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Unusual Presentation of Aortic Dissection

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ABSTRACT

Background: Aortic dissection is defined as separation of the layers within the aortic wall. Tears in the intimal layer result in the propagation of dissection (proximally or distally) secondary to blood entering the intima-media space. Acute dissection of the aorta can be life-threatening.
Neurologic complications like paraplegia are rarely seen as a presenting manifestation of aortic dissection.
Case Report: We are reporting here a 60 year old female patient who had a sudden episode of restlessness, chest pain and paraplegia and on computed tomography was found to have an ascending aortic aneurysm with aortic dissection - Stanford type A. Why Should An Emergency Physician be aware of this? The importance of including acute aortic dissection in the differential diagnosis of sudden onset paraplegia is emphasized

KEYWORDS aortic dissection, paraplegia, Stanford type A,

CASE REPORT

60 year old previously healthy lady presented to the emergency room following the development of sudden restlessness, anterior central chest pain associated with sweating and sudden onset of bilateral lower limb weakness about 6 hours earlier. There was no history of loss of consciousness, bladder and bowel incontinence. She had no past history of any significant illness such as diabetes mellitus or hypertension. She had been a chronic smoker for the about 10 years but had quit smoking since last 2 years. In the emergency room the patient was found to be conscious, oriented, restless and afebrile. The blood pressure was 164/100 mm Hg systolic mm Hg, pulse rate of 56/min with respiratory rate of 18/min. on general physical examination she appeared not to have any abnormality. On systemic examination cardiovascular: heart sounds were distant with no added sounds. All peripheral pulses were present. Chest examination revealed normal breath sounds. Her abdomen was soft, non tender, and there was no organomegaly. Nervous system examination of upper limbs was normal while power in the lower limbs was 0/5 and deep tendon reflexes were absent. Plantar reflex was bilaterally mute. There was complete loss of sensations below T8 level. The skin of the lower limbs was normal and there were no ischemic changes. Initial emergency investigations showed a Hemoglobin of 11.2 g/dl; TLC 4300/mm^3; Platelets 203; blood urea 23 mg/dl; serum creatinine 34; RBS 100mg/dl; Sodium 143; Potassium 4.2mg/dl. X-ray chest showed few signs of congestion but no gross cardiomegaly, ECG was suggestive of sinus bradycardia with ST elevation in V2 and T wave inversion in V3-V6. Lumber spine x rays didn't show any pathology. NCCT head didn't show any abnormality. Computed tomograpghy (CT) of chest showed**- dilated ascending, arch and descending thoracic aorta with intimal flap In its lumen extending from sinus valsalva to the bifurcation having intimal tear at proximal ascending aorta; Ascending arotic aneurysm with aortic dissection- Stanford type A.**

She was treated supportively with blood pressure control (tab Enalapril 5mg), pain killers. She was being sent to CTVS for emergency operation for aortic dissection repair.

DISCUSSION

Aortic dissection is uncommon. It accounts for approximately 1 in 10,000 hospital admissions. The mortality rate is as high as 80% without aggressive treatment. The pathology in aortic dissection is a circumferential transverse tear of the intima. The tear often begins along the right lateral wall of the ascending aorta. Hypertension is considered the most important contributory factor. The typical presentation is a severe painful tearing or ripping sensation. The painful area is usually located in the substernal, interscapular or mid-back area. Other signs and symptoms include cardiovascular collapse, acute myocardial infarction, heart failure, cardiac tamponade, oliguria, syncope, and cool mottled extremities [1].

Several classification of arotic dissection has been proposed. The two most important classifications which are are **DeBakey classification** and **Stanford Classification**. **DeBakey Classification type I**, in which an intimal tear occurs in the ascending aorta but involves descending aorta as well; **Type II,** dissection is limited to ascending aorta; **Type III**, intimal tear is limited to descending aorta with distal propagation of dissection. **Stanford classification Type A**; dissection involves ascending aorta and **Type B**; dissection is limited to arch of aorta and descending aorta[2].

The differential diagnosis of paraplegia includes spinal cord injury, tumor, infection, disc herniation, decompression illness, multiple sclerosis, and abdominal aortic occlusion [1]. The diagnosis of abdominal aortic occlusion in acute paraplegia is missed in up to 50% of cases. CT scan with contrast is a convenient diagnostic tool but angiography remains the gold standard. Transesophageal echography can be done when the above tools cannot be used [3]. Neurologic sequelae of aortic dissection occur in as many as one third of patients. These sequelae fall into 3 categories: cerebral ischemia, ischemic peripheral neuropathy and spinal cord ischemia [1]. When the ascending aorta is involved, cerebral ischemia may result. Cerebral ischemia may present as a stroke or encephalopathy. When the iliac arteries are involved, a painful peripheral neuropathy may result. Paraplegia with or without sensory loss is a rare phenomenon. It occurs in about 2% to 8% of patients. It results from dissection of the descending aorta. The clinical picture of motor loss without complete loss of sensation is known as anterior artery syndrome. The artery of Adamkiewicz branches from the posterior aspect of the aorta and supplies the anterior aspect of the spinal cord. When this artery is involved by the aortic dissection, most areas of the spinal cord receive additional blood flow from the collateral flow. In the thoracic spinal cord, there is a "watershed" area which is

especially prone to ischemia [4]. Lesions of the ascending aorta (type I, type II or type A) have an unfavorable outcome and surgery is usually needed. Patients with Type III or type B dissections may be given medical management first.

From this case, we stress the importance of considering aortic dissection in the differential diagnosis of acute paraplegia. The cause can be either acute abdominal aorta occlusion or acute spinal cord ischemia due to dissection of the abdominal aorta.

CT IMAGES OF PATIENT

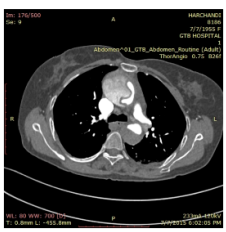

Fig1: thrombus seen in arch of aorta

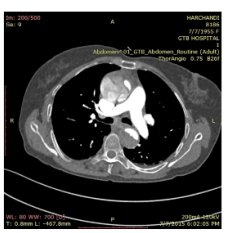

Fig2: thrombus seen at origin of aorta

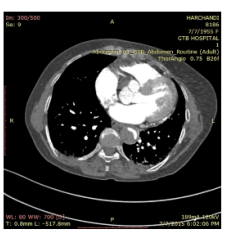

Fig3: thrombus involving both

Ascending and descending aorta.

DECLARATION

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REFERENCES

1. Inamasu J, Hori S, Yokoyama M, Funabiki T, Aoki K, Aikawa N: Paraplegia caused by painless acute aortic dissection. Spinal cord 2000; 38:702-704.
2. Harrison Principles of Internal Medicine; 19th edition; Cardiovasular system; Diseases of Arota;
3. 1640-1641
4. Hammer JPM: Aortic dissection: Role of echocardiography. Imaging Decisions MRI 2002; 1:9-15.
5. Weinberg L, Harry WR, Marshall RJ: Post-operative paraplegia following spiral cord infarction. Acta Anaesthesiol Scand 2002; 46:469-472.