Meningeal Biopsy

Meningeal and cortical Biopsy were evaluated in 37 patients (25 men and 12 women; mean age, 54 yr) who had chronic meningitis of an unknown cause between 1985 and 1993 (the era of magnetic resonance imaging). Magnetic resonance imaging with gadolinium contrast was the most useful diagnostic imaging technique, demonstrating meningeal enhancement in 15 of 32 patients (47%). Only 2 of 32 (6%) computed tomographic scans revealed enhancement. A definitive diagnosis was made in 16 of 41 biopsies (39%), but in cases where enhancement was present on either magnetic resonance imaging or computed tomography, a diagnosis was obtained in 80% (12 of 15 cases). Only 2 of 22 biopsies (9%) from nonenhancing regions were diagnostic. Although the locations of enhancement were distributed evenly, biopsies through suboccipital and pterional craniotomies gave the highest diagnostic yields (50%). Furthermore, if the biopsies were obtained from enhancing regions, the yield of these two approaches increased to 84 and 100%, respectively. Of 18 cases in which biopsy samples were taken from both the meninges and cortex, only 1 had cortical involvement alone. The meninges were therefore diagnostic in 15 of the 16 definitive diagnostic cases (94%). Second biopsies were necessary in four cases, of which the three biopsies from enhancing regions were diagnostic. The most frequent causes of chronic meningitis were sarcoidosis (31%) and metastatic adenocarcinoma (25%) [1].

Indications

Primary Angiitis of Central Nervous System.

Neurosarcoidosis

Intracranial hypotension is a cause of diffuse enhancement of the pachymeninx with gadolinium, which often is associated with subdural fluid collections. We reviewed the results of meningeal biopsy in six patients with intracranial hypotension and diffuse pachymeningeal enhancement to correlate the MRI findings with histopathologic observations and to explain the abnormalities seen on MRI. Grossly, the dura mater was unremarkable in all patients, as were the leptomeninges, except for one patient with prolonged (18 months) intracranial hypotension in whom the arachnoid was thickened and opaque. Microscopically, the dura mater was entirely normal on its epidural aspect; however, a fairly thin zone of fibroblasts and thin-walled small blood vessels in an amorphous matrix was noted on the subdural aspect. In the patient with longstanding symptoms, diffuse benign arachnoidal cell proliferation was also noted, probably a reaction triggered by longstanding changes in the subdural area, as noted in the five other patients. There was no evidence of inflammation, infection, or metastatic neoplasia. These findings suggest that in intracranial hypotension, the dural-meningeal abnormalities probably represent reactive secondary phenomena, likely related to hydrostatic changes in the CSF, and not a primary meningeal process [2].

A 45-year-old male patient presented with consciousness disturbance, cognitive dysfunctions, seizures and progressive paresis. None of the examinations performed, including cerebrospinal fluid examination, neuroimaging and biopsy of the leptomeninges, permitted us to establish a diagnosis

during the patient's hospital stay. The diagnosis of meningeal melanomatosis was established after an autopsy had been carried out.

In the absence of unequivocal test results, it is also worth taking into account the primary changes in the leptomeninx, including those caused by melanoma [3].

1)
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