

Dural arteriovenous fistula associated with medullary ependymoma: an unusual association

Benedito Jamilson Araújo Pereira¹

¹ Laboratory of Molecular and Cellular Biology (LIM15), Department of Neurology, Faculdade de Medicina, Universidade de São Paulo, São Paulo, SP, Brazil.

DOI: 10.31744/einstein_journal/2024AI0998

How to cite this article:

Pereira BJ. Dural arteriovenous fistula associated with medullary ependymoma: an unusual association. *einstein* (São Paulo). 2024;22:eAI0998.

Associate Editor:

Kenneth Gollob
Hospital Israelita Albert Einstein, São Paulo, SP, Brazil
ORCID: <https://orcid.org/0000-0003-4184-3867>

Corresponding author:

Benedito Jamilson Araújo Pereira
Avenida Dr. Arnaldo, 455 - 4º floor - room 4110
Zip code: 01246-903 - São Paulo, SP, Brazil
Phone: (55 11) 3266-6296
E-mail: benedito.jamilson@hotmail.com


Received on:

Jan 20, 2024

Accepted on:

Aug 23, 2024

Copyright the authors

 This content is licensed under a Creative Commons Attribution 4.0 International License.

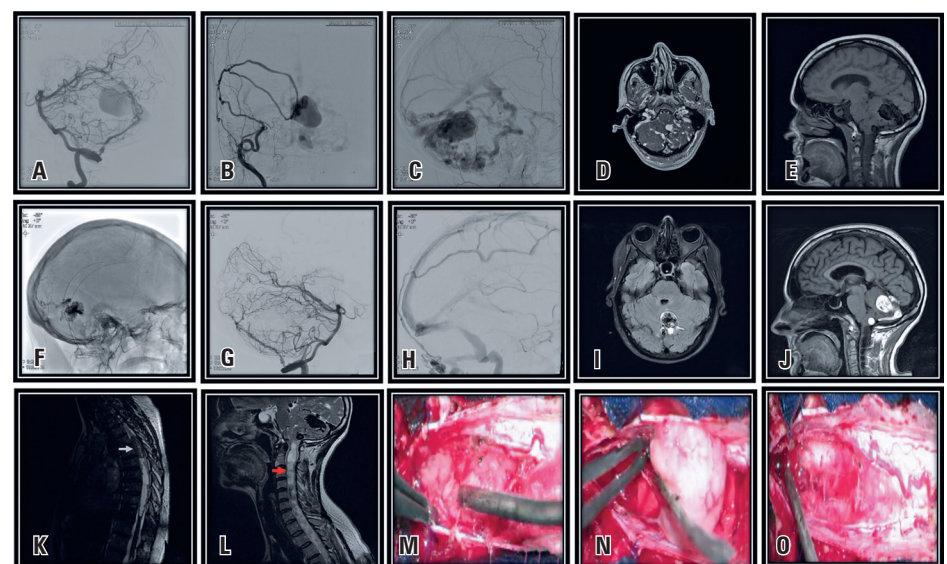


Figure 1. A-C) Cerebral angiography showing the presence of high-flow dural arteriovenous fistula (DAVF), along with venous aneurysm, being nourished by the superficial temporal and occipital arteries and middle pharyngeal branches; D-E) Cerebral MRI showing DAVF in posterior fossa; F-H) Cerebral angiography after endovascular treatment of DAVF; I-J) MRI after endovascular treatment with Onyx; K) Thoracic spine MRI showing intramedullary tumor; L) MRI of cervical spine showing syringomyelia extending from medullary tumor to medulla; M-O) Transoperative images of spinal tumor resection

A 42-year-old woman presented with progressive paraparesis; after magnetic resonance imaging of the neuroaxis, an intramedullary tumor was observed at T4-T6 with a syringomyelia and dilatation of the venous system of the posterior fossa. Cerebral angiography revealed dural arteriovenous fistula (DAVF). To treat DAVF, the medullary tumor was surgically resected, and histopathological analysis confirmed the presence of an ependymoma (Figure 1). The presence of DAVF associated with spinal tumors has not been reported in the literature to date, which makes this article unique.

Ependymomas are highly vascular. Tumor-induced biochemicals such as a vascularization factor, hypoxia-inducible factor 1, vascular endothelial growth factor, and other thrombotic chains might contribute to the generation of DAVF.^(1,2)

Another hypothesis is that changes occur in cerebrospinal fluid (CSF). CSF alterations that lead to intracranial hypertension are generally those that

obstruct cerebrospinal fluid circulation at any point in its pathway and those that cause difficulty in CSF reabsorption.⁽³⁾

Benign tumors may be associated with DAVFs that are directly related to the cancer or are present in distant anatomical locations. This case report such an association between DAVF and medullary ependymoma.

AUTHOR CONTRIBUTION

Benedito Jamilson Araújo Pereira: conceptualization, data curation, formal analysis, writing - original draft, and writing - review and editing.

AUTHOR INFORMATION

Pereira BJ: <http://orcid.org/0000-0001-5871-6405>

REFERENCES

1. Vellimana AK, Daniels DJ, Shah MN, Zipfel GJ, Lanzino G. Dural arteriovenous fistulas associated with benign meningeal tumors. *Acta Neurochir (Wien)*. 2014;156(3):535-44.
2. Cunha e Sá M, Gradil C. The association between dural arterio-venous fistulas (DAVFs) and meningeal-based tumors [editorial]. *Acta Neurochir (Wien)*. 2014;156(3):545-6.
3. Pollay M. Review of spinal fluid physiology: production and absorption in relation to pressure. *Clin Neurosurg*. 1977;24:254-69. Review.