

and attention. IQ remained the same, with verbal IQ of 98 and performance IQ of 105. (Laporte N, De Volder A, Bonnier C, Raftopoulos C, Sebire G. Language impairment associated with arachnoid cysts: Recovery after surgical treatment. **Pediatr Neurol** Jan 2012;46:44-47). (Respond: Dr Sebire, E-mail: [Guillaum.Sebire@USherbrooke.ca](mailto:Guillaum.Sebire@USherbrooke.ca)).

COMMENT. The authors consider the following as evidence of cause and effect between the surgery and cognitive improvement: 1) close temporal relationships; 2) PET increased metabolic activity in the affected temporal lobe after surgery; and 3) a correlation between the language impairment profiles and the location of the mass effect. A syndrome of temporal lobe arachnoid cyst and ADHD is further evidence supporting an association between these cysts and attention and behavioral disorders. Treatment is usually conservative, relying on medications, academic and behavioral modifications.

## TRAUMATIC BRAIN DISORDERS

### **CEREBRAL BLOOD FLOW ALTERATIONS WITH CONCUSSION**

Researchers at Cincinnati Children's Hospital Medical Center, OH evaluated 12 children, ages 11 to 15 years, following sports-related concussion (SRC), employing ImpACT neurocognitive testing, T1 and susceptibility weighted MRI, diffusion tensor imaging, proton MR spectroscopy, and phase contrast angiography at <72 hours, 14 days, and 30 days or greater. Findings were compared to an age and gender-matched control group. ImpACT confirmed significant differences between the SRC and control groups in initial total symptom score and reaction time. Total symptom score differences resolved by 14 days and reaction time by 30 days. MRI showed no structural injury. MR spectroscopy showed no decrease in neuronal metabolite N-acetyl aspartate or elevation of lactic acid. In contrast, reduction in cerebral blood flow (CBF) was documented in the SRC group (38 vs 48 ml/100 g/min, P=.027). Improvement in CBF toward control values occurred in only 27% of participants at 14 days and in 64% at >30 days after SRC. Pediatric SRC impairs CBF and produces a pathophysiologic process without causing structural or metabolic brain damage. Altered CBF may contribute to SRC-related symptoms and altered neurologic and neuropsychiatric function. A prescription of cognitive rest in patients with reduced CBF is thought to promote recovery from SRC by reducing cerebral metabolic demand. (Maugans TA, Farley C, Altaye M, Leach J, Cecil KM. **Pediatrics** January 2012;129:28-37). (Respond: Todd Maugans MD, Division of Pediatric Neurosurgery, Cincinnati Children's Hospital Medical Center, MLC 2016, 3333 Burnet Ave, Cincinnati, OH 45229. E-mail: [todd.maugans@cchmc.org](mailto:todd.maugans@cchmc.org)).

COMMENT. Sports-related concussion in children may cause a significant reduction in cerebral blood flow without measurable structural or metabolic neuronal injury. These findings differ from adults who demonstrate cerebral metabolic changes following sports-related head trauma. (Vagnozzi R et al. **Brain** 2010;133(11):3232-3242, cited by authors). In the February issue of **Pediatrics** (2012;129(2):e494-5), Levin HS commenting on two current studies (Crowe LM et al and Anderson V et al) finds in children with TBI there are limits to neuroplasticity of the young brain and a high risk of persisting deficits. Children with early TBI do not "grow into their deficit."