Chronic Paraspinal Pain due to Multiple Aortic Aneurysms

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Abstract
Aneurysms of the aorta are not uncommon, both of the thoracic aorta or the abdominal aorta and may be associated with congenital aortic valve diseases, cystic medial necrosis, Marfan’s Syndrome or Ehlers-Danlos syndrome, or atherosclerosis. We report a case of a 46 year old smoker who had developed multiple aneurysms of the aorta in both the thoracic and abdominal parts and was incidentally diagnosed on work-up of a chronic back pain associated with venous prominence on left side of chest and left arm.

Case Report
A 46 year old farmer came to the outpatient department complaining of a chronic back pain and prominence of veins over the left anterior chest and left arm for the last 2 years. The pain was insidious in onset, non-progressive, para-spinal, dull aching in character, with no clear relieving factors. It was followed a few days later by the appearance of venous prominence over the left side of anterior chest wall and the left upper limb. There was no pain over venous prominences, nor was there any recent or past history of any skin changes over those areas. He had been recently detected as a hypertensive and prescribed some antihypertensive medicines, which he took irregularly. There were no history of any respiratory distress, facial congestion, any recent change in voice quality or timbre, drooping of any eyelids, cough, or any history of blood spitting or blood vomiting. Since 10 days after admission, the patient experienced a new onset pain in upper abdomen, which radiated to the back on the left side. He was a chronic smoker, approximately 20 pack years.

On examination, his pulse rate was 84 bpm, blood pressure was 180/110 in right arm and 176/104 in left arm, bilateral conjunctival congestion was present, and left sided cephalic, basilic, axillary, brachio-cephalic vein and the jugular veins were engorged, non-pulsatile, without any ulceration over the surface (Figure 1). There were no similar venous prominences in any other parts of the body. Trachea was central in position, apical impulse was of left ventricular type, and no bruit was audible over carotid, brachial or renal arteries. The pulsation over abdominal aorta was prominent. His peripheral blood picture showed a raised ESR of 60 mm, with an otherwise normal complete hemogram report, normal lipid profile, renal and liver function test. VDRL test was revealed to be negative. His abdominal ultrasound revealed a fusiform dilatation in the aorta measuring 6.15 cm x 6.70 cm with thickening and calcification of the wall of the aortic lumen. An electrocardiogram done in this patient revealed left axis deviation and left ventricular hypertrophy. An echocardiogram done subsequently revealed left ventricular hypertrophy with normal LVEF of 60%, and dilatation of the aortic root and ascending, arch and descending aorta. Contrast enhanced CT scans were done both of the thorax and abdomen which revealed aneurismal dilatation of both aortic arch with descending aorta and abdominal aorta (Figures 2 and 3).

Fig. 1: Engorged, non-pulsatile cephalic, basilic, axillary, brachio-cephalic vein and the jugular veins over left side.
Aneurysms of the ascending thoracic aorta most often result from cystic medial degeneration. This occurs normally to some extent with aging, but the process is accelerated by hypertension. Sixty percent of thoracic aortic aneurysms involve the aortic root and/or ascending aorta, 40% involve the descending aorta, 10% involve the arch, and 10% involve the thoraco-abdominal aorta (with some involving >1 segment). Atherosclerosis is an infrequent cause of ascending thoracic aortic aneurysms. Conversely, atherosclerosis is the predominant etiology of aneurysms of the descending thoracic aorta. These aneurysms typically originate just distal to the origin of the left subclavian artery. The pathogenesis of atherosclerotic aneurysms in the thoracic aorta may resemble that of abdominal aneurysms, but this has not been extensively investigated. Syphilis was once the most common cause of ascending thoracic aortic aneurysms, but in the era of aggressive antibiotic treatment, such luetic aneurysms are rarely seen in modern medical centers. Aneurysms of the root or ascending aorta may produce secondary aortic regurgitation. When thoracic aortic aneurysms are large, patients may suffer a local mass effect, such as compression of the trachea, mainstem bronchus, esophagus or of the recurrent laryngeal nerve. Rarely, chest or back pain may occur with non-dissecting aneurysms as a result of direct compression of other intrathoracic structures or erosion into adjacent bone. Most abdominal aortic aneurysms are also asymptomatic and are incidentally discovered. When symptoms do arise, pain is the typical complaint. The pain is usually located in the hypogastrium or lower back and is typically steady and gnawing, lasting hours to days. Actual rupture is associated with an abrupt onset of back pain along with abdominal pain and tenderness. Most patients have a palpable, pulsatile abdominal mass, and many are hypotensive and appear critically ill.

Abdominal ultrasonography is perhaps the most practical way to screen for aneurysms. Its major advantages are that it is relatively inexpensive and noninvasive and does not require the use of a contrast agent. Compared with ultrasonography, CT scanning has the advantage that it can better define the shape and extent of the aneurysm, as well as the local anatomic relationships of the visceral and renal vessels. It is also superior to ultrasonography in imaging suprarenal aortic aneurysms. Disadvantages include...
its cost and its use of ionizing radiation and intravenous contrast media. Nevertheless, although CT is less practical than ultrasonography as a screening tool, its high accuracy in sizing aneurysms makes it an excellent modality for serially monitoring changes in aneurysm size. It is important to note that CT measurements of aneurysm size tend to be larger than ultrasound measurements by a mean of 3 to 9 mm, according to the aneurysm size. The major risk posed by an abdominal aortic aneurysm is rupture and its high associated mortality. In one large trial of those with ruptured aneurysms, 25% died before reaching hospital, another 51% percent died at the hospital without undergoing surgery, and of the those who had surgery, the operative mortality was 46%, yielding an overall 30-day survival of just 11%. The goal then is to have patients undergo elective aortic repair with a mortality of only 4% to 6% when aneurysms are considered to be at significant risk of rupture. In our case the male patient was middle-aged, hypertensive and a chronic smoker. All these attributes point to the possible atherosclerotic nature of the aneurysm. That he was experiencing back pain and had varicosities of left chest wall and left arm veins is explained by the fact that the thoracic aneurysm was possibly causing a rib erosion which led to the back pain, and obstructed the left brachio-cephalic vein giving rise to the varicosities in its territory. However other vital structures like the trachea and the oesophagus escaped its compression effect; hence he did not have any respiratory distress or deglutition difficulties. The uniqueness of this case lies in the fact that such a rare occurrence of multiple aortic aneurysms can present with such a common complaint as chronic low back pain. As there was no imminent possibility of rupture of any of these aneurysms, the patient was discharged after control of his hypertension with aspirin prophylaxis and asked to return for follow up after 4 weeks.

References