

부뇌랑팽대 동정맥 기형의 수술에서 시야의 보존

- 증례 보고 -

주진양·안정용

= Abstract =

Surgery of Parasplenic Arteriovenous Malformation with Preservation of Vision

- A Case Report -

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Parasplenic arteriovenous malformations (AVMs) are rare vascular malformations which have distinct clinical and anatomical features. They are situated at the confluence of the hippocampus, isthmus of the cingulate gyrus and the gyrus occipitotemporalis medialis. These lesions are anterior to the calcarine sulcus and their apex extends towards the medial surface of the trigonum. Posterolaterally, these lesions are in close proximity to the visual cortex and optic radiation. The objectives in the surgery of parasplenic AVMs are complete resection of the lesions and preservation of vision. These objectives must be achieved with comprehensive understanding of the following anatomical features : 1) the deep central location of the lesions within eloquent brain tissue ; 2) the lack of cortical representation of the AVMs that requires retraction of visual cortex ; 3) deep arterial supply ; 4) deep venous drainage ; 5) juxtaposition to the choroid plexus with which arterial supply and venous drainage are shared. A 16-year-old female student presented with intraventricular hemorrhage from a right parasplenic-subtrigonal AVM. The lesion, fed by posterior cerebral artery and drained into the vein of Galen, was successfully treated by the inter-hemispheric parietooccipital approach. To avoid visual field defect a small incision was made on precuneus anterior to the calcarine sulcus. In this report, the authors describe a surgical approach with special consideration on preservation of visual field.

KEY WORDS : Parasplenic arteriovenous malformation · Surgical approach · Preservation of visual field.

서론 4 가 . 가 . 3
 (parasplenic arteriovenous ma- , , Galen
 lformation) Yasargil¹⁰⁾ ,
 (parietooccipital sulcus) (calcarine
 sulcus) (precuneus) 2)7).
 (isthmus of cingulate gyrus), ,
 (gyrus occipitotemporalis medialis)가 ,
 (trigone) .

요 례

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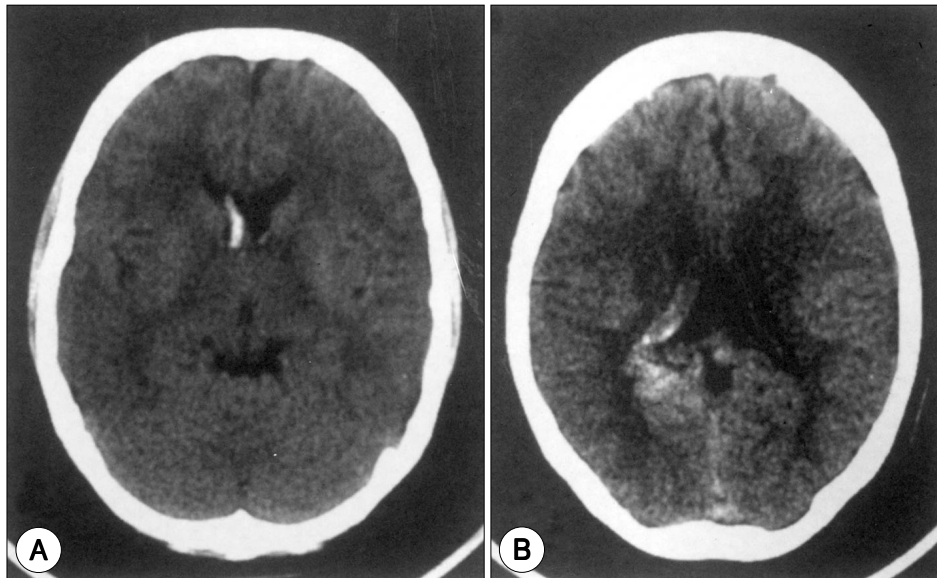


Fig. 1. Preoperative computed tomography showing hemorrhage on the frontal horn of the lateral ventricle(A) and enhanced mass lesion on the parasplenial-subtrigonal area(B).

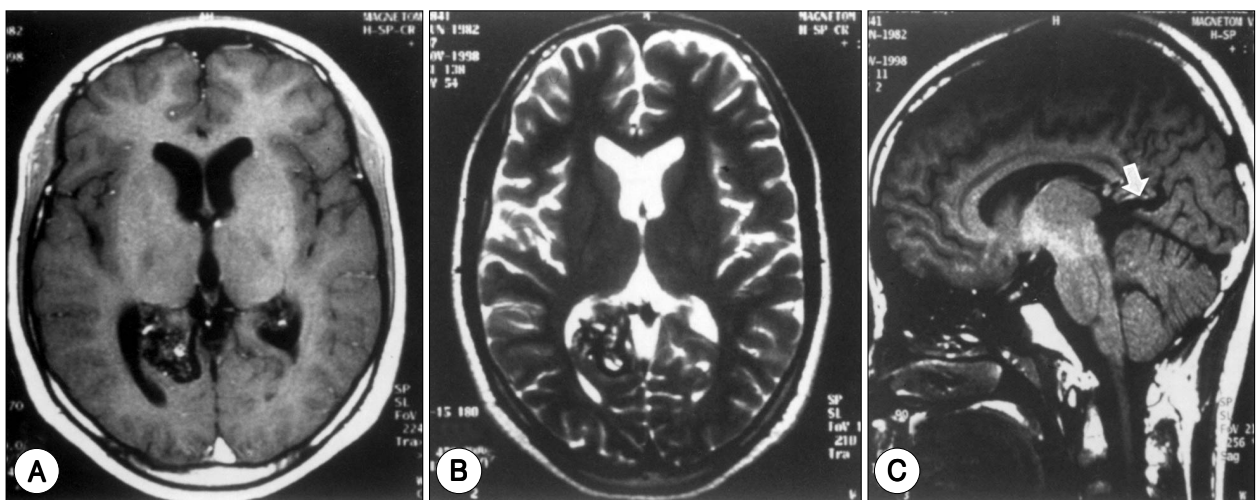


Fig. 2. T₁(A) and T₂(B) weighted magnetic resonance images revealing an arteriovenous malformation on the parasplenial-subtrigonal area. Sagittal image shows venous drainage(white arrow) toward the junction of parietooccipital and calcarine sulcus(C).

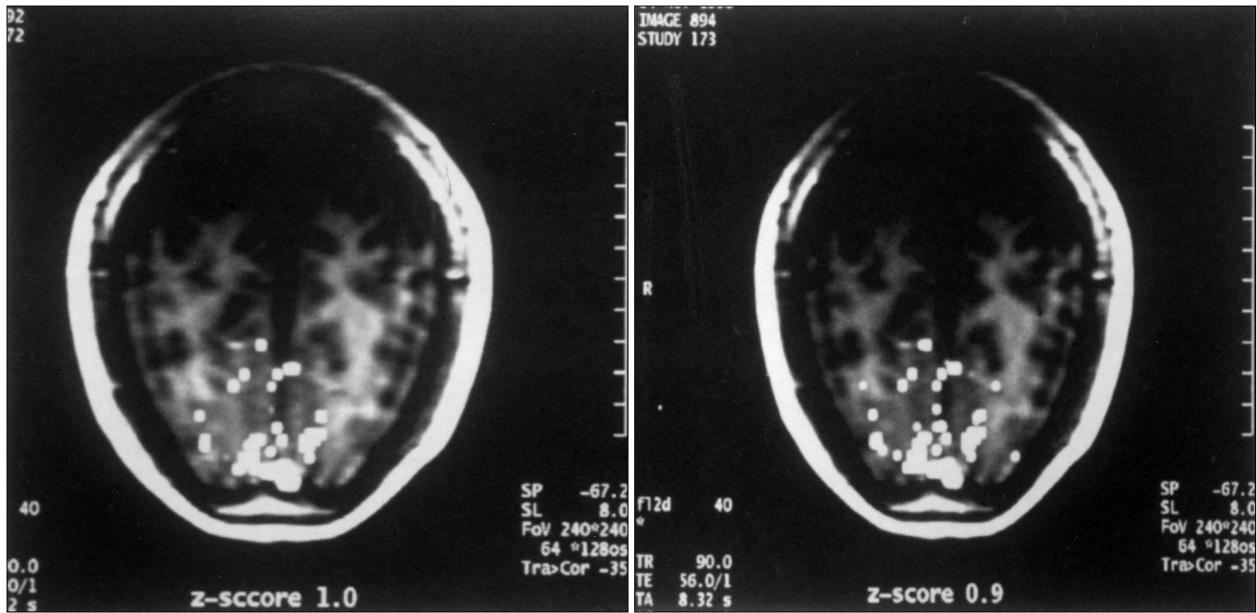


Fig. 3. Functional magnetic resonance images demonstrating equal distribution of visual cortex on bilateral occipital area.



Fig. 4. Anteroposterior(A) and lateral(B) vertebral angiograms showing an arteriovenous malformation(AVM) nidus fed by parieto-occipital branches of the right posterior cerebral artery. Venous drainage towards the vein of Galen and straight sinus(C, D). Saccular dilation on right proximal posterior cerebral artery(A) is due to local tortuosity of the vessel.

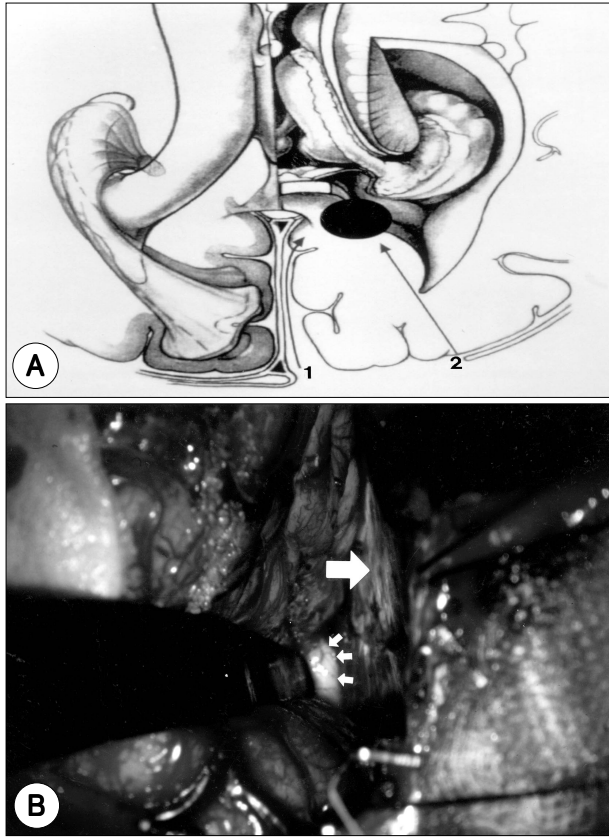


Fig. 5. Artistic drawing(A) indicating that the parietooccipital inter-hemispheric approach(arrow 1) is closer to the parasplenic area than the transcortical parietooccipital approach(arrow 2). The AVMs in parasplenic area (dark circle) are localized in a silent area from the viewpoint of the optic system and can be explored through an incision in the antero-inferior part of the cuneus. In the parietooccipital interhemispheric approach(B), a small incision was made on precuneus (small arrow) anterior to the parietooccipital and calcarine sulcus. The right occipital lobe and precuneus were retracted away from the falx(large arrow).

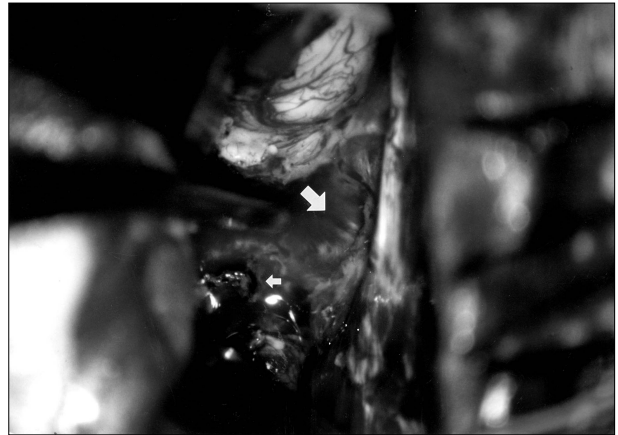


Fig. 6. Intraoperative photograph demonstrating arteriovenous malformation nidus (small arrow) with the dilated draining vein (large arrow).

(Fig. 2). T1
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(Fig. 2C).

(Fig. 3).

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Galen

Spetzler Martin IV (Fig. 4).

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(Fig. 6).

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(Fig. 8).

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Yasargil¹⁰⁾

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Fig. 7. Total removal of the AVM and normal filling of surrounding vasculature is seen on anteroposterior(A) and lateral(B) postoperative angiograms.

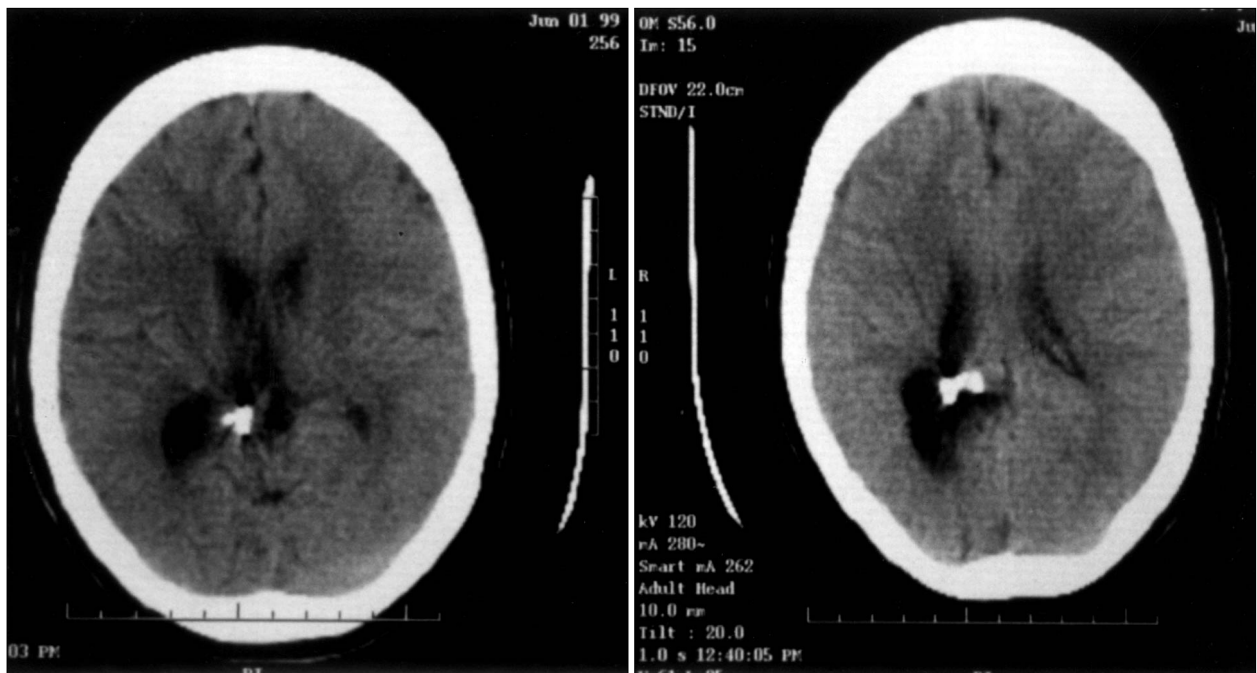


Fig. 8. Postoperative CT scan showing preservation of visual cortex.

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Galen

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