of Louisville School of Medicine, Louisville, Ky.

**References**

1. Judd LL, Akiskal HS, Schletter PJ, et al: A prospective investigation ofthe natural history of the long-term weekly symptomatic status of bipolar II disorder. Arch Gen Psychiatry 2003; 60:261–269
2. El-Mallakh RS, Karippot A: Use of antidepressants to treat depression in bipolar disorder. Psychiatr Serv 2002; 53:580–584
3. Menkes DL, Bodnar P, Ballesteros RA, et al: Right frontal lobe slow frequency repetitive transcranial magnetic stimulation (SF r-TMS) is an effective treatment for depression: a case-control pilot study of safety and efficacy. J Neurol Neurosurg Psychiatry 1999; 67:113–115

## Hereditary Hemorrhagic Telangiectasia and Psychopathology

*SIR:* Hereditary hemorrhagic telangiectasia (HHT) is an autosomal dominant vascular dysplasia that affects 1 in 5,000 to 8,000. Its clinical picture comprises nosebleeds, gastrointestinal hemorrhage, mucocutaneous telangiectasia, pulmonary and cerebral arteriovenous malformations, as well as hepatic involvement due to abnormal vascular structures. The clinical significance of this disorder has increased since asymptomatic screening programs have shown a much higher frequency of arteriovenous malformations than was initially suspected.[1] HHT can be the result of mutations in genes on at least two chromosomes. The first is in the gene encoding endoglin (chromosome 9q34; *ENG, HHT1*). The second is in the gene encoding activin A receptor type-like kinase 1 (chromosome *12q13; ALK-1, HHT2*).[2]

There is a paucity in published clinical reports of neuropsychiatric complications despite the frequent cerebral involvement. We describe two patients who were primarily referred for neuropsychiatric evaluation without a suspected association with HHT.

**Case Report**

A 21-year-old man was referred because of behavioral problems. At the age of 14 he underwent an embolization for a pulmonary arteriovenous malformation. Magnetic resonance imaging (MRI) and angiography of the brain as well as an echography of the liver were normal. The patient and his mother were both suffering from HHT. Genetic analysis demonstrated a mutation in the ENG gene (*HHT1*).

The patient's early development was characterized by abnormal language development and disinhibited behavior. At the age of 14, he was institutionalized because of behavioral disturbances and learning difficulties. Psychological examination (SON-R) showed a total IQ of 74. He showed repetitive and stereotyped behaviors, a qualitative impairment in communication and social interaction, and episodic impulsivity with temper tantrums. In addition, paranoid ideation and hallucinatory experiences were observed. Two years later he developed bizarre behavior and intermittent psychotic symptoms. In subsequent years, his behavior became more disinhibited and aggressive, and he was referred for a neuropsychiatric reevaluation. Somatic examination demonstrated telangiectases on the mucosa of the mouth and nose. Extensive laboratory tests did not show abnormalities except a slight elevation of the liver function tests.

A diagnosis of pervasive developmental disorder and borderline mental retardation was made. Before extensive somatic, neuroradiological, and neuropsychiatric examination could be completed, the patient died suddenly due to a massive pulmonary bleeding. An autopsy was not performed.

**Case Report**

A 58-year-old woman had been psychiatrically admitted for the first time at the age of 23, most probably because of a psychosis. At the age of 42 she was referred to the outpatient department because she felt overstrained and unable to cope with daily events. At that time, her mood was dysphoric and irritable, her thoughts were chaotic, and she spoke circumlocutorily. No formal psychiatric diagnosis was made. In the subsequent 16 years, no psychiatric intervention was necessary.

Recently, she was admitted because of a manic episode with prominent religious delusions, incoherence of speech, euphoric mood, disinhibited behavior, and poor social judgment. Somatic examination demonstrated multiple telangiectases in the nose and on the tongue and pinpoint telangiectases on the fingertips as well as temporary mild hematuria. Extensive laboratory tests did not show any abnormalities. Neuropsychological examination demonstrated a total IQ of 72 (WAIS-III) and slow mental processing.

MRI scanning of the brain revealed no signs of cerebral complications. A computed tomography (CT) scan of the lungs showed a small arteriovenous malformation with a diameter of 5 mm. Her somatic history mentioned recurrent epistaxis, uterus extirpation, venous varicosities and hypertension. No family history with psychiatric disorders was present. Based on the trials, epistaxis, telangiectasias, and positive family history, the diagnosis of HHT was established that was genetically confirmed as a mutation in the ALK-1 gene (HHT2).

**Comment**

Although HHT has a relatively high prevalence, it is remarkable that vir-

tually no psychiatric complications have been described. Psychiatric disorders in HHT may develop shortly after adolescence and present with schizophrenia-like symptoms with or without accompanying liver cirrhosis.[3] In addition, a paradoxical cerebral embolism may occur from silent pulmonary arteriovenous malformations, especially in cases with the *HHT1* type. Furthermore, transient ischemic attacks may occur regardless of the degree of respiratory symptoms. Finally, a disturbed angiogenesis with fragility of small vessels may be involved in brain dysfunction and neuropsychiatric symptomatology.[4]

Recently, it was suggested that the neurovascular manifestations show age-related penetrance with an increased prevalence of cerebral manifestions over the lifespan.[5]

Although a causal relationship between HHT and psychopathology cannot be demonstrated in the presented cases, it is worthwhile to consider brain manifestations of the disease, including neuropsychiatric complications, that manifest via different pathways. It is therefore highly remarkable that no neuropsychiatric complications of HHT are reported in the literature.

Harold J.H. Kuijpers, M.D.
F.M.M.A. van der Heijden, M.D., Ph.D.
S. Tuinier, M.D., Ph.D.
Vincent van Gogh Institute for Psychiatry, the Netherlands
W.M.A. Verhoeven, M.D., Ph.D.
Vincent van Gogh Institute for Psychiatry, and Erasmus University Medical Centre, Department of Psychiatry, Rotterdam, the Netherlands

**References**

1. Begbie ME, Wallace GMF, Shovlin CL: Hereditary haemorrhagic telangiectasia (Osler-Weber-Rendu syndrome): a view from the 21st century. Postgrad Med J 2003; 79:18–24
2. Letteboer TGW, Zewald RA, Kamping EJ, et al: Hereditary hemorrhagic telangiectasia: ENG and ALK-1 mutations in Dutch patients. Hum Genet 2005; 116:8–16
3. Watanabe A: Portal-systemic encephalopathy in non-cirrhotic patents: classification of clinical types, diagnosis and treatment. J Gastroenterol Hepatol 2000; 15:969–979
4. Fernandez LA, Sanz-Rodriguez F, Zarrabeitia R, et al: Blood outgrowth endothelial cells from hereditary haemorrhagic telangiectasia patients reveal abnormalities compatible with vascular lesions. Cardiovasc Res 2005; 68:235–248
5. Krings T, Ozanne A, Chng SM, et al: Neurovascular phenotypes in hereditary haemorrhagic telangiectasia patients according to age: review of 50 consecutive patients aged 1 day–60 years. Neuroradiology 2005; 47:711–720

## Posttraumatic Parieto-Occipital Epilepsy

*SIR:* The prevalence of epilepsy after traumatic brain injury (TBI) is about 4%,[1] parietal and occipital seizures being considered a rare outcome.[2,3] We report a case of a patient where posttraumatic parieto-occipital seizures were misidentified as psychiatric symptoms, and stress the importance of the neuropsychological evaluation in the diagnosis, especially when imaging and electrophysiological exams show no anomalies.

**Case Report**

A 39-year-old right-handed woman, with no psychiatric history, suffered a TBI after being hit by a car, presenting a Glasgow Coma Scale score of 15 upon hospital admission. The cranial computed tomography scan revealed epidural left temporobasal hematoma and sinking left zygomatic arch fracture. More than a year after TBI, she started complaining of tingling and numbness in the right leg and inability to move despite no loss of power in the limb. These episodes lasted 1 to 2 minutes without loss of consciousness, but she had to interrupt ongoing tasks. They were preceded by a sense of malaise and followed by fatigue and disorientation, and their frequency had increased to an episode every 2 weeks. She also complained of poor concentration, forgetfulness, sleep disturbances, headache, dizziness, anxiety and sadness, and being medicated with antidepressants, without response. Magnetic ressonance imaging (MRI) 2 years after the accident and the EEG revealed no anomalies. During the neuropsychological evaluation, when drawing a three-dimensional figure (cube), she complained of difficulty in the task, dizziness and tingling of the right leg, followed by involuntary rapid tremor-like movements on the same side for about a minute, with no loss of consciousness. On the same day the EEG revealed paroxysmal bilateral temporo-occipital activity with left accentuation and contra-lateral homonymous propagation. The suggestion test was negative. She was medicated with a regimen of sodium valproate, 1600 mg daily, and reevaluated after 6 months, but when drawing a three-dimensional figure she developed a seizure with the same characteristics.

**Comment**

Our patient presented few risk factors for late seizures,[4] the first seizure occurring more than a year after TBI, similar to the 20 months' mean time previously reported.[5] Parietal and occipital seizures are mainly characterized by the presenting auras, including somatosensory phenomena, although the clinical manifestations may spread beyond and overshadow the focal origin. The paresthesia may spread in a Jacksonian manner, with motor activity in the affected body mem-