(Millichap JJ, Millichap JG. **J Infect Dis** 2004;189:564-565), influenza A virus is currently a common cause of FC in Japan and in other Asian countries but is less frequently associated in the US and Europe. In the first half of the 20th century, apart from roseola infantum, viral infections as a cause of FC were rarely reported, and influenza A infection with FC was not recorded in the literature. Currently, in the US, human herpesvirus (HHV)-6 is a more frequent cause of FC than is infection with influenza A virus (Hall CB et al. **N Engl J Med** 1994;331:432-438). During the 2003 outbreak of influenza A in Houston, Texas, children admitted to hospital with neurologic complications had seizures that were classified as encephalopathic, and none was typical of a FC (Maricich SM et al. **Pediatrics** 2004;114:e626-e633; **Ped Neur Briefs** Nov 2004;18:83). The distinction between seizures with encephalopathy and complex febrile seizures is often difficult. The threshold to FC is determined by the height of the fever, but other factors involved in susceptibility to FC include genetics, an increased cytokine and systemic immune response to infection and, especially with complex FC, a possible unrecognized viral encephalitis or toxic encephalopathy.

Circadian and seasonal variation of first febrile seizures has been studied at the University of Ferrara, Italy (Manfredini R et al. **J Pediatr** Dec 2004;145:838-839). The frequency of FC increased significantly in the evening hours, with a peak between 5 and 8 pm, the time of an expected circadian increase in body temperature. The peak seasonal incidence was in January and winter months, the time of greatest frequency of viral infections and respiratory illnesses responsible for fever. Parental alertness to the risks of FC recurrence and the need for prophylactic therapy should be heightened at these times.

BRAIN TUMORS

POSTERIOR FOSSA TUMORS AND INTELLECTUAL IMPAIRMENT

The effect of cerebellar damage on intellectual function in 76 children treated surgically for malignant posterior fossa tumor was investigated at the Gustave Roussy Institute, Villejuif, and the Department of Pediatric Neurosurgery, Necker Hospital, Paris, France. Inclusion criteria included a tumor treated initially with surgery followed by irradiation and/or chemotherapy, age older than 4 years at time of psychological evaluation, and evaluation at >1 year after diagnosis and >6 months after treatment. Mean age at diagnosis was 5.7 +/- 3.8 years. Shunt surgery was performed in 31 children, 12 preoperatively, 17 postoperatively, and 2 at time of tumor resection. The vermis was split in 61.5% of medulloblastoma cases and in 29.4% of ependymoma resections (p=0.03). Postoperative complications occurred in 47% of children whose hydrocephalus was treated prior to tumor resection and in 67% treated later (p=0.07).

Postoperative cerebellar syndrome (transient short-term cognitive deficits) was higher in patients with preoperative hydrocephalus than in those without (58% and 33%, respectively; p=0.03). Cerebellar mutism occurred in 9 patients (12%), and incision of the vermis (in 7) was more frequent than in patients without this complication. Risk factors for persistent cerebellar syndrome were preoperative hydrocephalus, cardiovascular instability, and postoperative complications. At time of testing, 13 children (17%) had special education needs and one child was not attending school. On Wechsler Scales of IQ, the mean verbal

intelligence quotient (VIQ) was 87 +/- 19 SD) and the mean performance quotient (PIQ) was 76 +/- 17.5. The Purdue Pegboard test results measuring hand skills correlated with IQ scores. A low VIQ was associated with impaired hand skills ($p<0.0001$) and preoperative hydrocephalus ($p=0.02$), whereas a low PIQ was associated with impaired hand skills ($p<0.0001$) and incision of the vermis ($p=0.02$). Impaired hand skills were associated with postoperative cerebellar mutism, oculomotor deficits, cerebellar syndrome, and the need for rehabilitation therapy. (Grill J, Viguier D, Kieffer V et al. Critical risk factors for intellectual impairment in children with posterior fossa tumors: the role of cerebellar damage. **J Neurosurg (Pediatrics 2)** Nov 2004;101:152-158). (Reprints: Jacques Grill MD PhD, Department de Cancerologie de l'Enfant et de l'Adolescent, Institut Gustave Roussy, 39-rue Camille Desmoulins, 94805 Villejuif, France).

COMMENT. In this study involving multifaceted therapies for malignant posterior fossa tumors, IQ scores were correlated with preoperative hydrocephalus, incision of the vermis, and degree of postoperative cerebellar damage. A recent study in the Netherlands involving 23 children treated surgically for cerebellar astrocytoma and without additional radio- and chemotherapy, also revealed long-term neurologic, psychological, and behavioral sequelae, a high percentage requiring special education. (Aarsen MA et al. **Neurology** 2004;62:1311-1316; **Ped Neur Briefs** May 2004;18:39-40). In children following cerebellar tumor resection, with or without radio- or chemotherapy, a cerebellar cognitive affective syndrome with persistent deficits is a significant complication.

VENOUS THROMBOSIS IN CHILDREN WITH BRAIN TUMORS

The incidence and significance of central venous access device (CVAD) dysfunction and symptomatic thrombosis were determined by retrospective review of 253 consecutive children diagnosed and treated for brain tumors at St Jude Children's Research Hospital, Memphis, TN, and Cleveland Clinic, OH. Symptoms of venous thromboses were pain and swelling of an extremity, chest pain, acute dyspnea, and CVAD dysfunction with need to instill a fibrinolytic agent to restore patency. Chemotherapy was used in 75% of patients and radiation in 66%. CVAD dysfunction was reported in 54 of 190 (28%) patients with central lines, and thrombotic occlusion was confirmed in 17. Major venous thromboembolic events (VTE) occurred in 6 patients with an episode rate of 2.8%. Major thrombosis was more likely with CVAD dysfunction than without, and CVAD dysfunction was associated with reduced survival rate. (Deitcher SR, Gajjar A, Kun L, Heideman RL. Clinically evident venous thromboembolic events in children with brain tumors. **J Pediatr** Dec 2004;145:848-850). (Reprints: Steven R Deitcher MD, 675 Almanor Ave, Sunnyvale, CA94085).

COMMENT. CVAD dysfunction and thrombotic occlusion are common complications of brain tumors in children and are risk factors for major VTE involving the upper extremities and superior vena cava. CVAD dysfunction is associated with a poor prognosis, and VTE prevention is recommended in high-risk patients.