Supra- and infratentorial multiple cavernous angiomas in an infant: report with MR evaluation of an unusual case

Abstract A rare case of multiple cavernous angiomas with repeated hemorrhages in a 9-month-old male infant is presented, together with sequential computed tomography (CT) and magnetic resonance (MR) images. The infant underwent hematoma evacuation for left cerebellar hemorrhage, and his postoperative course was uneventful. The multiple cavernous angiomas receded gradually without any treatment except the hematoma evacuation. Two years following presentation, he continues to do well. To the authors' knowledge, this is the first report of multiple cavernous angiomas with brain stem involvement in an infant.

Key words Cavernous angiomas - Infant - Management - MRI

Case report

A 9-month-old male infant presented at our clinic on October 20, 1992, because of sudden inactivity and right-sided motor weakness. His past medical history and family history were unremarkable. Neurologic examination revealed left facial palsy and right hemiparesis. He fed poorly, and his clinical course was complicated by aspiration pneumonia. Computed tomography (CT) showed a homogeneous, hyperdense mass lesion 3.0 cm in diameter in the upper pons (Fig. 1). Magnetic resonance (MR) imaging revealed four round homogeneous, hyperintense masses (the largest of which measured 3.0 cm in diameter) on T1-weighted images (T1WI). T2-weighted images (T2WI) of these masses showed mixed intensity with hemosiderin rims in the upper pons (Fig. 2). The infant was improving gradually and we decided not to attempt surgical therapy and instead, treated him conservatively. He was followed-up as an outpatient.

Fig. 1 Preoperative CT scans at first admission show homogeneously hyperdense masses in the brain stem and right temporal region

He was readmitted to our clinic in December, 1992, because of lethargy and repeated vomiting. At this time, a CT scan demonstrated a left cerebellar hemorrhage. The patient was drowsy and there was right-sided motor weakness and a left facial palsy. The anterior fontanel was not tense and funduscopic examination revealed no signs of papilledema. Laboratory examinations were unremarkable and plain skull radiographs showed no abnormal calcification. MR images using Gd-DTPA as contrast medium revealed enlarged mixed-intensity masses in the upper pons, with a severe mass effect (Fig. 3). We performed evacuation of the hematoma in the left cerebellar hemisphere by means of a midline suboccipital approach. Histologic examination of the specimen confirmed hemorrhage from cavernous angiomas. There were multiple dilated, thin-walled vascular channels of different sizes, with no intervening neural tissue (Fig. 4). Postoperatively the patient did well, with only slight right hemiparesis and slightly delayed development. Follow-up MR images were obtained 1 year (Fig. 5) and 17 months (Figs. 6, 7) after evacuation of the hematoma.
Fig. 2 Left: T1-weighted MR images at first admission show an isointensive mass in the brain stem and hyperintense masses in the left cerebellar hemisphere and right temporal and right parietal regions. Right: T2-weighted MR images at first admission show a mass of mixed intensity in the brain stem and homogeneous hyperintense masses with hemosiderin rim in the left cerebellar hemisphere and right temporal and right parietal regions.

Fig. 3 MR images with Gd-DTPA contrast at second admission. Top: Axial images show hyperintense masses in the brain stem (pons) and hyperintense masses in the left cerebellar hemisphere and right temporal and right parietal regions. Middle: Sagittal images show hyperintense masses in the brain stem, cerebellar hemisphere, and right parietal region just above the lateral ventricle. Bottom: Coronal images show hyperintense masses in the brain stem, left cerebellar hemisphere, and right parietal region just above the lateral ventricle.

Fig. 4 Photomicrograph of the specimen of the left cerebellar hemisphere lesion shows abnormal vessels with a single layer of endothelium and thrombus. No brain tissue intervened.