AJNR

Dense dermoid cyst of the posterior fossa.

L F Drolshagen and M Standefer

AJNR Am J Neuroradiol 1991, 12 (2) 317
http://www.ajnr.org/content/12/2/317.citation

Dense Dermoid Cyst of the Posterior Fossa

Intracranial dermoid tumors and cysts account for approximately 1% of CNS tumors [1, 2]. Dense epidermoid tumors may simulate a meningioma [3]. We present a case of a patient in whom CT showed a dense intracranial dermoid cyst and MR showed an unusual low signal intensity and a characteristic sinus tract.

Case Report

A 54-year-old woman who had a history of chronic headache had atrophy of the right sternocleidomastoid muscle and ipsilateral strap muscles. CT showed a midline high-attenuation (364 H) mass 4 × 5 cm in the posterior fossa (Fig. 1A). Vermian atrophy was seen with no mass effect or hydrocephalus. Angiography showed displacement of the vessels of the posterior fossa without tumor staining. MR showed a characteristic midline dermal sinus tract into the mostly low-signal-intensity mass on the T1- and T2-weighted pulse sequences (Figs. 1B and 1C). Total excision of the mass, including the sinus tract, was performed. Grossly, the gray, mostly cystic mass had a 3-mm sinus tract extending to a tuft of hair on the patient's occiput. Cuboidal and squamous epithelia lined the cyst, which was filled with calcified keratinized debris.

Discussion

Dermoid cysts of the posterior fossa are benign, mostly midline, congenital brain neoplasms, usually located above or behind the vermis. In addition to skinlike elements, fat, bone, hair, and other nonindigenous tissues may be present. Saponification may occur, which may cause the cyst to calcify [2].

Dermoid lesions are slow growing and may become quite large before producing signs and symptoms. Dermal sinus tracts or pilonidal sinuses may occur in nearly half the cases with relapsing chemical or purulent meningitis, a complication [1, 2, 4].

Typically, dermoid cysts are hyperintense on T1-weighted sequences, with progressively lower signal on T2-weighted images because of the usual contents of partially liquified cholesterol. Characteristic CSF-lipid levels occasionally may be seen [2, 5, 6]. If extensive calcification occurs, as in our case, the lesion may become quite hypointense on T1- and T2-weighted MR images or show high attenuation on CT scans, simulating a dense meningioma [3]. Other hypointense lesions to be considered include calcified meningioma, ependymoma, osteoma, and other bone neoplasms.

L. F. Drolshagen
St. Edward Mercy Medical Center
Ft. Smith, AR 72903
M. Standefer
Neurosurgery Associates
Ft. Smith, AR 72901

REFERENCES

1. Uglietta JP, Boyko OB, Rippe DJ, et al. Intracerebral extension of nasal dermoid cyst: CT appearance. *J Comput Assist Tomogr* **1989**;13(6):1361–1364
2. Davidson HD, Ouchi T, Steiner RE. NMR imaging of congenital intracranial germinal layer neoplasms. *Neuroradiology* **1985**;27:301–303
3. Nagashima C, Takaham M, Sakagnchi A. Dense cerebello-pontine epidermoid cyst. *Surg Neurol* **1982**;17:172–177
4. Zimmerman RA, Bilaniuk LT, Dolinskas C. Cranial CT of epidermoid and congenital fatty tumors of maldevelopmental origin. *J Comput Assist Tomogr* **1979**;3:40–66
5. Hasso AN, Fahmy JL, Hinshaw DB. Tumors of the posterior fossa. In: Stark DD, Bradley WG Jr, eds. *Magnetic resonance imaging.* St. Louis: Mosby, **1988**:444
6. Kjos B, Brant-Zawadzki M, Kucharczyk W, et al. Cystic intracranial lesions: magnetic resonance imaging. *Radiology* **1985**;155:363–369

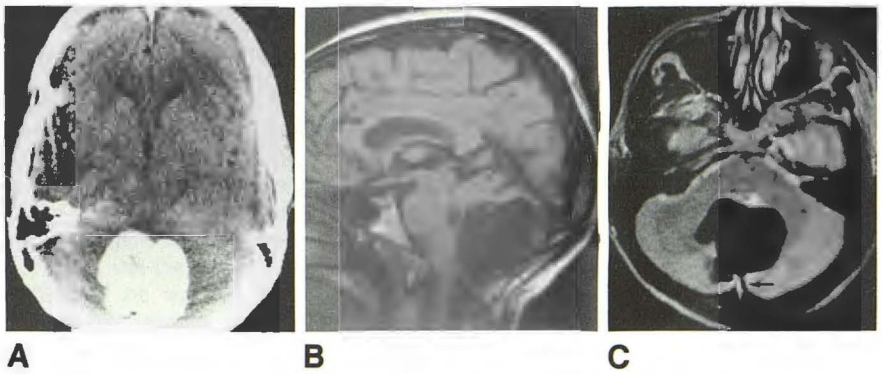

Fig. 1.—Dense dermoid cyst of posterior fossa.
***A*, Unenhanced CT scan shows high-attenuation central mass in posterior fossa and associated vermian atrophy.**
***B* and *C*, Midline 5-mm sagittal T1-weighted SE MR image (*B*, 500/40/1) shows sinus tract (*arrow*) extending to low-signal mass. Axial 5-mm T2-weighted SE MR image (*C*, 3000/90/2) shows sinus tract (*arrow*).**