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Case Report

Large and tortuous – internal carotid artery aneurysm: endovascular repair

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ABSTRACT

Extracranial internal carotid artery (ICA) aneurysms are a rare entity. There are very few cases reported in the world literature and most of these have been managed by open surgical techniques, which is the gold standard. Endovascular repair of these aneurysms is now an emerging reality in the modern world. We describe our experience of endovascular repair of a large extracranial internal carotid artery aneurysm which was associated with a highly tortuous and kinked artery and was reaching upto the base of skull. We faced several intraoperative challenges which we would like to share and eventually succeeded. We are happy to report an excellent patient outcome with no morbidity and strongly recommend such techniques for the repair of these aneurysms. But more cases need to be done and more data needs to be acquired as regards long term follow up before we can conclusively state that endovascular option for such aneurysms is the preferred modality.

1. Introduction

Most of the internal carotid artery aneurysms are found to be intracranial; the extracranial ones are a rare entity.[1,2] Not many cases have been reported in the world literature over the last three decades. They usually present with a pulsatile neck mass and symptoms of local compression such as throat pain, hoarseness, dysphagia and ear pain. If left untreated, they are potentially dangerous and may be associated with embolic complications or rupture. The common causes are atherosclerosis, trauma, dissection, connective tissue disorders and infection.[3] Surgical therapy which involves excision of the aneurysm with primary repair/bypass of the internal carotid artery is the gold standard,[4] but endovascular options are slowly emerging and growing in popularity. With modern vascular surgical techniques, most of these can be repaired with a high rate of success and an acceptable rate of neurologic complications. The aim of this case report is to share our experience of treating a large extracranial ICA aneurysm with a highly tortuous and kinked ICA by endovascular means, with excellent patient outcome.

2. Case report

We report a case of a 54-year-old man, non-diabetic and non-hypertensive, who presented with a pulsatile mass in the left side of his neck below the angle of mandible. He also complained of left ear pain which was continuous, but there was

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no history of hoarseness of voice, dysphagia, transient ischemic attacks, visual disturbances or stroke. He was a non-smoker with a healthy lifestyle and was not obese. He gave no history of trauma, previous neck surgery or fever and there was no evidence of any connective tissue disorder.

Clinical examination revealed a pulsatile mass below the left angle of mandible in the anterior triangle of the neck (Fig. 1). It was 5 cm in size, firm in consistency and was not freely mobile. It was not possible to reach the upper border of the swelling. There was no facial swelling, cranial nerve examination including gag reflex and palatal movements were normal.

Duplex ultrasound was done and a highly tortuous internal carotid artery was seen giving rise to a large aneurysm about 5 cm in size. The aneurysm was partially thrombosed (Fig. 2). Computed tomography (CT) angiography was done which delineated the extremely tortuous and kinked course of the proximal internal carotid artery (ICA) and a spherical aneurysm sitting on it, which was extending almost to the base of skull. The ostium of the distal ICA arising from the cranial end of the aneurysm was positioned at a difficult angle. The distal extent of the ICA and the intracranial vessels were normal. The contralateral carotid system was normal with no evidence of a second aneurysm (Figs. 3 and 4).

We decided to treat this large aneurysm by endovascular repair using a covered stent. The main challenge would be to

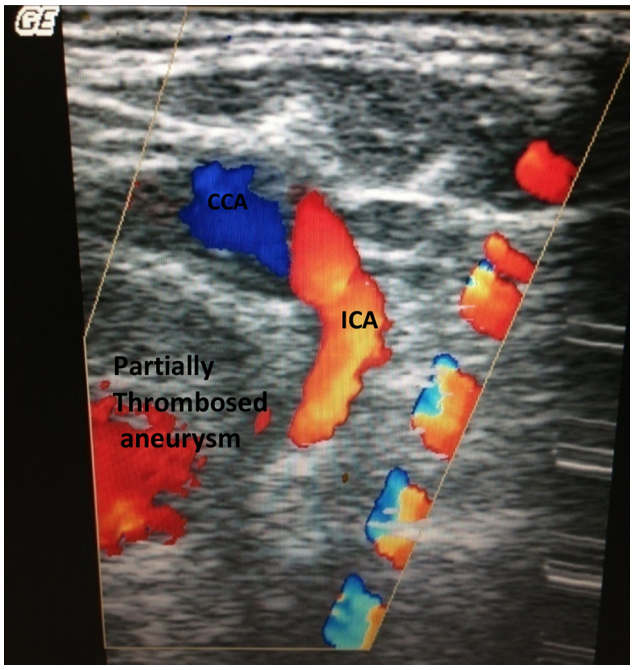

Fig. 2 – Duplex ultrasound image of the partially thrombosed aneurysm from left ICA.

Fig. 1 – The 54-year-old patient with a large pulsatile swelling below the angle of left mandible.

Fig. 3 – CT angiographic image of large left ICA aneurysm with highly tortuous and kinked ICA proximal and distal to the lesion.