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RESEARCH ARTICLE

A CASE OF ATAXIC HEMI PARESIS TREATED BY SUCCESSFUL SUBCLAVIAN ARTERY STENTING

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ABSTRACT

Subclavian steal syndrome is a form of peripheral artery disease which may be a marker of underlying atherosclerotic disease. It can manifest as symptomatic ischemia affecting the upper extremities, and in some cases the brain. The condition still remains under diagnosed mainly in elderly people. Here we had a 84 year male who presented with neurological disturbances and feeble pulses of left hand. On evaluation he was found to have neurological deficits with a significant narrowing at proximal left subclavian artery. He was successfully treated with Peripheral angioplasty with stent and got symptomatic relief. His ataxic symptoms improved more than the motor weakness at a month of follow up. This case high lightens that prompt intervention for a significant Subclavian artery stenosis would benefit in a manner similar to that treating the carotid artery stenosis by stenting.

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INTRODUCTION

A 84-year-old man with hypertension, hypercholesterolemia presented with weakness of left hand and leg for, dizziness and episodes of syncope for the last 20 days to medical outpatient department. On examination there is partial motor weakness and involvement of gait and posture. There was difference in blood pressure 45–50 mmHg between both arms, as well as barely discernible radial, ulnar and brachial arterial pulses on the left upper limb. This prompted color duplex which revealed left subclavian artery stenosis of 75%, retrograde flow in his left vertebral artery (subclavian-vertebral steal). Further investigation with Computer Tomography (CT) Scan of upper limbs showed narrowing of proximal left subclavian artery 7 mm from origin. (Figure 1) Selective catheterization of the origin of the left subclavian artery and angiography confirmed occlusion of the artery (Figure 2). Clinical neurologic evaluation and brain computed tomography (CT) scan reveal small infarcts in cerebellar hemispheres. He was taken up for elective four vessel angiography and coronary angiography which have revealed Obstructive coronary artery disease of single vessel, major obtuse marginal and significant obstruction at proximal left subclavian artery.

Figure 1. CT angiographic reconstruction image of subclavian arteries taken selectively. Note the narrowing of the proximal left subclavian artery > 90%

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Figure 2 Angiography before the stent, showing the Proximal Left Subclavian artery narrowing. Also note the long atherosclerotic disease in whole proximal part of subclavian artery

Figure 3. Image shown is the Stent Expansion 7mm x 75mm INVATEC SCUBA

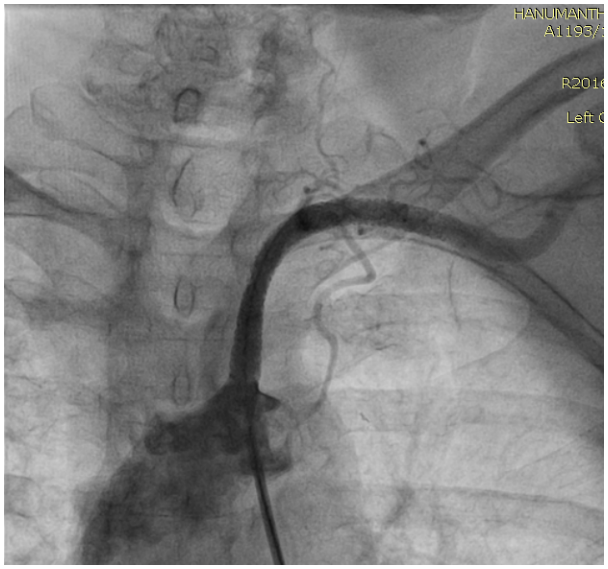

Figure 4. Angiography showing the Post Stenting Brisk flow into Left subclavian artery

We went ahead with percutaneous tranluminal angioplasty (PTA) of Subclavian artery immediately. First the left subclavian artery is hooked with usual diagnostic 6 French (6F) Judkins Right (JR) Catheter, then exchanged to 8F JR guide over a Super stiff wire. The lesion is directly stented with a 7 mm x 75 mm INVATEC SCUBA (Medtronic) (Figure 3). Post dilatation was done with a 7 mm BARD peripheral balloon at 10 atmospheres. Post stent flow into the subclavian artery was brisk and satisfactory (Figure 4). After the procedure the patient improved clinically and his pulses came up bounding. He was discharged on anti platelets and moderate dose statin medications and also anti-Hypertensive. On follow up after a month he was free of vertigo and giddiness but had some weakness in limbs. We need to follow him for few more months for improvement to be seen.

Conclusion

Patients with aortic branch occlusive disease represent a population at high risk (Osiro *et al*., 2012) for the development of hemodynamic and embolic complications. It is associated with an increased risk of mortality due to ischemic complications and associated cardiovascular risks. Strong clinical suspicion and timely diagnosis can help prevent grave outcomes from these aortic branch occlusive diseases. Inflow obstruction of the subclavian poses significant risks since cerebral and upper limb arterial blood supply depends on collateral networks which may not suffice in the presence of increased demand, promoting the appearance of neurologic deficits of varying degrees. The mere presence of the stenotic lesion is known as subclavian steal and is usually detected as an incidental finding. When accompanied with symptoms of ischemia it is known as subclavian steal syndrome (Pollard *et al*., 1998). Atherosclerosis remains the most common cause of this syndrome. SSS is more commonly seen on the left side because the acute origin of left subclavian artery makes it prone to increased turbulence and atherosclerosis (Kesteloot and Vanhoute, 1963). A variety of other conditions associated with significant stenosis of subclavian artery include Takayasu Arteritis, iatrogenic (postsurgical repair of aorta and post coronary artery bypass graft), and congenital anomalies Arend *et al*.,1990; Edwin and Mamorare, 2010). Clinical presentation ranges from asymptomatic stenosis to more ominous forms of vascular compromise and subclavian steal syndrome manifesting with transient cerebral ischemia and ischemic arm symptoms (Reivich *et al*., 1961). It was first described in 1960 with its association with neurological symptoms. Fisher coined the term "subclavian steal" for the first time in his editorial (Contorni, 1960; Fisher, 1961). All patients with discrepant bilateral blood pressures or a diminished, weakened radial pulse unilaterally should have the diagnosis of subclavian steal considered during their evaluation. In addition, patients with vertebro-basilar symptoms should have diagnosis of subclavian steal ruled out with Doppler ultrasonography and Angiography. Some studies proposed that presence of a systolic pressure gradient > 15 mmHg between the 2 arms has significant diagnostic and prognostic value (Aboyans *et al*., 2007). Atypical presentations with dizziness and stroke symptoms as in our case are more likely to miss subclavian stenosis if not appropriately considered. We present this case to raise the index of suspicion for timely diagnosis of this condition, which

can be completely cured by minimally invasive techniques when recognized early. We also demonstrated that successful stenting of a significant subclavian stenosis will alleviate the symptoms of vascular and neurological systems.

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Conflict of interest

On behalf of all the authors, I tell that have no conflict of interest and completely transfer copyrights to the journal.

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