



Scalp Cirroid Aneurysm: An Updated Systematic Literature Review and an Illustrative Case Report

Luis Henrique Albuquerque Sousa¹, Luana Antunes Maranhã Gatto², Zeferino Demartini Junior², Gelson Luis Koppe³

Key words

- Arteriovenous fistula
- Arteriovenous malformation
- Cirroid aneurysm
- Endovascular procedures
- Interventional radiology
- Plastic surgery
- Therapeutic embolization

Abbreviations and Acronyms

DSA: Digital subtraction angiography

From the ¹Resident of Neurosurgery, Neurosurgery Department, ²Neurosurgeon and Interventional Neuroradiologist, Neurosurgery Department, and ³Head of the Interventional Neuroradiology Department, Cajuru University Hospital, Pontifical Catholic University, Curitiba, Parana, Brazil

To whom correspondence should be addressed:
Luis Henrique Albuquerque Sousa, M.D.
[E-mail: sousa.lha@gmail.com]

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INTRODUCTION

Cirroid aneurysm is a pathologic abnormal structure connecting artery and vein without capillaries, with variceal dilatation of draining veins,¹ reported previously as arteriovenous malformation^{1,2} or arteriovenous fistula.^{3,4} “Cirroid” derives from the Greek word to varyx⁴ and the disease is also known as plexiform angioma,⁵ aneurysma septinum, or aneurysm racemosum.⁶

Although historically and clinically well defined, scalp vascular abnormalities are uncommon, and their pathogenesis is not completely understood. The real incidence of scalp cirroid aneurysm is unknown; case series and reviews demonstrate a prevalence of about 200 cases in 15 years worldwide.⁷ There is widely variable etiology and angioarchitecture that make consensus management difficult, and

Scalp cirroid aneurysm is an arteriovenous fistula of the scalp that is unconnected by intracranial or cerebral vessels. Variceal dilatation of draining veins can produce cosmetic concerns, masses, local pain, palpable thrills, and audible bruits, headache, tinnitus, and hemorrhage. Its etiopathogenesis is not well understood. Treatment includes surgery (fistula repair by simple surgical ligation until gross total resection), embolization (whether percutaneous or endovascular), or a combination of the two. An updated systematic review of the last 10 years publications was performed. Also, we report an illustrative case of a young boy with posttraumatic cirroid aneurysm and good documentation on head vascular examinations, treated by multiple routes (percutaneous embolization with coils and endovascular embolization with cyanoacrylate) with a decrease of the pulsatile mass. A plastic surgery team performed gross total resection, and the final esthetic result was extremely satisfactory.



Figure 1. A 10-year-old boy with a reddish mass on the left front of the scalp.

different modalities of treatment have been described.



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CASE REPORT

A 10-year-old male child presented with a bulky mass with pulsatile fremitus on the left forehead and frontal part of the scalp. The lesion was first noticed when he was 3 years old, shortly after a 2-meter-high fall with mild head trauma (he jumped out of the window), with a progressive insidious edema of

progressive enlargement. The patient's medical history was unremarkable. At the physical examination, the mass had a reddish color, pulsation, thrillers, and pain on palpation and measured approximately 6 × 3 cm in the largest diameter (Figure 1). It had a notable volume decrease after digital pressure, suggesting a flow-dependent lesion (Video 1). Bruits were detectable on auscultation. Otherwise, the child was neurologically intact.

Computed tomography of the brain showed an extracranial large lesion without intracranial changes. Magnetic resonance

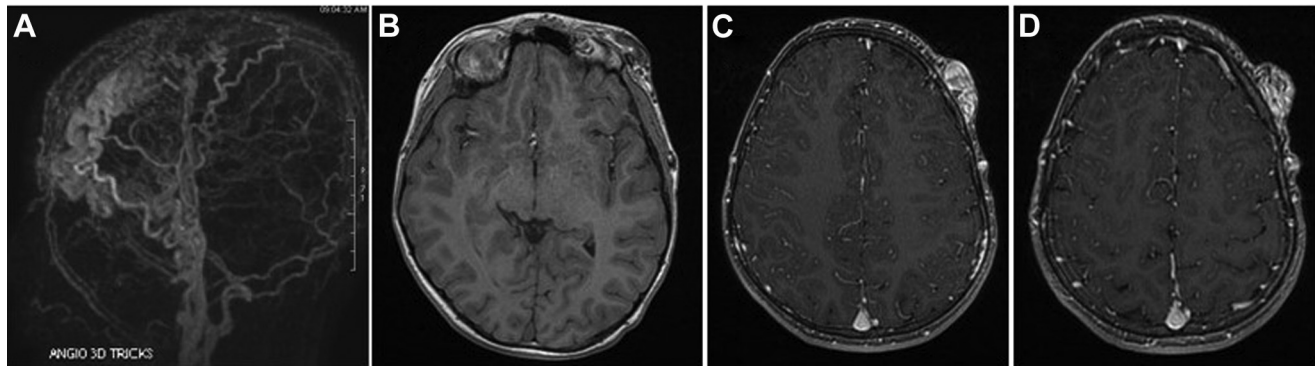


Figure 2. Magnetic resonance angiography. (A) Angioarchitecture of arteriovenous fistula with multiple afferences from the external carotid

artery. A bulk mass hypointense with flow-voids in the left forehead (B), with contrast enhancement (C, D) in T1-weighted magnetic resonance.

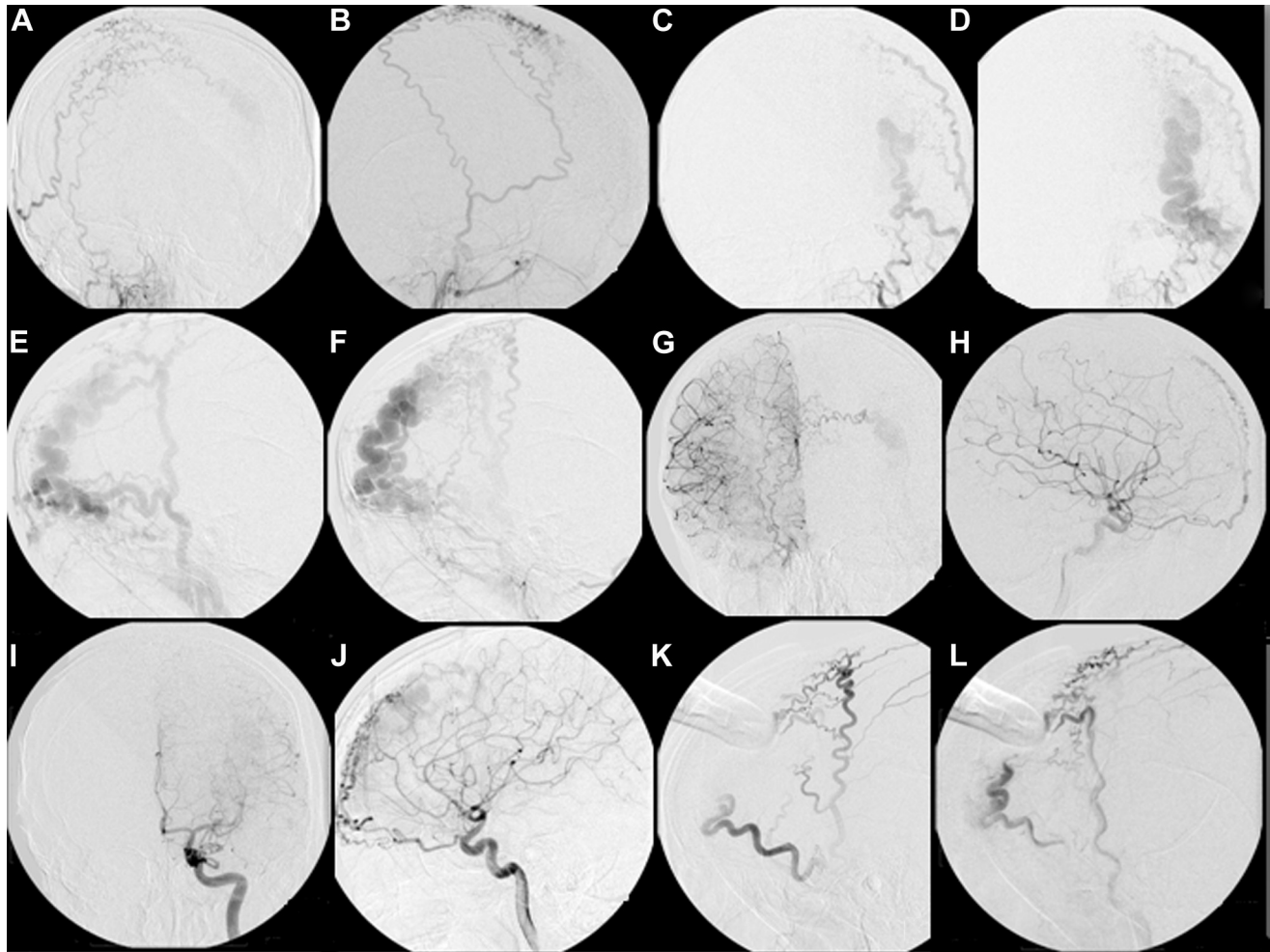


Figure 3. Digital subtraction angiography. (A) Right external carotid artery (ECA) in anteroposterior (AP) view. (B) Right ECA in perfil (Per) view. (C) Left ECA AP (early arterial phase). (D) Left ECA AP (late arterial phase). (E)

Left ECA Per (early arterial phase). (F) Left ECA Per (late arterial phase). (G) Right internal carotid artery (ICA) AP. (H) Right ICA Per. (I) Left ICA AP. (J) Left ICA Per. (K, L) Arteriovenous fistula under finger pressure.

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