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VASCULAR DISORDERS

SPINAL CORD INFARCTION IN CHILDREN

Two cases of ischemic spinal cord infarction (SCI) in children are reported and the literature reviewed by researchers at Indiana University School of Medicine, Indianapolis. Case 1, a 14-year-old female complained of a burning sensation in her neck and back followed by difficulty in breathing while at school. In the nurse's office, she vomited and rapidly developed quadriplegia. In the ED, she lost her gag reflex and ability to vocalize, and she was intubated. Neurologic exam revealed weakness of facial muscles, flaccidity and areflexia. Sensation to light touch was spared. MRI on admission was normal; at 48 hours it showed T2 hyperintensity in the lower medulla and anterior cord from C1 to C7 and at T3. CSF was normal, and she was treated for a presumptive diagnosis of transverse myelitis without response. Her clinical course and MRI at 6 months were consistent with spinal cord infarction in the anterior spinal artery territory. The cause was not determined. At 18 months follow-up, she could turn her head and had regained speech; she had minimal movement of her right hand, and decreased pinprick sensation in the C3 dermatome and below. She was still incontinent, confined to a wheelchair, and was dependent on a ventilator.

Case 2, a 17-year-old male football player presented with back pain and palpitations treated with beta-blockers. He became dizzy, fell down stairs, and was quadriplegic. He complained of neck pain, numbness of his right face, left arm, and both legs. In the ER, he regained movement of the upper extremities and proximal lower extremities within hours. Voluntary movement of toes and feet was absent. Sensation of all modalities was absent in the feet and shins. Bowel and bladder function returned, and numbness of face and arms resolved in a few days. MRI was normal on the first day, and showed vague T2 hyperintensity in the thoracic region at 1 month. At 3 months follow-up, MRI showed multiple Schmorl's nodes in the thoracic spine and T2 hyperintensity from T5 to T9 and at

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C2. Thrombotic workup revealed mutations of the methylenetetrahydrofolate reductase gene (MTHFR). Treatment with aspirin and folic acid and rehabilitation were followed by improvement in ambulation, but no resolution of decreased proprioception and vibration sense in toes and knees.

Risk factors for SCI without vertebral fracture in pediatric cases reviewed in the literature (Ovid MEDLINE search) include, in decreasing order of frequency, minor trauma (18 cases), bacterial meningitis (15), fibrocartilaginous embolism (10), umbilical artery catheters (8), cardiac arrest with hypotension (6), lumbar puncture with cardiac arrest (6), arteriovenous malformation (6), thrombotic disorders (4), with a total of 108 cases. (Nance JR, Golomb MR. Ischemic spinal cord infarction in children without vertebral fracture. **Pediatr Neurol** April 2007;36:209-216). (Respond: Dr Golomb, Indiana University School of Medicine, Building XE 040, 575 West Dr, Indianapolis, IN 46202).

COMMENT. Spinal cord infarction (SCI) is rare both in children and adults. In adults, the most common etiologies are aortic aneurysm repair, traumatic aortic rupture, arteriovenous malformation, transient ischemic attack, and cardiac arrest. In a recent report of SCI in an adult, multiple etiologic factors were involved, including diabetes mellitus, hypertension, episodic hypotension, and degenerative disease of the spine (Millichap JJ et al. **J Gen Intern Med** 2007;22:151-154). These authors provide an anatomical classification of spinal vascular syndromes. When applied to the above pediatric patients, case 1 had an anterior spinal artery syndrome, and case 2 had involvement of both anterior and posterior spinal artery territories. The respiratory distress experienced by patient 1 was localized to C3-C5 segments and diaphragmatic paralysis. Homocysteinuria and thromboembolism are reported with MTHFR mutations, accounting for one additional case of SCI in an adolescent while weight-lifting. Other unusual presentations of SCI include congenital cervical spinal atrophy with arthrogryposis multiplex, and symmetrical severe muscle weakness and wasting confined to the upper extremities. (Kaiboriboon K, Hayat GR. **Neuropediatrics** 2001;32:330-334; Ebinger F et al. **Neuropediatrics** 2003;34:45-51).

IDIOPATHIC INTRACRANIAL HYPERTENSION

Sex distribution and frequency of obesity in children with idiopathic intracranial hypertension were evaluated at Meyer Children Hospital, Rappaport School of Medicine, Haifa, and other centers in Israel. Meta-analysis was conducted in 244 patients reported since 1997; 132 (54%) were younger than 11 years of age and 112 were age 12-17 years. Females were 44% in the younger group and 70% in the older group. Obesity was present in 26% of younger and in 64% of older patients. Differences in age at presentation, sex, and obesity were statistically significant ($P < 0.01$). Sex and obesity were independent variables. (Genizi J, Lahat E, Zelnik N et al. Childhood-onset idiopathic intracranial hypertension: relation of sex and obesity. **Pediatr Neurol** April 2007;36:247-249). (Respond: Eli Shahar MD, Child Neurology Unit & Epilepsy Service, Meyer Children Hospital, Rambam Medical Center, Haifa 31096, Israel).

COMMENT. These results in a large series of patients confirm previous findings of differences in age, sex, and obesity in children and adolescents with idiopathic intracranial hypertension. Older patients have higher rates of females affected and of obesity. Intracranial