



Discover Generics

Cost-Effective CT & MRI Contrast Agents



FRESENIUS
KABI

WATCH VIDEO

AJNR

Multiple Varices in the Unilateral Cerebral Venous System

Ken Kazumata, Shin Fujimoto, Hiroyuki Idosaka, Satoshi Kuroda, Mitsuru Nunomura and Kiyohiro Houkin

AJNR Am J Neuroradiol 1999, 20 (7) 1243-1244

<http://www.ajnr.org/content/20/7/1243>

This information is current as
of June 20, 2025.

Multiple Varices in the Unilateral Cerebral Venous System

Ken Kazumata, Shin Fujimoto, Hiroyuki Idosaka, Satoshi Kuroda, Mitsuru Nunomura, and Kiyohiro Houkin

Summary: A case of multiple cerebral varices located in the superficial cerebral veins and ipsilateral internal jugular vein is reported.

Although a cerebral varix may frequently be associated with an arteriovenous malformation, a solitary intracranial varix is rare in the CNS (1–3). Several previous reports have described a cerebral varix composed of a single superficial or deep cerebral vein without other accompanying vascular malformations (4–7). We describe a case of unilateral varicosities in the superficial cerebral veins and ipsilateral neck.

Case Report

A 24-year-old woman was referred because of a palpable mass in the right side of the neck. Her history was not remarkable for childhood infection, congenital abnormality, or familial vascular disease. Physical examination revealed normal height and weight for age. The extremities were symmetrical, and there were no cutaneous lesions. Findings at neurologic examination were normal, and results of tests for bleeding time, prothrombin time, activated prothrombin time, fibrinogen, and fibrin/fibrinogen degradation products were all within normal limits. A contrast-enhanced cervical CT scan showed an enlarged right internal jugular vein as well as an opacified mass adjacent to the internal and external jugular vein (Fig 1A). There was no stenosis in the superior vena cava. A right internal carotid angiogram showed multiple varices and phlebectasis of the superficial cerebral veins (Fig 1B and C). The cervical varix was opacified via a right enlarged internal jugular vein as well as an external jugular vein (Fig 1D). A left internal carotid angiogram revealed no abnormality. The venous drainage was otherwise normal, including the superior sagittal sinus, lateral sinus, and sigmoid sinus. There was no arteriovenous shunting in the cerebral or cervical vascular system.

Surgical resection of the cervical varix was performed. Histologically, the specimen was composed of a saclike structure measuring about $8 \times 7 \times 7$ mm. Microscopic sections showed partial thickening of the intima. The media and adventitia were

degenerated and contained atrophic smooth muscle and dense collagen fibers, consistent with the diagnosis of varix.

Discussion

McCormick (2) categorized pure intracranial varix as a venous malformation. In a search of the literature, we found only eight cases of angiographically proved cerebral varix that were not associated with arteriovenous shunting (4–11). Cavernous or venous angioma was associated in three of eight cases (9–11); the other five cases were reported to have a varix composed of a solitary cerebral vein without other accompanying vascular abnormalities. Roda et al (5) reported an intraventricular varix that caused intraventricular and subarachnoid hemorrhage. Nishioka et al (6) described a varix of the insular vein that may have caused seizures. Shibata et al (7) reported a case of asymptomatic varix of the deep sylvian vein. To our knowledge, no previous report has described multiple varicose venous dilatations that involved unilateral superficial cerebral veins and that were accompanied by a varix of the internal jugular vein.

Cerebral varix consists of a relatively large, thin-walled vessel, usually lined by a single layer of endothelium and encircled by a relatively thin lamina of fibrous connective tissue (12). Congenital weakness of the vessel walls, previous inflammation, and trauma have been postulated as a cause of varix (12). In our case, the origin of the cervical varix remains unknown; it was surgically resected for cosmetic reasons. Although histopathologic analysis was not revealing, some connective tissue disorder may underlie the pathogenesis. The multiple varicose dilatations occurring in the ipsilateral head and neck might have been caused by a previous inflammation or by maldevelopment of the right cerebral venous systems. Klippel-Trenaunay-Weber syndrome is a phakomatosis accompanied by varicosities and phlebectasis of the superficial and deep venous systems as well as by cutaneous angioma and unilateral hypertrophic limbs (13, 14). However, the findings in our patient were not compatible with such a congenital abnormality.

Cerebral varix may cause intracerebral or intraventricular hemorrhage (5, 8). The prevalence of rupture is not known. Two of the eight reported cases that were diagnosed at angiography had a ce-

Received December 9, 1998; accepted after revision February 19, 1999.

From the Department of Neurosurgery, Teine Keijinkai Hospital, Sapporo, Japan (K.K., S.F., H.I., S.K., M.N.), and the Department of Neurosurgery, Hokkaido University School of Medicine, Sapporo, Japan (K.H.).

Address reprint requests to Ken Kazumata, MD, Department of Neurosurgery, Hokkaido University School of Medicine, North 15 West 7, Kita-ku, 060 Sapporo, Japan.

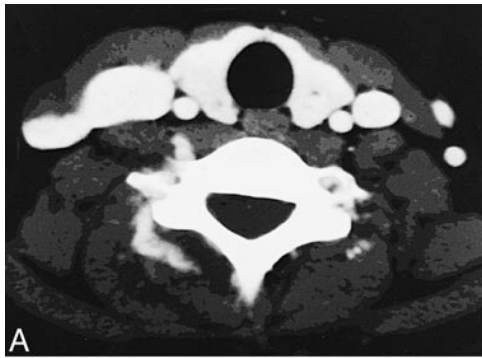
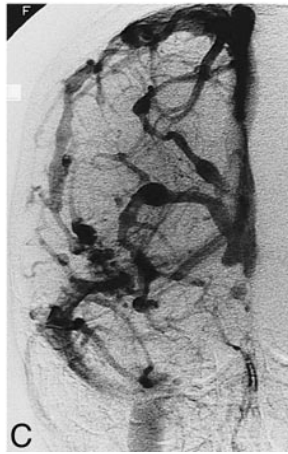
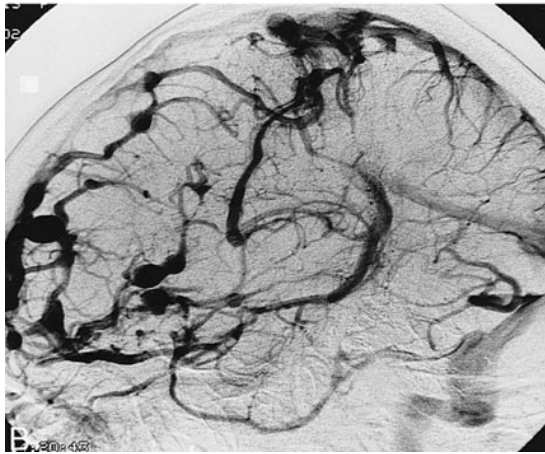


FIG 1. 24-year-old woman with a palpable mass in the right side of neck.

A, Contrast-enhanced cervical CT scan shows a varix adjacent to the right internal and external jugular vein. Asymmetry was evident in the internal jugular veins.

B–D, Right internal carotid angiogram shows multiple varices and enlargement in the superficial cerebral veins (B, C). Venous phase also revealed a cervical varix, which was opacified via internal and external jugular veins (D).



rebral varix resulting in intracranial hemorrhage (4–11). However, it is likely that, in most cases, the cerebral varix remains clinically silent. Thus, conservative follow-up should be recommended for incidental cases of cerebral varix. In particular, it is impossible to surgically excise the multiple intracranial varicose dilatations, as found in the present case. Although a cerebral varix is an apparently rare disease with neck tumors (15), further radiologic investigation may be warranted, particularly in the intracranial venous system.

References

1. Yasargil MG. *Microneurosurgery*. New York: Thieme; 1984; IIIB: 87,111,137
2. McCormick WF. The pathology of angiomas. In: Fein JM, Flamm ES, eds. *Cerebrovascular Surgery*. New York: Springer; 1985; VI:1075–1095
3. McCormick WF, Hardman JM, Boulter TR. Vascular malformation (angiomas) of the brain, with special reference to those occurring in the posterior fossa. *J Neurosurg* 1968;28:241–251
4. Tonohata K, Maehara T, Noda M, Katoh H. Isolated cerebral varix of the superficial cortical vein: CT demonstration. *J Comput Assist Tomogr* 1986;10:1073–1074
5. Roda JM, Bencosme J, Isla A, et al. Intraventricular varix causing hemorrhage: case report. *J Neurosurg* 1988;68:472–473
6. Nishioka T, Kondou A, Nin K, et al. Solitary cerebral varix. *Neurol Med Chir (Tokyo)* 1990;30:904–907
7. Shibata Y, Hyoudou A, Tsuboi K, et al. Isolated cerebral varix with magnetic resonance imaging findings: case report. *Neurol Med Chir (Tokyo)* 1991;31:156–158
8. Tyson GW, Jane JA, Strachan WE. Intracerebral hemorrhage due to venous aneurysm. *J Neurosurg* 1978;49:739–741
9. Meyer JD, Baghai P, Latchaw RW. Cerebral varix and probable venous angioma: an unusual isolated anomaly. *AJNR Am J Neuroradiol* 1983;4:85–87
10. Handa J, Suda K, Sato M. Cerebral venous angioma associated with varix. *Surg Neurol* 1984;21:436–440
11. Numaguchi Y, Naedell JM, Mizushima A, Wilensky MA. Cerebral venous angioma and a varix: a rare combination. *Comput Radiol* 1986;10:319–323
12. Noran HH. Intracranial vascular tumors and malformations. *Arch Pathol Lab Med* 1945;39:393–416
13. Klippel M, Trenaunay P. Du naevus variqueux osteo-hypertrophique. *Arch Gen Med* 1900;3:641–672
14. Weber PF. Angioma formation in connection with hypertrophy of limbs and hemihypertrophy. *Br J Dermatol* 1907;19:231–235
15. Ajulichuku EU, Da-Rocha Afodu JT, Bode C, et al. Varix of the external jugular vein. *Thorac Cardiovasc Surg* 1986;34:135–136