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Original Research Paper

Internal Medicine

COARCTATION OF AORTA IN A 33 YEARS-OLD UNCONTROLLED HYPERTENSIVE FEMALE PATIENT – A CASE REPORT

Siddhant Kumar Mekala	Post graduate student, SVS Medical College, Mahabubnagar, Telangana, India.
Nishant Rao T	Professor, SVS Medical College, Mahabubnagar, Telangana, India.
M.G. Umesh Babu	Professor, SVS Medical College, Mahabubnagar, Telangana, India.
Venkateswarlu N*	Professor and HOD, SVS Medical College, Mahbubnagar, Telangana State, India. *Corresponding Author

ABSTRACT We report a 33-year-female patient of hypertension detected at the age of 19 year. Her blood pressure was not well controlled. The case was investigated for secondary hypertension. CT Thoracic and Abdominal aorta Angiogram of the present case showing the narrowing in the thoracic aorta extending at the level of T8 to T10 vertebral body level for the length of 7.5cm. Reconstructed CT of the case showed multiple tortuous collaterals between the branches of internal mammary artery and external iliac artery and between axillary and intercostal artery. Relevant history was reviewed and discussed.

KEYWORDS : Hypertension, Coarctation of Aorta, CT scan of thorax and abdomen

INTRODUCTION

Coarctation of the aorta (CoA) is a narrowing of the aorta located frequently near the ligamentum arteriosum, a remnant of fetal circulation between the aorta and the pulmonary trunk distal to the left origin of the subclavian artery. In a population-based studies using the population based-birth defects, the Centers for Disease Control and Prevention (CDC) estimated that about 4 of every 10,000 babies born had coarctation of the aorta[1]. Aortic coarctation presenting during adult life most frequently represents cases of secondary hypertension[2]. We report the case of a 33-year-old female student, diagnosed with arterial hypertension at the age of 19.

Case presentation: We report the case of a 33-year-old female student, diagnosed with arterial hypertension at the age of 19, with difficult control of blood pressure values under treatment with beta-blocker, ACE inhibitor and diuretics, who was referred to us for evaluation. There was no family history of cardiac problems or hypertension. The clinical examination showed a normal body development, Pulse was 88bpm, bilateral radial and branchial pulses were felt, while bilateral femoral arteries were feeble; popliteal, posterior tibial and dorsalis pedis arterial pulsations were not felt on both sides. BP on right arm – 174/118 mm Hg, Left arm: 150/100mm Hg. B.P. in the right lower was 134/82 mm Hg, and on left lower limb was 116/78 mm Hg. Large pulsations in the suprasternal notch, normal heart sounds. A systolic murmur was audible at the parasternal right and left area and at the paravertebral interscapular area bilaterally. Plasma renin estimated was 88.2ng/ml/hr. Normal plasma renin activity levels range from 0.25 – 5.82 ng/mL/hr. Values above this range are considered high. Aldosterone levels and Thyroid profile were Normal. ECG Showed left ventricular hypertrophy (LVH) by voltage criteria, 2-D-Echocardiography revealed a mild concentric LVH with EF 66%, and no detectable coarctation. The case was transferred to cardio-thoracic surgeon.

DISCUSSION:

CoA manifests as hypertension in early childhood or early adolescence, lower extremity weakness or fatigue, diminished pulses in lower extremity and congestive cardiac failure. Diagnosis is done with high degree of clinical suspicion and physical examination. The European society of cardiology recommends early treatment in all patients with a non-invasive pressure difference of more than 20 mmHg in upper and lower limbs regardless of symptoms but with upper limb hypertension of > 140/90 mmHg and significant left ventricular hypertrophy[3]. Apart from the pulse delay and blood pressure difference between the upper and lower limbs, a systolic murmur usually noted in posterior chest[4]. Some other manifestations include bicuspid aortic valve systolic ejection sound and/or murmur and neurological complaints. Prognosis and survival depend on the disease severity and patient's age at the time of correction[4]. Death in these patients is usually due to heart failure, coronary artery disease, aortic rupture/ dissection, concomitant aortic valve disease, infective endarteritis/ endocarditis, or cerebral hemorrhage [6,7].

Summary:

A 33-year-female patient of hypertension detected at the age of 19 year was investigated. CT Thoracic and Abdominal aorta Angiogram of the present case showing the narrowing in the thoracic aorta extending at the level of T8 to T10 vertebral body level for the length of 7.5cm. Reconstructed CT of the case showed multiple tortuous collaterals between the branches of internal mammary artery and external iliac artery and between axillary and intercostal artery. A relevant history was reviewed.

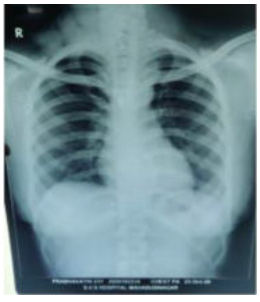

Fig 1: X-ray chest of the present case showing cardiomegaly and visible biarcuate appearance of aortic arch ("3" sign).

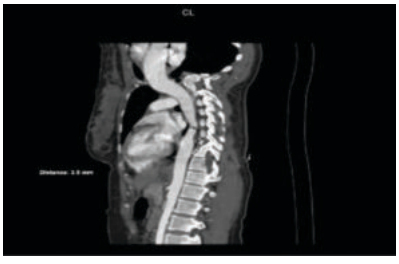

Fig 2: CT Thoracic and Abdominal aorta Angiogram of the

present case showing the narrowing in the thoracic aorta extending at the level of T8 to T10 vertebral body level for the length of 7.5cm.

Fig 3: Reconstructed CT of the case – Multiple tortuous collaterals between the branches of internal mammary artery and external iliac artery and between axillary and intercostal artery.

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