Surgical management of bilateral intracranial aneurysms is difficult and especially with regards to bilateral middle cerebral artery (MCA) aneurysms, the various options of surgical treatment are, a unilateral approach, supraborital key hole method, subfrontal approach, single stage bilateral craniotomy or two stage bilateral craniotomy. We report a case of bilateral MCA aneurysm which was managed by single stage bilateral pterional craniotomy. As seen in this case report the patient was discharged as for a unilateral approach without any complications. Although challenging single stage bilateral clipping is possible in developing countries where increased cost can be an important deterrent in medical treatment. This approach should thus be considered in suitable cases of bilateral MCA aneurysm.

Key Words: aneurysm, single stage, bilateral clipping, middle cerebral artery

Single Stage Clipping of Bilateral Middle Cerebral Aneurysms

Surgical management of bilateral intracranial aneurysms is difficult. In the case of bilateral Middle Cerebral Artery (MCA) aneurysms, the various options of surgical treatment are, a unilateral approach, supraorbital key hole method, subfrontal approach, single stage bilateral craniotomy or two stage bilateral craniotomy. We report a case of bilateral MCA aneurysm which was managed by single stage bilateral pterional craniotomy. As seen in this case report the patient was discharged as for a unilateral approach without any complications. Although challenging single stage bilateral clipping is possible in developing countries where increased cost can be an important deterrent in medical treatment. This approach should thus be considered in suitable cases of bilateral MCA aneurysm.

Key Words: aneurysm, single stage, bilateral clipping, middle cerebral artery

Single stage bilateral craniotomy and microsurgical clipping of the aneurysms was done on the second day of ictus. Intraoperatively the ruptured left side was operated via the pterional approach followed by the opposite site. Separate scalp incision was made on either side. The computed tomogram (CT) showed features of acute subarachnoid hemorrhage of Fisher grade II/ Hunt and Hess grade 1. Urgent CT angiography was done which revealed bilateral mirror MCA aneurysms (Figure 1). The presence of a nipple and the pattern of SAH in left Sylvian fissure suggested that the left was the ruptured aneurysm. Rest of the hematological and biochemical parameters was normal.

Case Report

A 50-year-old male presented to the emergency room with sudden spontaneous severe headache, neck pain and few episodes of vomiting for one day. On examination he was conscious with Glasgow Coma Score (GCS) of 15, nuchal rigidity and no motor deficits. The computed tomogram (CT) showed features of acute subarachnoid hemorrhage of Fisher grade II/ Hunt and Hess grade 1. Urgent CT angiography was done which revealed bilateral mirror MCA aneurysms (Figure 1). The presence of a nipple and the pattern of SAH in left Sylvian fissure suggested that the left was the ruptured aneurysm. Rest of the hematological and biochemical parameters was normal.

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Discussion

The incidence of bilateral MCA aneurysm is around 1.18%. Surgical management of multiple intracranial aneurysms may be difficult especially if located bilaterally. In the case of bilateral MCA aneurysms, the various options of surgical treatment are, a unilateral approach, supraorbital key hole method, subfrontal approach, single stage bilateral craniotomy or two stage bilateral craniotomy. Aneurysms located at the ICA bifurcation or paracnoid segment, anterior choroidal, posterior communicating and some aneurysm of the MCA bifurcation on the contralateral site can be clipped via the single unilateral approach although this procedure is best left for those with extensive experience in aneurysm surgery. The supraorbital key hole can also be used to manage bilateral MCA aneurysm although brain swelling and complex configuration of the opposite aneurysm may lead to difficulties.

Single stage surgery has the advantages of shorter hospital stay, reduced cost in terms of bed charge, investigations and operative expenditure which can be up to 23% lower. As seen in this case report the patient was discharged as for a unilateral approach without any complications. Good clinical grade and presence of an uncomplicated anatomy will favor single stage surgery. Although challenging single stage bilateral clipping is possible in developing countries where increased cost can be an important deterrent in medical treatment. This approach should thus be considered in suitable cases of bilateral MCA aneurysm in all centers dealing with aneurysm surgery.

Conflict of interest: None

References