

ARTERIOVENOUS MALFORMATIONS

VEIN OF GALEN AVM AND VISUAL LOSS

Visual loss as a presenting symptom of an arteriovenous malformation (AVM) of the vein of Galen is reported in a 5-year-old girl from the Royal Liverpool Children's Hospital, Alder Hey, Liverpool, UK. Her vision had been deteriorating for 6 months. On examination, she had no light perception in the left eye, 6/60 acuity in the right eye, and a left hemianopia. Funduscopic exam revealed left optic atrophy and dilated vessels on the right disc. Her left cheek was enlarged with prominent veins. MRI showed a large, deep-seated central AVM involving the vein of Galen. Ultrasound studies showed reversal of flow in the right superior ophthalmic vein and minimal left ophthalmic artery flow. A mild degree of hydrocephalus developed and required shunting after 2 years. (Kaye LC, Kaye SB, Lagnado R et al. Cerebral arteriovenous malformation presenting as visual deterioration in a child. Dev Med Child Neurol Oct 2000;42:704-706). (Respond: Stephen B Kaye MD FRCOphth, Department of Ophthalmology, Royal Liverpool Children's Hospital, Eaton Road, Alder Hey, Liverpool L12 2AP, UK).

COMMENT. Aneurysm of the vein of Galen (great cerebral vein) is formed by a direct connection between the posterior cerebral artery and the internal cerebral vein that drains into the great cerebral vein. The usual clinical effects of a vein of Galen malformation or ectasia include a high output cardiac failure in the neonatal period, hydrocephalus caused by compression of the cerebral aqueduct, intracranial hemorrhage, and ischemia secondary to a vascular steal phenomenon. Secondary signs include distension of scalp veins and intracranial bruit. The local effects may include visual field defects, proptosis, nystagmus, optic atrophy, papilledema, and retinopathy. The authors' review of the literature found no case of visual loss in a child with vein of Galen AVM and only one adult case presenting with visual symptoms.

Treatment of AVM and vein of Galen ectasia is reviewed in Progress in Pediatric Neurology III (PNB Publ, 1997;p454). Transarterial embolization of feeding arteries using bucrylate is recommended in the absence of complications (Swanstrom S et al. 1994). A free interval between birth and development of cardiac failure is a favorable sign. The use of contrast material for CT is considered inadvisable. In one case report, treatment by embolization with helical stainless steel coils inserted along the straight sinus was successful (McCord FB et al, 1987; reviewed in Progress in Pediatric Neurology I, 1991;p386).

HEADACHE DISORDERS

SUMATRIPTAN NASAL SPRAY FOR ACUTE MIGRAINE

A multicenter, randomized, double-blind, placebo-controlled trial of sumatriptan nasal spray (5 mg, 10 mg, and 20 mg) was conducted in 653 adolescents presenting with acute migraine at the Palm Beach Headache Center, Florida; Cleveland Clinic, OH; Michigan Headache Institute, Ann Arbor; and San Antonio Center, TX. All 3 dosages studied were effective in providing headache relief within 1 or 2 hours postdose. Younger patients 12-14 years of age reported higher efficacy rates at lower doses, while older patients 15-17 years of age obtained the greatest benefit at the 20 mg dose of sumatriptan NS. Photophobia and phonophobia were significantly reduced within 2 hours of treatment with the 20 mg dose, and headache recurrence was reduced in frequency or delayed for

>8 hours. Taste disturbance was the most common adverse event, reported in up to 30% of patients. (Winner P, Rothner AD, Saper J et al. A randomized, double-blind, placebo-controlled study of sumatriptan nasal spray in the treatment of acute migraine in adolescents. Pediatrics November 2000;106:989-997). (Respond: Paul Winner DO, 5205 Greenwood Avenue, Suite 200, West Palm Beach, FL 33407).

COMMENT. Sumatriptan nasal spray may be an effective and well-tolerated treatment of acute migraine in adolescents. In this large multicenter study, the 20 mg dose was most effective, especially in older patients.

Cognitive functioning during a migraine attack. A significant loss of cognitive efficiency was demonstrated in 10 adult migraineurs during a migraine attack, in a study at the Headache Care Center, Springfield, MO. (Farmer K et al. A pilot study to measure cognitive efficiency during migraine. Headache Sept 2000;40:657-661). Recovery of cognitive function followed within 15 minutes of sumatriptan injection (6 mg) and continued to improve at 45 minutes. The adverse impact of cognitive effects of migraine on work and study efficiency is an important consideration in a decision to treat aggressively and prophylactically.

DIVALPROEX SODIUM FOR PREVENTION OF MIGRAINE

The use of divalproex sodium (DVS) as a prophylactic treatment for migraine was studied in 42 patients, 7 to 16 years of age (mean age, 11.3 years) seen between July 1996 and December 1998 at St Jude Children's Research Hospital, Memphis, TN; and Hasbro Children's Hospital/Rhode Island Hospital, Divalproex Brown University, Providence, RI. After 4 months treatment with DVS in doses ranging from 15 to 45 mg/kg.day, 10% became headache-free, 14% had a 75% reduction, 78% a 50% reduction in headaches, and 80% were able to discontinue medicines used to abort attacks. Adverse effects included gastrointestinal upset, weight gain, somnolence, dizziness, and tremor. None had hepatotoxicity. (Caruso JM, Brown WD, Exil G, Gascon GG. The efficacy of divalproex sodium in the prophylactic treatment of children with migraine. Headache Sept 2000;40:672-676). (Respond: Dr Generoso G Gascon, Pediatric Neurology, Hasbro Children's Hospital/Rhode Island Hospital, 110 Lockwood Street, Suite 342, Providence, RI).

COMMENT. In this uncontrolled trial, divalproex sodium was effective as a prophylactic therapy for childhood migraine.

NEUROIMAGING IN EVALUATION OF MIGRAINE HEADACHE

The utility of neuroimaging in the evaluation of children with migraine and chronic daily headache, with normal neurologic examination, was determined by a retrospective review of 302 patients, aged between 6 and 18 years, seen in the Pediatric Neurology Clinic, Children's Hospital, Eastern Virginia Medical School, Norfolk, 1997-1999. Other types of headache among the patients reviewed included: migrainelike symptoms (10%), chronic daily headache and abnormal neurologic examination (2%), secondary headache (17%), complicated migraine (7%), posttraumatic headache (7%), seizure-related headache (4%), brain tumors (3.6%), tension-type headache (3%), and pseudotumor cerebri (1.3%).

Of 107 (35% of total) with *uncomplicated migraine*, 42 (39%) received CT scans, and 2 (5%) were abnormal (arachnoid cyst in 1 and dilated Virchow-Robin space in 1). Of 12 (11%) who received an MRI, 2 (17%) were abnormal, both having a Chiari type 1 malformation. Of 30 patients with *chronic daily headache*,