DOI: 10.7860/JCDR/2014/7362.4194

Rare Cause of Recurrent Stroke: Bilateral Cervical Internal Carotid Artery Aneurysm

HANISH BANSAL[1], ASHWANI KUMAR CHAUDHARY[2], BIRINDER PAUL[3]

Keywords: Stroke, Aneurysm, Saccular

INTRODUCTION

Bilateral symptomatic saccular aneurysms in cervical part of internal carotid artery are exceptionally rare and they are therapeutic challenges.

CASE

A 59-year-old male presented to us with history of bilateral recurrent arterial embolic strokes. Patient had right MCA territory infarct with left hemiparesis around eight months back and left MCA territory infarct with right hemiparesis eight days back, for which he had undergone thrombolysis with Alteplase in some private hospital. At time of his admission in our institute, patient was fully conscious, with no focal neurological deficit. CT cerebral angiography revealed saccular aneurysm in cervical part of bilateral internal carotid artery [Table/Fig-1].

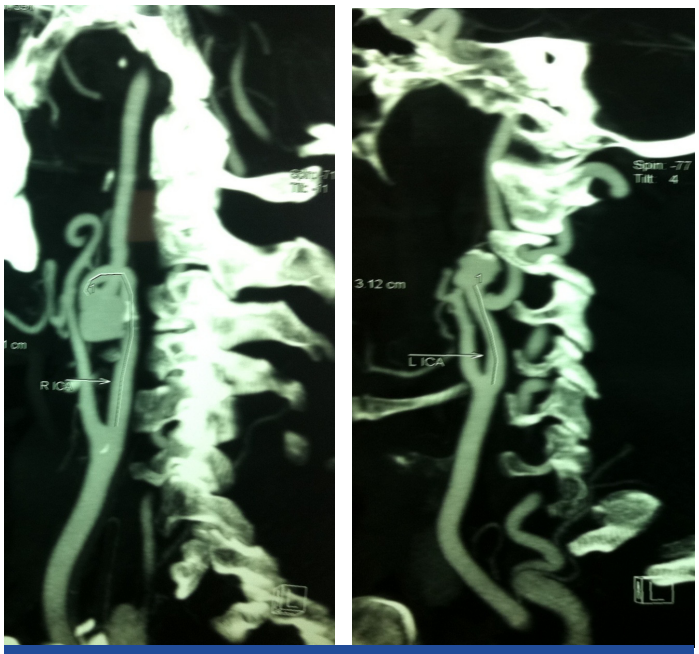
On right side, around 1.4×1.5 cms sized, wide neck saccular aneurysm was present, which arose 4.2 cms distal to origin of internal carotid artery [Table/Fig-2a]. On left side, around 0.7 × 1 cm sized saccular aneurysm was found to arise from proximal part of internal carotid artery, around 2.8 cms distal to its origin [Table/Fig-2b].

DISCUSSION

Aneurysms of the extracranial internal carotid artery are rare, which account for only 0.1–2% of all aneurysms and about 4% of all peripheral aneurysms [1]. The most frequent site of occurrence of carotid artery aneurysms is common carotid artery, particularly at its bifurcation [2]. Majority of these are unilateral and bilateral presentations of aneurysms of internal carotid artery are exceptionally rare. The aetiology of carotid aneurysms at this age are atherosclerosis, dysplasia, trauma, infections, dissections, congenital defects and irradiation arteritis. Saccular aneurysms are mainly unilateral and they are located in midsegment of internal carotid artery. Bilateral saccular aneurysms which occur in cervical part of internal carotid artery are exceptionally rare and only few cases have been reported, to best of our knowledge. Most of the cases are asymptomatic, they are diagnosed incidentally and they can present as parapharyngeal pulsating masses. They may be rarely thrombosed and they may thereby cause embolizations and ischaemic events, which range from cerebral transient ischaemic attacks (TIA) or large ischaemic strokes. Haemorrhages caused by rupture of aneurysms are rare, but they may occur especially in mycotic aneurysms and may lead to death.

Digital subtraction angiography (DSA) is the gold standard investigation. Although the literature on the natural history of bilateral involvement remains limited, because of its rarity, surgical treatment is mandatory in most of the cases, as conservative management of extracranial internal carotid aneurysms results in a mortality rate of nearly 71% [3]. Conservative treatment, based on anticoagulation and antiplatelet agents, is considered in cases of very small or asymptomatic aneurysms which are located in the most distal section, near the base of the skull, due to the high surgical risk which is involved. Resection of the aneurysm and it's replacement by vein or prosthetic graft is the preferred method of treatment, which has shown good results. The endovascular option, using

[Table/Fig-1]: CT angiography depicting saccular aneurysm in bilateral internal carotid artery



[Table/Fig-2a]: Aneurysm in right internal carotid artery
[Table/Fig-2b]: Aneurysm in left internal carotid artery

a covered stent for the exclusion of the aneurysm, should be considered in cases of extensive aneurysms with a high location and a difficult surgical approach, or in patients with co-morbidities. Surgical treatment prevents permanent neurological deficits, with mortality rates of less than 2%.

REFERENCES

[1] Alpagut U, Ugurlucan M, Kafali E, Sayin OA, Demir T, Basaran M, et al. Aneurysm of the kinked Extracranial Internal carotid artery Case Report and Review of the Literature. *Acta Chir Belg*. 2005; 105: 407-09.
[2] Shrestha UK. Ruptured aneurysm of Extracranial carotid artery. *J Nepal Med Assoc*. 2008; 47(172): 232-4.
[3] Chittithavorn V, Rergkliang C, Chetpaophan A, Vasinanukorn P, Chowchuvech V, Chanchayanon T. Repair of Extra-Cranial Internal Carotid Artery Aneurysm with Application of Modified Carotid Shunt: A Case Report. *J Med Assoc Thai.* 2005; 88 (4).

PARTICULARS OF CONTRIBUTORS:
1. Resident, Department of Neurosurgery, DMC and H, Ludhiana, Punjab, India.
2. Profesoor, Department of Neurosurgery, DMC and H, Ludhiana, Punjab, India.
3. Associate Professor, Department of Neurology, DMC and H, Ludhiana, Punjab, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:
Dr. Ashwani Kumar Chaudhary,
10 B Udham Singh Nagar, Civil Lines, Ludhiana, Punjab, India.
Phone: 09915024500, E-mail: y2khanish@rediffmail.com

FINANCIAL OR OTHER COMPETING INTERESTS: None.

Date of Submission: **Aug 12, 2013**
Date of Peer Review: **Oct 19, 2013**
Date of Acceptance: **Jan 23, 2014**
Date of Publishing: **Mar 15, 2014**