Midbrain hemorrhage

Midbrain hemorrhages often secondarily result from a superior extension of pontine hemorrhage or cerebellar hemorrhage or an inferior extension of thalamic hemorrhage or putaminal hemorrhage. [1] [2] [3].

Etiology

While the etiologies of nontraumatic primary midbrain hemorrhages are largely unidentified, the most frequent ones are vascular malformations and bleeding diathesis with hypertension occasionally [4]

Classification

Primary spontaneous mesencephalic hemorrhage.

Tectal mesencephalic hemorrhage.

Clinical Features

Because of the complex anatomy midbrain lesions, result in a broad spectrum of clinical signs and symptoms, including ataxia, vertigo, ocular motility disorders, parkinsonian signs, and hydrocephalus [5] [6] [7] [8] [9] [10] [11] [12].

Among all, eye movement disorders are the most prominent manifestation because the vertical gaze centers and two nuclei of the extraocular muscles are located in the midbrain [13] [14] [15] [16].

Neuroophthalmological involvement is prominent in most patients. Third nerve dysfunction, skew-deviation, gaze palsy (especially in the vertical axis), and pupillary irregularities are common.

Parinaud syndrome (superior gaze palsy, pupillary dysfunction, and tonic downward and medial deviation of the eyes) is seen with hemorrhages in close proximity to the posterior commissure.

Third nerve involvement may be unilateral or bilateral. With unilateral involvement, there may be partial or complete paralysis of function, and the affected lesion may involve the nucleus or the third nerve fascicle. With fascicular involvement, motor long tracts may be affected in the cerebral peduncle.

Isolated fourth nerve palsy may also be a rare manifestation.

Outcome

The prognosis is known to be generally favorable, as minute and benign cases have been increasingly recognized with the widespread use of imaging techniques [17].

Case reports

A 14-year-old boy with a long-standing history of frequent migraine headaches and attention deficit/hyperactivity disorder (ADHD). Neurologic examinations, noncontrast computed tomography (CT) scans, and magnetic resonance imaging (MRI) suggested that the lesion likely affected the dorsal part of the midbrain. The neurologic symptoms improved following endoscopic third ventriculostomy (ETV) with the placement of external ventricular drains (EVDs). In this report, anatomical correlations to the case are discussed and previous reports of midbrain hemorrhages are reviewed [18].

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