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Tentorial traversal by ependymoblastoma.

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Tentorial Traversal by Ependymoblastoma

We present a case in which MR showed unusual erosion of a supratentorial tumor through the tentorium.

Case Report

An otherwise normal 28-month-old boy had a 2-month history of intermittent vomiting and a 1-week history of headaches. Neurologic examination was normal except for a right extensor plantar response.

Axial CT scan (Fig. 1A) showed a large primarily intraventricular mass occupying the posterior left cerebral hemisphere. Directly caudad to this, a similar tumor was present in the left cerebellar hemisphere displacing the brainstem and fourth ventricle (Fig. 1B). No tumor was seen in the tentorial hiatus. Extensive patchy areas of increased density scattered throughout the tumor were interpreted as either blood or calcification. Coronal MR images (Fig. 1C) showed traversal of the supratentorial tumor through the tentorium into the left cerebellar hemisphere. Scattered throughout the tumor were large irregular areas of hemorrhage that were identified by increased signal intensity on T1 sequences. The areas of increased signal corresponded to the areas of increased attenuation on CT scans.

At surgery, a large invasive necrotic tumor of ventricular origin was resected partially. It extended through a large hole in the tentorium to invade the cerebellum.

Microscopically, the tumor was densely cellular and composed of uniform cells with hyperchromatic nuclei and, frequently, mitotic figures. Scattered small central-lumen rosettes (true rosettes) and tubules with multiple layers of nuclei were present. Occasionally, glio-vascular structures were seen in which blood vessels were surrounded by radiating processes of tumor cells that had nuclei in the antipodal position. No calcium was seen. Pathologic diagnosis was ependymoblastoma.

Chemotherapy was attempted without success. The patient died 3 months after presentation.

Discussion

Ependymoblastoma is a rare neoplasm of the CNS that occurs in young children. It has histologic features of a primitive, densely cellular neuroepithelial tumor with numerous ependymal rosettes. Approximately 75% of ependymoblastomas are supratentorial, and most are large (3–11 cm). Although these tumors would be expected to be intra- or paraventricular (as in our case), most have been separate from the ventricular wall and presumably have arisen from ectopic cells committed to ependymal differentiation. These tumors share with other primitive neuroectodermal tumors the propensity for leptomeningeal seeding. The median survival is approximately 1 year [1].

The unique feature of this case is the demonstration of tentorial traversal. Primitive neuroectodermal tumors such as retinoblastoma or olfactory neuroblastoma may erode through bone to invade the base of the brain. Although other primitive neuroectodermal tumors and malignant gliomas may invade the dura and calvarium, traversal of the tentorium by an intraaxial tumor is rare.

The CT and MR findings in our case are otherwise similar to those of other primitive neuroectodermal tumors [2, 3]. The differential diagnosis includes ependymoma, astrocytoma, and choroid plexus papilloma or carcinoma [4].

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2. Altman N, Fitz CR, Chuang S, Harwood-Nash D, Cotter C, Armstrong D. Radiologic characteristics of primitive neuroectodermal tumors in children. *AJNR* **1985**;6:15–18
3. Figueroa R, El Gammal T, Brooks BS, Holgate R, Miller W. MR findings on primitive neuroectodermal tumors. *J Comput Assist Tomogr* **1989**;13(5):773–778
4. Silver AJ, Ganti SR, Hilal SK. Computed tomography of tumors involving the atria of the lateral ventricles. *Radiology* **1982**;145:71–78

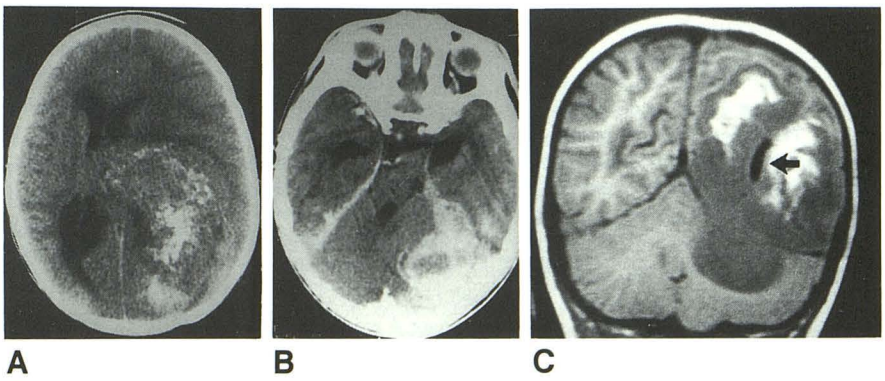

Fig. 1.—Tentorial traversal by ependymoblastoma.

***A*, Unenhanced CT scan shows a large heterogeneous supratentorial tumor conforming to shape of a dilated left lateral ventricle. Surrounding edema is minimal.**

***B*, Contrast-enhanced CT scan shows mass invading left side of posterior fossa.**

***C*, Coronal T1-weighted MR image, 600/20/2, shows tumor extending through a defect in left tentorium cerebelli. A large tumor vein (*arrow*) appears as a tubular area of signal void.**

Members on the National and International Scene

Mahmood F. Mafee, MD, Professor of Radiology at the Magnetic Resonance Imaging Center of the University of Illinois at Chicago, has been selected to serve as Distinguished Scientist in the Department of Radiologic Pathology of the Armed Forces Institute of Pathology in Washington, DC, from July 1, 1993 to June 30, 1994.

Notices of courses and symposia will be considered for publication in the AJNR, at the Editor's discretion, based on their relevancy to neuroradiologic imaging and if the following information is included: (a) dates and location, (b) a brief description of the course, (c) a listing of local and visiting faculty, (d) fees, and (e) number of Category 1 credits that are available. Such notices should be submitted at least 4 months before the meeting date. Assuming adequate time prior to the date of the event, the notice may appear in up to a maximum of two consecutive issues of the *AJNR*. Address announcements to Dr. Michael S. Huckman, Department of Radiology, Rush-Presbyterian-St. Luke's Medical Center, 1653 W. Congress Parkway, Chicago, IL 60612.

Books Received

Imaging in Trauma and Critical Care. Edited by Stuart E. Mirvis and Jeremy W. R. Young. Baltimore: Williams & Wilkins, 576 pp, 1992. $140

Ultrasound of the Eye and Orbit. by Sandra Frazier Byrne and Ronald L. Green. St. Louis: Mosby Year Book, 505 pp, 1992. $95

Introduction to Vascular Ultrasonography. By William J. Zwiebel, MD. Philadelphia: W. B. Saunders, 464 pp, 1992. $75

Progress In Neutron Capture Therapy for Cancer. Edited by Barry J. Allen, Douglas E. Moore, and Baiba V. Harrington. New York: Plenum Press, 668 pp, 1992. $129.50

Materials for Review

Books, AV Programs, and software intended for review should be sent to:

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AJNR Editorial Office
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Errata

An error occurred on page 1023 of the Meeting Summary, "Highlights of the First Congress of the World Federation of the Interventional and Therapeutic Neuroradiology," Fox AJ, *AJNR* 1992;13:1021–1024. Part of the first sentence in the first paragraph of the second column was incorrect. The correct sentences should be "In a cooperative study from La Coruna and Zaragoza, Spain, 104 patients with brain AVMs were embolized. The investigators reported no associated mortality."

Kenneth I. Lipow, M.D. was omitted, in error, from the list of authors of the case report, "Tentorial traversal by ependymoblastoma." *AJNR* 1991;12:181.