

Atypical Presentations in Patients with Unilateral and Bilateral Subclavian Artery Stenosis

Case Presentation 1

- 77-year-old woman with a history of heart failure, hypertension, coronary artery disease, peripheral artery disease and hyperlipidemia with multiple admissions for respiratory failure due to pulmonary edema presented to the hospital for sudden onset of dyspnea with severe respiratory distress
- The oxygen saturation and blood pressure (BP) in the left arm were 60% and 100/63 mmHg respectively
- Patient's respiratory distress persisted despite furosemide and continuous positive inspiratory pressure (CPAP)
- The repeated BP showed right arm BP (220s/120s mmHg) and left arm (140s/80s mmHg)
- Review of chest CT angiogram to assess for pulmonary embolism showed extensive atherosclerosis with occlusion of the proximal left subclavian artery (Figure 1)
- Intravenous nitroglycerin was initiated along with the CPAP and furosemide
- Patient had a rapid improvement in symptoms and was discharged on losartan, metoprolol, and furosemide



Figure 1: Sagittal view from chest CTA showing extensive, obstructive atherosclerosis of the proximal left subclavian artery (arrow)

- Subclavian artery stenosis (SAS) is a type of upper extremity peripheral artery disease most commonly due to atherosclerosis
- The prevalence of SAS ranges from 2% to 7%
- Most of the cases of SAS are unilateral while bilateral SAS is very rare (<0.1%)</p>
- Undiagnosed SAS can lead to unnecessary admissions for advanced evaluation and treatment of patient hemodynamics in the Intensive Care Unit (ICU), resource utilization, prolonged hospital stays and increased costs due to pseudo shock or recurrent decompensated heart failure
- We present two atypical presentations in patients with SAS
- The diagnosis of SAS is important to reduce cardio-cerebrovascular complications
- Careful blood pressure assessment in all extremities should be considered in all patients with suspected SAS with follow up confirmatory study
- The initial imaging study for suspected SAS is duplex ultrasound. Computed tomography angiography (CTA) or magnetic resonance angiography (MRA) can be used in patients with abnormal or inconclusive ultrasound study
- The management of SAS includes risk factors modification including smoking cessation, regular physical exercise, maintaining healthy diet and weight, control of hypertension, diabetes mellitus and dyslipidemia
- Revascularization with endovascular therapies or surgery can be considered in symptomatic or selected asymptomatic patients
- In conclusion, in patients with SAS, it is important to educate the patient and communicate to the care team which limb to use for accurate blood pressure monitoring, and referral for arterial revascularization of SAS is recommended for symptomatic patients

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Introduction

Symptoms range from asymptomatic to arm claudication, paresthesia, pain

Discussion

References

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Case Presentation 2

 61-year-old woman with history of aortic stenosis, coronary artery disease, diabetes mellitus type 2, hypertension, hyperlipidemia, and active smoking that presented to the hospital for hypotension

Patient was admitted to ICU for possible distributive shock and started on antibiotics and norepinephrine

Due to apparent persistence of shock contrasted with an improved, non-toxic appearance of the patient, a search for error in hemodynamic data was undertaken

 Blood pressure was assessed in all four extremities with the discovery of significantly elevated blood pressure in both lower extremities

 Bilateral upper extremity arterial Doppler ultrasound confirmed severe bilateral subclavian artery stenosis (Figure 2)

 IV vasopressor was weaned off using lower extremities blood pressure readings and was discharged in a stable condition and referred for subclavian artery revascularization



Figure 2: Elevated velocities in bilateral proximal subclavian arteries with parvus tardus waveforms distally consistent with significant subclavian arterial stenosis bilaterally





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