Computed Tomography of Rheumatoid Pachymeningitis

Clinically apparent rheumatoid pachymeningitis is a rare complication of rheumatoid arthritis, but there have been reports of central nervous system involvement diagnosed at autopsy. To date no report of rheumatoid pachymeningitis with tentorial involvement has been demonstrated by computed tomography (CT) [1-6].

Case Report

A 41-year-old man with rheumatoid arthritis diagnosed at age 25 and with multiple joint deformities was seen with nausea, vomiting, and headache. He also complained of decreased visual acuity. His rheumatoid factor was elevated with a ratio of 1:1234; his erythrocyte sedimentation rate was also elevated. On physical examination the patient was found to have optic disk atrophy and decreased visual acuity in his central field on the right. CT showed marked enhancement of the tentorium (fig. 1A). There was exaggeration of the tentorial involvement on the right side extending anteriorly to involve the cavernous sinus region with a masslike configuration (fig. 1B).

A right frontal craniotomy was performed to biopsy the region of enhancement and to decompress the right optic nerve. The biopsy specimens were consistent with chronic pachymeningitis. Cultures of the cerebrospinal fluid and the dural specimens were negative for acid-fast bacillus, fungus, and routine cultures. VDRL was also negative. A diagnosis of rheumatoid pachymeningitis was made.

Discussion

Enhancement of the leptomeninges on CT is secondary to the increased vascularity resulting from an inflammatory reaction or tumor [7]. Therefore, it is nonspecific for autoimmune, bacterial, fungal, or viral inflammatory processes. The diagnosis of rheumatoid pachymeningitis is one of exclusion, which requires correlation of pathologic and clinical data with the radiologic findings.

The fact that the dural involvement was localized is not unusual. Many cases of localized rheumatoid involvement of the meninges have been reported [8]. The only previous report of leptomeninges enhancement on CT in connective tissue disease was in a case of Sjogren syndrome described by Alexander et al. [1].

Rheumatoid pachymeningitis should be a consideration in the proper clinical setting when tentorial enhancement is found.

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REFERENCES


Vertebral Artery Aneurysm in a 6-Year-Old Child

Congenital aneurysms are uncommon in children with the most common anatomic sites being the internal carotid artery (40%) and the anterior cerebral artery complex [1–6]. Posterior circulation aneurysms are quite rare (3%–5%) [4, 6]. We describe a case of a vertebral artery aneurysm in a 6-year-old child, which demonstrates the need for a complete angiographic study in children with documented subarachnoid hemorrhage.

A six-year-old girl was transferred to Upstate Medical Center with a tentative diagnosis of meningitis. For 2 days she had had bifrontal headache and stiff neck. On examination she had a low-grade fever, stiff neck, and right head tilt. A CT scan was negative for subarachnoid blood, but a lumbar puncture revealed 163,000 red blood cells and 20 white blood cells/mm³. Cerebral angiography demonstrated a small (3 mm) aneurysm at the junction of the third and fourth segments of the left vertebral artery (fig. 1). The patient underwent surgical intervention, and the aneurysm was successfully wrapped. Her postoperative course was uneventful.

Childhood intracranial hemorrhage is unusual [5], and although there is a higher overall incidence of aneurysm than of arteriovenous malformation, bleeding is more frequently associated with the latter [1, 3]. Patel and Richardson [6] described associated coarctation of the aorta in 12% and bilateral congenital polycystic kidney disease in slightly more than 3% of their 58 patients with aneurysms. Matson [1] reported coarctation of the aorta in three (23%) of 13 cases in his series.

Sedzimir and Robinson [3] reported a 25.8% incidence of “no lesion demonstrated” by angiography in juveniles with proven intracranial hemorrhage. We have reservations about this high percentage of negative results. We believe that with a total vascular workup and the availability of high-magnification and high-spatial-resolution angiography, a greater percentage of positive studies will be forthcoming.

Our case illustrates the need for demonstration of both vertebral arteries on a cerebral arteriogram when seeking a cause for intracranial hemorrhage in either children or adults.

Fig. 1.—Selective right vertebral arteriograms. A, Towne projection (arterial phase). B, Lateral projection (later arterial phase). Aneurysm of vertebral artery at dural hiatus (arrows), wherein small meningeal artery (arrowheads) has arisen.

REFERENCES


