Hypothalamic hamartomas (HH) are rare tumor-like heterotopic masses commonly found in the hypothalamus or tuber cinereum.¹ They typically present in childhood with gelastic seizures and precocious puberty. Occasionally the condition can be associated with intractable convulsive epilepsy and behavioral abnormalities.² The most effective treatment is surgical removal of the HH.³ The aim of this case report is to alert the physician to early diagnosis of the condition and to prevent suffering in a manageable disease.

**Case Report.** This case is a 30-year-old right-handed Qatari female patient. The epileptic symptoms started at the age of 3½ years. Her preceding childhood development was unremarkable. In school, her performance was poor and she discontinued school in the second year after admission because of the seizures and cognitive difficulties. The clinical symptoms started with bouts of involuntary and irresistible laughter and dropping to the floor (gelastic seizures). Later in adulthood she started to develop other seizures of different semiology. Those seizures typically started with a brief period of oro-facial automatism in the form of repeated smiling followed by loss of consciousness and generalized tonic clonic convulsions. The ictus duration was usually less than 10 minutes and recurred up to 4 times per month. She had sustained many body injuries related to the seizures. Infrequently, she had minor seizures limited to an episode of repeated smiling for a few seconds or a drop to the ground. The seizures were not controlled by antiepileptic drugs despite taking twice daily doses of levetiracetam 1000 mg, carbamazepine 400 mg, and primidone (Mysoline) 250 mg. Occasionally, she developed sudden outbursts of aggressive and agitated behavior independently of the other seizures. She expressed rage, violence, and paranoid ideations. She destroyed furniture and TV apparatus in different violence incidences. The psychotic outburst might persist for up to one hour. After the attack had settled, she had no recall of how she had acted during the event. In-between the attacks, she depicted a quiet
and a pleasant character. Erroneously she was thought to have a primary psychotic disorder and was treated by a psychiatrist for a long time, which had greatly delayed the right diagnosis. Psychotropic agents were ineffective in suppressing the aggressive psychotic symptoms. All other forms of seizures were refractory to drug treatment. Her neurological examination was unremarkable except for a moderate cognitive impairment. Video-EEG demonstrated non-localizing ictal pattern with maximum amplitude in bifrontal regions. The 3T-MRI demonstrated an oblong 1.2 x 2.5 mm, well demarcated soft tissue mass, iso-intense to the grey matter, in the region of the hypothalamus (Figure 1). The lesion was partly intrahypothalamic with an extension below the hypothalamus. No enhancement was seen on the post-gadolinium images. An incidental small left vestibular schwannoma was seen on the MRI (Figure 1). Based on the characteristic imaging features, lack of enhancement and typical location, the diagnosis of HH was considered. The tumor was surgically reached and resected by a transcallosal endoscopic approach via a left craniotomy (Figure 2). Histopathological examination of the surgical material confirmed that the mass was a hamartoma. She developed a transient diabetes insipidus as a complication of the surgery. Postoperatively, she was regularly seen at the outpatient epilepsy clinic for neurological assessment and treatment. By the time of writing this report, she was followed up for more than one year. The seizure frequency had regressed by more than 50% after surgery. The psychotic symptoms had completely subsided. She continued to take anticonvulsant drugs, and the dosages were adjusted as needed.

Discussion. Le Marquand and Russell were the first to describe HH in a child with precocious puberty. They are rare developmental heterotopic non-neoplastic tumor-like masses most commonly found in the region of the hypothalamus and the tuber cinereum. The HH are either intrahypothalamic (sessile), or parahypothalamic (pedunculated) attached to the hypothalamus. Morphologically, hamartomas are composed of glial cells and neurons that morphologically resemble the normal cells of the hypothalamus and tuber cinereum. The intrathalamic hamartoma usually presents with epilepsy, while the pedunculated variety presents with precocious puberty. The location of the tumor, iso- or slight hypointensity on T1-weighted images, hyperintensity on T2-weighted images, and lack of gadolinium enhancement are characteristic MR features that strongly support the diagnosis of HH. Our patient presented with gelastic seizures in her early childhood, which is the typical early clinical presentation of sessile HH. Later in the course of epilepsy, the gelastic component often becomes less prominent and other types of generalized or partial seizures may appear. The epileptic syndromes that may develop in adolescence or adulthood include generalized tonic clonic, secondary generalized tonic clonic, tonic, atonic, and complex partial seizures. The HH can lead to impairment of cognition, which may interfere with the learning process and schooling. Gelastic epilepsy in HH is known to be associated with ictal and interictal behavioral abnormalities mainly aggression, paranoid ideation, and major affective disorders. Ictal psychosis is usually episodic and associated with generalized seizures. Interictal psychosis is more chronic however; it has a benign course and better response to treatment. The seizures associated with HH are often described as catastrophic because of its refractoriness to treatment with anticonvulsants. However, the progressive epilepsy, behavioral, and cognitive deterioration can be ameliorated by surgical intervention. Several surgical procedures are used to reach the HH. The tumor was successfully removed in our patient by endoscopic
resection, resulting in a remarkable improvement in epileptic seizures and psychotic symptoms after several decades of suffering.

In conclusion, the HH is a rare tumor that has characteristic clinical features and can cause intractable epilepsy of multiple semilogies. Unfortunately the diagnosis of HH, a condition that can be ameliorated by surgical intervention, is often delayed particularly in developing countries. A protracted course of suffering can be avoided if the condition is considered in every case of gelastic seizures or precocious puberty.

References


ILLUSTRATIONS, FIGURES, PHOTOGRAPHS

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