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July 1986 edition

Multiple Sclerosis: MRI and Clinical Correlation

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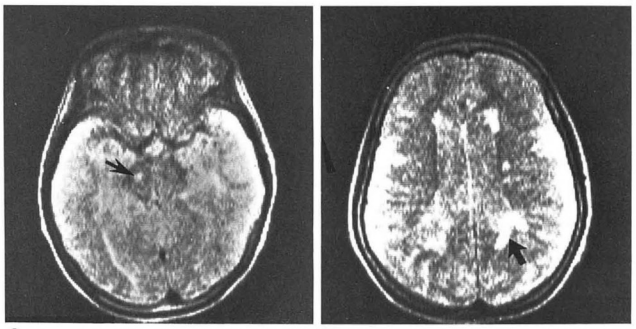
Fifty-three consecutive patients with suspected multiple sclerosis were studied to determine if the extent of disease apparent on MRI correlated with the clinical severity of the disease. MRI images were evaluated and compared with an assessment of the patient's disability using three neurologic rating scales. The severity of the disease seen on MRI showed a strong statistically significant correlation ($p = 0.0001$) with two of the three methods of clinical evaluation and a significant correlation ($p < 0.01$) with the third rating scale. The severity of disease shown on MRI correlated only weakly ($p = 0.05$) with the length of time the patients had been symptomatic. Normal controls did not show any abnormality characteristic of multiple sclerosis on MRI or on neurologic exam.

MRI has been recognized as a major advance in the diagnosis and evaluation of patients with multiple sclerosis (MS) [1–4]. Many more lesions are detected by MRI than by CT, and MRI has proved to be helpful in establishing the diagnosis of MS in cases where the clinical diagnosis is not definite [5–7]. Although MRI has made MS easier to diagnose at an early stage [7], the correlation between MRI results and the clinical course and disability has been questioned [8, 9].

Subjects and Methods

Fifty-three patients with suspected MS were evaluated in the Department of Neurology at Indiana University using three different clinical scales. The patients were evaluated according to the McAlpine criteria as having either possible, probable, or definite MS [10]. The McAlpine criteria were converted to a numerical scale ranging from 1 (possible) to 3 (definite). Patients who did not qualify as having MS according to the McAlpine criteria were excluded from the study. The patients were also graded using the expanded disability status scale proposed by Kurtzke [11], which grades the patient's disability from 0 (normal) to 10 (death due to MS) at one-half step intervals. The Kurtzke scale is designed to grade the patient's functional disability. Cerebellar dysfunction, cranial nerve deficits, and difficulty ambulating are among



CT and MR of Angiomatous Malformations of the Choroid Plexus in Patients with Sturge-Weber Disease

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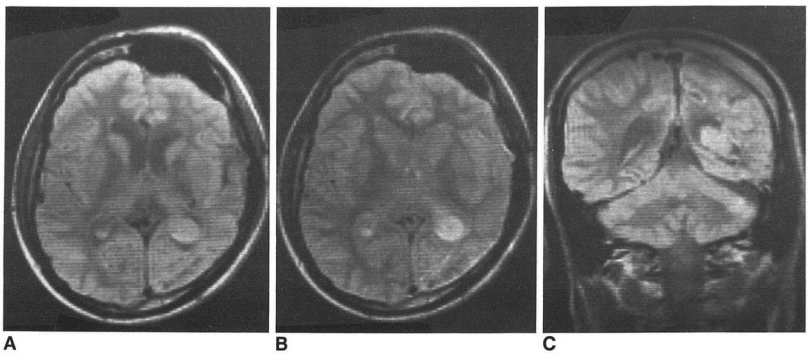
Eight patients with Sturge-Weber disease wi (one patient), or both (one patient). CT scans of ment and increased enhancement of the choroi and intracranial lesions. MRI showed similar fir enlargement, seen in six of eight cases of Stu the presence of angiomatous malformations of common finding in this disease.

Sturge-Weber disease is a neurocutaneo wine stain (nevus flammeus) of the face, an disease has been extensively reviewed in the of Sturge-Weber disease are venous angion inges. These angiomas have been seen in th pancreas, adrenal glands, pituitary, globe, an angiomas have been noted in the neuropath of two cases, in the radiology literature [13] that we studied, six showed enlargement choroid plexus on the side affected by the facia We believe the choroid plexus is commonly ir

Subjects and Methods

We reviewed eight cases of Sturge-Weber dis glomus of the choroid plexus of the lateral ventricl with contrast material were performed using a GE on an Ohio Nuclear Delta CT scanner. A slice thic two patients, MRI using spin-echo multislice techn was performed with TR-2 sec, TE-28 and 56 m thickness of 7 mm with a 3-mm interslice gap v evaluated by at least two independent observers.

To determine whether the enhancement and extent of calcification of the choroid plexus in our patients was unusual, we examined CT scans of 107 patients who had no evidence of Sturge-Weber disease (most had experienced trauma or had metabolic disease). The transverse diameter of the calcification (on noncontrast scans) and the enhancement (on contrast scans) of the glomus of the choroid plexus was measured with Vernier calipers and was corrected for magnification. Because CT slices were contiguous and the object of measurement (calcification or enhancement) was dense, partial volume errors were not encountered in these measurements. The size of the glomus of the choroid plexus as identified by its intensity and by the anatomical borders at the trigone of the lateral ventricles was similarly measured on MR. Partial volume errors could occur in the measurement of the choroid plexus on MR scans due to the interslice gap of 3 mm, but in both our cases, the difference in size was obvious.



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