible for the loss of vision. Vasospasm is also associated with migraine, though it is less likely as a cause because both patients' visual loss resolved coincidentally with delivery and neither had a history of vascular headaches. Thrombosis or emboli in the distribution of the posterior cerebral arteries are unlikely without permanent deficits.

Other cases of cerebral blindness have been reported to occur during pregnancy and are described in eclampsia,[1] hypertensive encephalopathy[5] and postpartum sinus thrombosis.[6,7] Data derived from pathology studies suggest that microinfarctions and hemorrhages are the basis of these disease states.

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Medical Practice Questions

EDITOR'S NOTE: *From time to time medical practice questions from organizations with a legitimate interest in the information are referred to the Scientific Board by the Quality Care Review Commission of the California Medical Association. The opinions offered are based on training, experience and literature reviewed by specialists. These opinions are, however, informational only and should not be interpreted as directives, instructions or policy statements.*

Photon Absorptionmetric Procedure

QUESTION:

Is the photon absorptionmetric procedure, using the Norland-Cameron Bone Mineral Analyzer, an acceptable diagnostic test for osteodystrophy, osteomalacia, osteopenia, senile osteoporosis, Paget's disease? If acceptable, what is the frequency with which this test should be performed?

OPINION:

It is the opinion of the Advisory Panels on Nuclear Medicine, Radiology, Orthopedics, Internal Medicine and Pathology that the photon absorptionmetric procedure, using the Norland-Cameron Bone Mineral Analyzer, is an acceptable test for diagnosing and following therapy of patients with osteodystrophy, osteomalacia, osteopenia, senile osteoporosis and Paget's disease. The frequency of the procedure is generally in the range of three to nine months, depending upon the clinical problem being addressed. In postmenopausal women, the frequency is generally once every one to two years.