Perimesencephalic Subarachnoid Hemorrhage Etiology

- Benign versus sinister aetiologies underlying basal cistern subarachnoid haemorrhage: a case series
- Association of SSRI and SNRI use with incident hyponatremia after subarachnoid hemorrhage
- Two Cases of Subarachnoid Hemorrhage with Microaneurysmal Changes and Spontaneous Disappearance in the Basilar Artery
- Visual inspection versus spectrophotometry for xanthochromia detection in patients with sudden onset severe headache-A diagnostic accuracy study
- Nonaneurysmal Perimesencephalic Subarachnoid Hemorrhage Associated with an Anomalous Anastomotic Cisternal Vein
- Perimesencephalic subarachnoid hemorrhage as a rare delayed complication of radiation therapy in a patient with parotid basaloid squamous cell carcinoma
- Risk stratification of delayed causative aneurysm detection and long-term outcome in angiographically negative spontaneous subarachnoid haemorrhage
- Aneurysmal subarachnoid haemorrhage: Volumetric quantification of the blood distribution pattern to accurately predict the ruptured aneurysm location

---

95% of cases of perimesencephalic subarachnoid hemorrhage have a normal cerebral angiography and the source of bleeding is not identified; the cause is thought to be a venous bleed. This is referred to as non-aneurysmal perimesencephalic subarachnoid hemorrhage.

Rare causes include arteriovenous malformation, dural arteriovenous fistula, trauma and vascular tumours.

The causes of Perimesencephalic Subarachnoid Hemorrhage suggest a venous or capillary rupture at the level of the tentorial notch [1) 2) 3)]

The other 5% of cases are due to a vertebrobasilar aneurysm and the prognosis is worse [4) 5)] Rare causes include arteriovenous malformation, dural arteriovenous fistula, trauma and vascular tumors [6)].

The vast majority of perimesencephalic subarachnoid hemorrhage cases are reported as negative-finding etiologies. Recently, high-resolution images allowed us to overcome the previous difficulty of finding the source of bleeding, which underlies the concept of a “negative finding”.

A venous etiology, hidden behind the tip of the basilar artery; namely, the lateral pontine vein.

Hafez et al highlight this type of aneurysm as a candidate source of perimesencephalic hemorrhage. This case may change our way of dealing with what we have termed a negative finding of subarachnoid hemorrhage [7)].

1)
Schwartz TH, Yoon SS, Cutruzzola FW, Goodman RR. Third ventriculostomy: Post-operative ventricular size and outcome. Minim Invasive Neurosurg. 1996;39:122–9.

2)

van Gijn J, van Dongen KJ, Vermeulen M, Hijdra A. Perimesencephalic hemorrhage: A nonaneurysmal and benign form of subarachnoid hemorrhage. Neurology. 1985;35:493–7.

3)

Rinkel GJ, Wijdicks EF, Vermeulen M, Hageman LM, Tans JT, van Gijn J. Outcome in perimesencephalic (nonaneurysmal) subarachnoid hemorrhage: A follow-up study in 37 patients. Neurology. 1990;40:1130–2.

4)

van der Schaaf IC, Velthuis BK, Gouw A, Rinkel GJ. Venous drainage in perimesencephalic hemorrhage. Stroke. 2004 Jul;35(7):1614-8. doi: 10.1161/01.STR.0000131657.08655.ce. Epub 2004 May 27. PMID: 15166390.

5)

Velthuis B, Rinkel G, Ramos L et-al. Stroke. 1999;30 (5): . doi:10.1161/01.STR.30.5.1103

6)

Marder CP, Narla V, Fink JR, Tozer Fink KR. Subarachnoid hemorrhage: beyond aneurysms. AJR Am J Roentgenol. 2014 Jan;202(1):25-37. doi: 10.2214/AJR.12.9749. PMID: 24370126.

7)

Hafez A, Numminen J, Rahul R, Järveläinen J, Niemelä M. Perimesencephalic subarachnoid hemorrhage with a positive angiographic finding: case report and review of the literature. Acta Neurochir (Wien). 2016 Jun;158(6):1045-9. doi: 10.1007/s00701-016-2801-9. Epub 2016 Apr 22. PubMed PMID: 27106848.