

Dreadful Twins: Twin Unruptured Aneurysms of Bilateral Intracranial Arteries

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ABSTRACT

Intracranial aneurysms are the most common cause of subarachnoid hemorrhage which carries a significant risk of mortality. Mirror aneurysm constitute between 5-12% of all the intracranial aneurysms. These are uncommon entities with poorly understood pathogenesis and clinical significance.

Key words: Mirror aneurysms, ophthalmoplegia, subarachnoid hemorrhage

ملخص البحث :

يعتبر تمدد الشرايين داخل الجمجمة السبب الأكثر شيوعاً ويشكل ذلك خطورة كبيرة على المريض لاحتمال الوفاة. يشكل ما يسمى Mirror Aneurysm بين 5-12% من كل توسعات الشرايين داخل الجمجمة، غير أن أهميتها السريرية والمرضية غير معروفة بالكامل

INTRODUCTION

Incidence of mirror aneurysms is 5-12% of overall intracranial aneurysms.^[1-3] Mirror aneurysms can occur in any vascular segments of intracranial arterial system, however, it predominates in middle cerebral artery followed by the posterior communicating artery. Intracranial mirror aneurysms are uncommon and their management is a neurosurgical challenge. Till date, the best therapeutic option for such cases is highly controversial and debated. We present one such case who presented to us with a new onset headache and diplopia at the age of 60 years.

CASE REPORT

A 60-year-old female presented to us with a history of the left temporal throbbing type of headache. She had associated

history of horizontal, binocular diplopia, and ptosis of 2 months' duration. No history of fever or weight loss was present. Her past history revealed occasional headaches for the last 3 years, which were of the throbbing type with no association of nausea, vomiting, tinnitus or transient visual obscurations. She ignored these symptoms due to their responsiveness to analgesics and absence of any hindrance to her daily activities. The patient did not have any history of hypertension, prior central nervous system(CNS) anomalies or vascular malformations. Her examination revealed bilateral optic disk pallor and her visual acuity was 20/40 bilaterally: Visual fields were normal by confrontation method and extra-ocular muscle examination revealed bilateral external ophthalmoplegia: Bilateral involvement of medial rectus, superior rectus, inferior rectus, inferior oblique, and superior oblique. Lateral rectus was unilaterally involved on the right side [Figure 1].

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Figure 1: Bilateral incomplete ophthalmoplegia (right>left)



Figure 2: Cranial magnetic resonance imaging showing large lobulated mirror aneurysms arising from supraclinoid parts of bilateral intracranial arteries.

The rest of the CNS examination was normal.

Her T1 and T2 axial images of magnetic resonance imaging brain showed large (3.4 cm × 3 cm on right side and 3.8 cm × 3.6 cm on left side) well-defined round areas of signal void in bilateral parasellar location. Mass effect was seen over the anteromedial temporal lobes and bilateral optic nerves. Magnetic resonance angiography time-of-flight images showed bilateral giant aneurysms arising from a supraclinoid internal carotid artery (ICA) - [Figure 2]. Basilar artery did not reveal any abnormality.

DISCUSSION

Twin or mirror image aneurysms are placed bilaterally on analogous arteries. This is a rare entity constituting nearly 5% of all intracranial aneurysms.^[2] However, a large study conducted by Meissner *et al.* had nearly 12% of a mirror or twin intracranial aneurysms. This subgroup is more commonly seen in females and patients with a family history of subarachnoid hemorrhage (SAH).^[3] Mirror intracranial aneurysms commonly occur at intracranial artery bifurcation or middle cerebral arteries.^[4] The mere presence of mirror aneurysm is

not a predictor of poor outcome or SAH. In such cases also, management decisions depend upon the age of the patient, any presence of previous SAH, location and size of the aneurysms.^[2] Our patient was a female, in her sixth decade of life but had bilateral unruptured ICA aneurysms with no previous history suggestive of SAH. Due to its rarity, there is no consensus on management protocol for such patients and management options have to be formulated in individual cases. Aneurysms, which have bled, should be treated as a priority. They can be either clipped or coiled depending upon their size, site, and expertise available. Bilateral unruptured aneurysms can be either simultaneously coiled/clipped or the procedure is done in two separate stages. In our case, the patient was given an option for simultaneous clipping of the twin aneurysm, but the patient and her family denied consent to surgical intervention even after being counseled on the risk to the patient's life in the event of a rupture.

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Conflict of interest

There are no conflicts of interest.

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