



Get Clarity On Generics

Cost-Effective CT & MRI Contrast Agents



FRESENIUS
KABI

WATCH VIDEO

AJNR

Intracranial mesenchymal chondrosarcoma.

S R Nokes, R Dauito, F R Murtagh, L C Love and J A Arrington

AJNR Am J Neuroradiol 1987, 8 (6) 1137-1138

<http://www.ajnr.org/content/8/6/1137.citation>

This information is current as
of August 12, 2025.

Intracranial Mesenchymal Chondrosarcoma

Steven R. Nokes,¹ Ralph Dauito,¹ F. Reed Murtagh,¹ Lucy C. Love,² and John A. Arrington¹

A case of intracranial mesenchymal chondrosarcoma (IMC) was treated surgically at our institution. CT images of IMC have not been previously published; and a review of the literature found only one reported case with CT correlation [1]. The oldest patient with a primary IMC previously reported was 51 years old [2]. We present a case occurring in a 61-year-old woman and describe the CT and angiographic findings.

Case Report

A 61-year-old woman presented with a 3-month history of nausea, difficulty with gait, morning headaches in the frontal region, and subjectively decreasing upper extremity strength bilaterally. Neurologic examination revealed a trace of left upper extremity weakness and no evidence of papilledema. A conventional radionuclide bone scan demonstrated increased tracer uptake in the right parietal region. Skull radiographs revealed dense flocculent calcification measuring 3 × 4 cm just off the midline and posterior to the coronal suture on the right. A CT scan of the head showed heavy calcification in the right frontal area with some mass effect. The calcification was not contiguous with the calvaria (Fig. 1A). Another CT scan, taken after administration of contrast material, revealed a large, inhomogeneously enhancing mass surrounding the calcification with some edema posteriorly (Fig. 1B).

A right internal carotid arteriogram showed no neovascularity associated with the calcification (Figs. 2A and 2B). There was no feeding of the tumor from the right external carotid vessels. Dural calcification extending into the interhemispheric fissure was well demonstrated on the anteroposterior view.

At surgery, a large, calcified mass attached to the right parietal convexity dura and falx was removed in part. Radiation therapy was planned and the patient is doing well postoperatively.

Discussion

Mesenchymal chondrosarcoma is a rare, malignant tumor first described by Lichtenstein and Bernstein in 1959 [3]. Initially thought to be a neoplasm of bone, approximately one-half of cases are extraosseous in origin [4]. The meninges are the most frequently reported site of extraskeletal origin [5]. Since Dahlin and Henderson's report [6] of an IMC in

1964, 16 additional cases including our own have been documented in the literature [1, 2, 4–12].

Primary cartilaginous tumors account for approximately 16% of all intracranial neoplasms [13]. Pathologically, these include benign chondromas, chondrosarcomas, and mesenchymal chondrosarcomas. Mesenchymal chondrosarcoma is easily distinguished from classical chondrosarcoma histologically as the former consists of a more primitive background of fusiform cells alternating with well-differentiated islands of cartilage [9, 14]. As might be expected, IMC has a much worse prognosis than classical chondrosarcoma, with a marked tendency for local recurrence and distant metastases [8]. Classical chondrosarcoma tends to occur at the skull base, have a peak manifestation in the fourth and fifth decades, and be avascular at angiography [14–17]. IMC tends to occur in the frontoparietal region (12/17 cases), have a peak manifestation in the third decade (age range, 7–61 years), and be highly vascular at angiography (approximately one-half of the cases) [1, 18].

In our case, oligodendroglioma was considered the most likely diagnosis on the basis of the CT and angiographic findings. Meningioma was thought unlikely in the absence of external carotid arterial supply, hyperostosis, or homogeneous contrast enhancement on CT.

The only previously described CT scan of IMC demonstrated a large, lobulated enhancing mass in the frontoparietal convexities bilaterally [1]. Calcification was not mentioned. Angiographically, the tumor mimicked an arteriovenous malformation. IMC should be considered in the differential diagnosis of a calcified, enhancing mass in the frontoparietal region. This is important to the referring neurosurgeon. Owing to the tumor's highly aggressive nature, local postoperative radiation as well as pre- and postoperative chemotherapy have been recommended, particularly in cases of subtotal resection [8, 18].

ACKNOWLEDGMENTS

We thank Americo A. Gonzalvo for the pathologic diagnosis and Rhonda Kaye Tuttle for preparing the manuscript.

Received November 8, 1985; accepted after revision February 4, 1986.

¹ Department of Radiology, University of South Florida, College of Medicine, 12901 N. 30th Street, Box 17, Tampa, FL 33612. Address reprint requests to S. R. Nokes.

² Department of Surgery, Division of Neurosurgery, University of South Florida, College of Medicine, Tampa, FL 33612.

AJNR 8:1137–1138, November/December 1987 0195–6108/87/0806–1137 © American Society of Neuroradiology

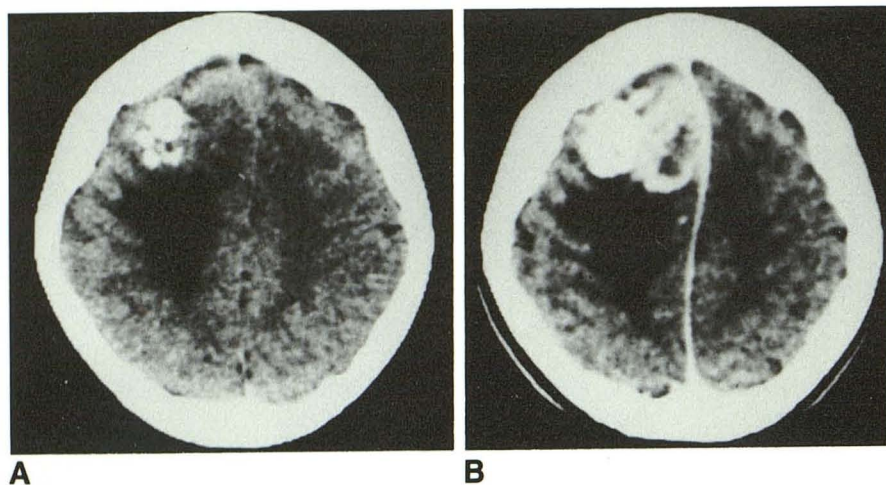


Fig. 1.—A and B, CT scans of brain without and with contrast show flocculent calcification with contrast enhancement in right frontal vertex with associated edema and bowing of a thickened falx cerebri.

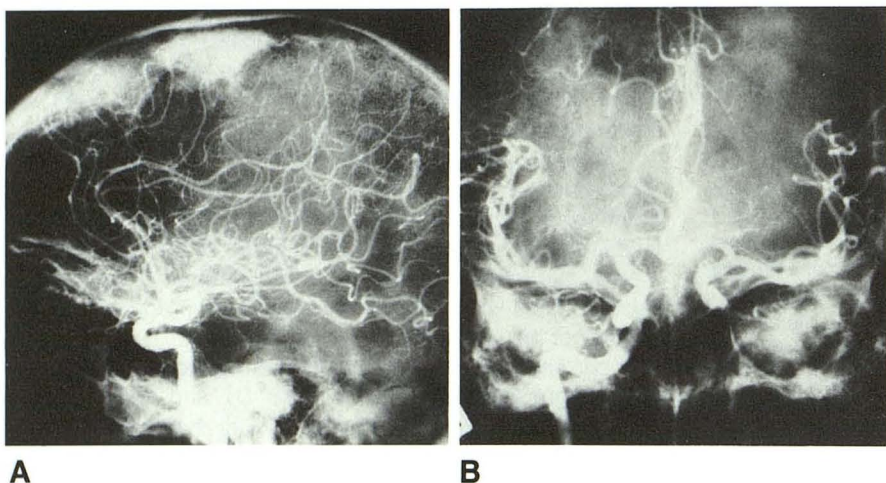


Fig. 2.—A, and B, Right internal carotid arteriogram. Anteroposterior and lateral views show no neovascularity in region of dense calcification corresponding to the lesion seen on CT. Note dural calcification extending into interhemispheric fissure and involving the falx.

REFERENCES

1. Heros RC, Martinez AJ, Ahn HS. Intracranial mesenchymal chondrosarcoma. *Surg Neurol* 1980;14:311-317
2. Waga S, Masayuki M, Kyoza A, Sotokichi M. Intracranial chondrosarcoma with extracranial metastases. Case report. *J Neurosurg* 1972;36:790-794
3. Lichtenstein L, Bernstein D. Unusual benign and malignant chondroid tumors of bone. *Cancer* 1959;12:1142-1157
4. Guccion JG, Font RL, Enzinger FM, Zimmerman LE. Extracranial mesenchymal chondrosarcoma. *Arch Pathol* 1973;95:336-340
5. Scheithauer BW, Rubinstein LJ. Meningeal mesenchymal chondrosarcoma. Report of 8 cases and review of the literature. *Cancer* 1978;42:2744-2752
6. Dahlin DC, Henderson ED. Mesenchymal chondrosarcoma. *J Bone Joint Surg [Am]* 1964;46:747-754
7. Flyger G, Freidenfeldt H, Orell SR. Intracerebral, possibly malignant osteochondrofibroma in a child. *Acta Pathol Microbiol Immunol Scand* 1963;58:299-305
8. Harwood AR, Krajchich JI, Fornasier VL. Mesenchymal chondrosarcoma: a report of 17 cases. *Clin Orthop* 1981;158:144-148
9. Lynch PG, Uriburu E. An intracranial cartilage-containing meningeal tumor. Case report. *J Neurosurg* 1973;39:261-264
10. Raskind R, Grant S. Primary mesenchymal chondrosarcoma of the cerebrum. Report of a case. *J Neurosurg* 1966;24:676-678
11. Rollo JL, Green WR, Kahn LB. Primary meningeal mesenchymal chondrosarcoma. *Arch Pathol Lab Med* 1979;103:239-243
12. Zucker DK, Horoupian DS. Dural mesenchymal chondrosarcoma. Case report. *J Neurosurg* 1978;48:829-833
13. Berkman VM, Blatt ES. Cranial and intracranial cartilaginous tumors. *Clin Radiol* 1968;19:327-333
14. Grossman RI, Davis KR. Cranial computed tomographic appearance of chondrosarcoma of the base of the skull. *Radiology* 1981;141:403-408
15. Bahr AL, Gayler BW. Cranial chondrosarcomas. *Radiology* 1977;124:151-156
16. Minagi H, Newton TH. Cartilaginous tumors of the base of the skull. *AJR* 1969;105:308-313
17. Schacter B, Wortzman G, Noyek AM. The clinical and radiological diagnosis of cartilaginous tumors of the base of the skull. *Can J Otolaryngol* 1975;4:364-376
18. Harsch GR, Wilson CB. Central nervous system mesenchymal chondrosarcoma. Case report. *J Neurosurg* 1984;61:375-381