

Malignant Transformation of Unilateral Posterior Cerebral Artery Ischemic Stroke: a Case Series with Surgical Implications

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Introduction

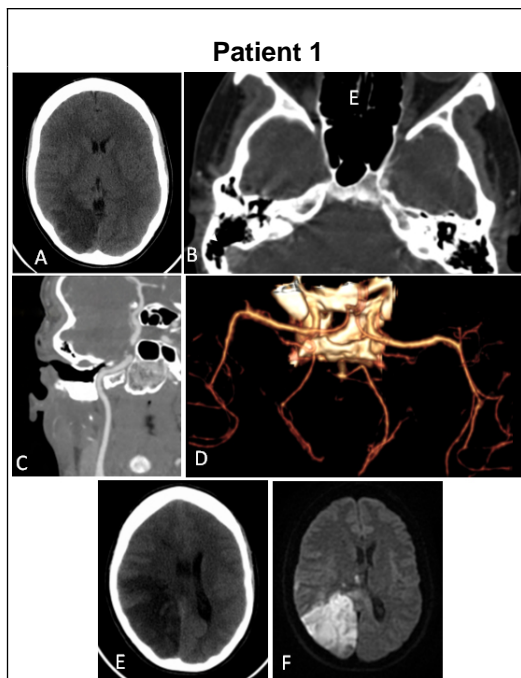
Posterior cerebral artery (PCA) infarctions are usually small in extent and are thus expected to follow a benign course [1,2,4]. Malignant unilateral PCA infarctions have not been previously reported [3].

Methods

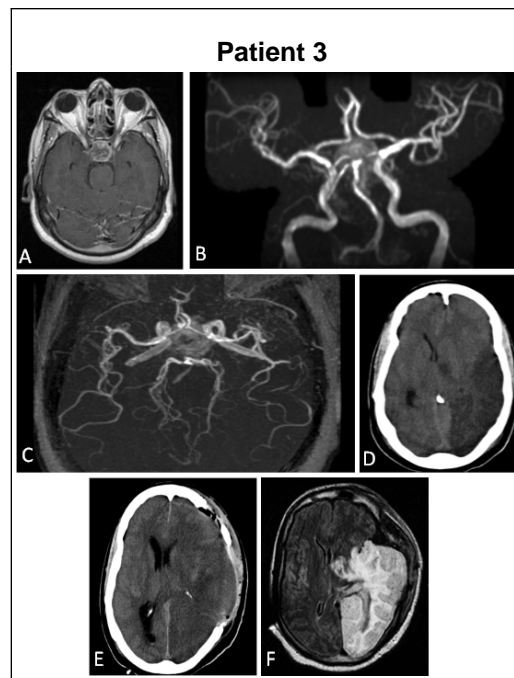
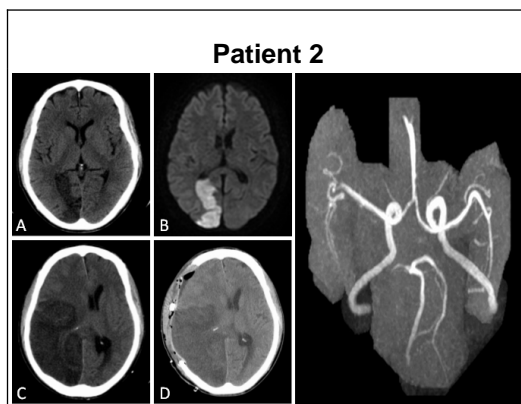
In this retrospective review, 3 patients with unilateral PCA infarction exhibited malignant progression, with cerebral edema-related mass effect, increased intracranial pressure, and transtentorial herniation.

Results

Patient 1 was managed medically using intravenous hypertonic saline and had a favorable functional outcome. When clinical signs of transtentorial herniation developed, Patients 2 and 3 underwent decompressive hemicraniectomy; both died in the acute phase from malignant intracranial hypertension. In each case, the cerebral territory supplied by the PCA was abnormally large, and PCA occlusion was accompanied by a flow-limiting lesion in the internal carotid or middle cerebral artery.



40-year-old woman with right PCA infarct. infarct enlarges 3 weeks later, 6-mm midline shift reponds to medical therapy.



Conclusions

Congenital and/or acquired variability in the distribution and extent of territory supplied by the PCA combined with vascular risk factors may lead to the rare syndrome of malignant PCA infarction [5]. Patients suffering a large PCA infarct should be followed closely for malignant conversion and be considered for early surgical decompression.

Learning Objectives

- 1) Understand the congenital variability in vascular territories supplied by cerebral vessels.
- 2) Identify risk factors for the development of malignant PCA infarction.
- 3) Increase surveillance for malignant conversion of PCA infarctions in patients with certain vascular risk factors.
- 4) Consider decompressive hemicraniectomy as a life-saving treatment in these rare clinical entities.

References

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