

Vein of Galen Aneurysmal Malformation

Sunil Munakomi^{*}

Department of Neurosurgery, College of Medical Sciences, Nepal

*Corresponding author: Sunil Munakomi, Department of Neurosurgery, College of Medical Sciences, Nepal, Tel: +97756524203; E-mail: sunilmunakomi@gmail.com

Rec date: August 12, 2015; Acc date: September 7, 2015; Pub date: September 11, 2015

Copyright: © 2015 Munakomi S. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Short Commentary

Vein of Galen aneurysmal malformation is because of the persistence of the proximal aspect of Median prosencephalic vein of Markowski that normally drains the primitive choroidal vessels [1,2]. It normally obliterates within 11 week of gestation.

| Classificatio n | Distinct entity | | |
|---------------------|---|--|--|
| Туре 1 | Feeders from pericallosal and the P3 branches | | |
| Type 2 | Feeders from the thalamoperforators and the P1 and P2 branches | | |
| Туре 3 | Type 1 and type 2 | | |
| Type 4A 4B 4C | Associated with thalamic AVM Associated with mesencephalic AVM Associated with mesodiencephalic and the cisternal AVM | | |

Table 1: Yasargil classification.

| Parameters | Scores | | |
|---------------------|---------------------|--|--|
| | 0 | 1 | |
| Arterial feeders | | Feeders from P1,P2,thalamoperforators,choroidal or basilar | |
| Clinical symptoms | No heart failure | Heart failure | |
| Age | >5 months | <5 months | |

Table 2: Mortazavi scoring system.

There is presence of falcine sinus leading to the characteristic accessory torcula appearance in the cerebral venous imaging studies. This differentiates it from the vein of Galen aneurysmal dilatation wherein there is presence of a normal draining straight sinus. There may be associated other venous anomalies like the stenosed, fenestrated, duplicated or absent straight sinus owing to the absence of cavernous sinus drainage prior to six months of age [3].

Clinically patients' present either with features of cardiac failure due to high shunt in cases of choroidal variant or symptoms of raised intracranial pressure due to hydrocephalus in mural variants [4]. There has been various classification used but most commonly applied is the Yasargil classification [5] (Table 1). Bicetre scoring [6] has been adopted to evaluate and assess the overall general status of the patients with VOGM.

Currently this condition can be managed either via open surgical [5], embolisation [7] or via the gamma knife modalities [8]. Most opt for the embolisation either via the arterial or the transvenous route. Recently Mortazavi et al have described a new scoring system so as to formulate a correct management strategy for this entity [3] (Tables 2 and 3).

| Points | Treatment |
|--------|---|
| 0-1 | Endovascular in 1 stage (no urgency) |
| 2 | Endovascular in stages (urgency) |
| 3 | Consider endovascular or palliation in stages |

Table 3: Proposed treatment algorithm based on the scoring system.

References

- Markowski J (1921) Entwicklung der Sinus durae matris und der Hirnvenen des Menschen. Bulletin International de l'Acad¬ émie des Sciences et des Lettres. Classe des Sciences Mathé- matiques et Naturelles. Serie B: Sciences Naturelles 2: 1-269.
- 2. Raybaud CA, Strother CM, Hald JK (1989) Aneurysms of the vein of Galen: embryonic considerations and anatomical features relating to the pathogenesis of the malformation. Neuroradiology 31: 109-128.
- Mortazavi MM, Griessenauer CJ, Foreman P, Bavarsad Shahripour R, Shoja MM, et al. (2013) Vein of Galen aneurysmal malformations: critical analysis of the literature with proposal of a new classification system. J Neurosurg Pediatr 3: 293-306.
- Berenstein A, Niimi Y (2011) Vein of Galen aneurysmal malformation, in Winn HR. (6thedn), Youmans Neurological Surgery, Elsevier/Saunders, Philadelphia.
- Yasargil MG (1988) AVM of vein of Galen region, in: Microneurosurgery: AVM of the Brain, Clinical Considerations, General and Special Operative Techniques, Surgical Results, Nonoperated Cases, Cavernous and Venous Angiomas, Neuroanesthesia. Stuttgart: Georg Thieme.
- 6. Lasjaunias P (1997) Vascular Diseases in Neonates, Infants and Children: Interventional Neuroradiology Management. Springer, Berlin.
- Lasjaunias PL, Chng SM, Sachet M, Alvarez H, Rodesch G, et al. (2006) The management of vein of Galen aneurysmal malformations. Neurosurgery 59: S184-194.
- 8. Payne BR, Prasad D, Steiner M, Bunge H, Steiner L (2000) Gamma surgery for vein of Galen malformations. J Neurosurg 93: 229-236.