

SUDDEN ONSET OF NECK SWELLING - BUT WHERE IS IT COMING FROM?

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ABSTRACT

Acute neck swelling is an uncommon presentation of ruptured aortic aneurysm. We report a case of a 77-year-old man who presented with sudden onset neck swelling while taking a bath otherwise asymptomatic prior to that. Bedside echocardiography revealed dilated ascending thoracic aorta and computed tomography confirmed a grossly enlarged aortic arch with extensive mural thrombosis. This case highlights the atypical presentation of thoracic aorta aneurysm and the advantage of bedside echocardiography in aiding difficult diagnosis.

Keywords: *neck swelling, thoracic aorta aneurysm*

BACKGROUND

Aneurysm is the second most frequent disease of the aorta after atherosclerosis¹. Annual incidence of this disease is estimated to be about 10.4 cases per 100,000 patient-years². Recently, the Global Burden Disease 2010 project demonstrated that the overall global death rate from aortic aneurysms and aortic diseases increased from 2.49 per 100 000 to 2.78 per 100 000 inhabitants between 1990 and 2010, with higher rates for men^{3,4}. On the other hand, the prevalence and incidence of abdominal aortic aneurysms have declined over the last two decades. The disease burden increases with age, and men are more often affected than women⁴. The most important risk factors are atherosclerosis, arterial hypertension and some genetic disorders^{5,6}. We report a rare case of ruptured ascending aortic aneurysm presenting as acute suprasternal swelling.

CASE SUMMARY

A 77 years old man with no known medical illness developed sudden onset of neck swelling and shortness of breath while taking bath. He presented to the emergency unit of a district hospital with acute worsening shortness of breath. Upon arrival to the emergency unit, he was tachypneic with respiratory rate of 42 breaths/min, oxygen saturation of 60% under room air and he was subsequently intubated due to compromised airway. His vital signs on arrival showed a blood pressure of 190/110 mmHg, heart rate 90/min and body

temperature 37°C. He developed one episode of hypotension post-intubation which resolved with adequate intravenous fluid. He was then transferred to Hospital Sultan Haji Ahmad Shah for further investigation. Upon arrival to the emergency department of the said hospital, patient's neck swelling was noted to worsen. Attempt to insert nasogastric tube failed. His blood pressure on right upper limb was 138/80 while left upper limb was 120/78. On examination, patient had radio-radial delay with poor left radial pulse volume. No radio-femoral pulse delay noted. Other systemic examination was unremarkable. Chest radiography showed radiopaque over right upper zone (Figure 1). Bedside Trans Thoracic Echocardiogram (TTE) done showed left ventricular outflow tract of 4.6cm (Figure 2) with suprasternal view show dilated ascending thoracic aortic arch with intramural thrombus. (Figure 3) Abdominal aorta size was normal with absence of any intra-peritoneal free fluid. Patient was then arranged for urgent computed tomography (CT) angiography. The CT angiography revealed a grossly enlarged aortic arch with extensive mural thrombosis. Mass effect was seen causing compression to the tracheal and the scan was reported as "contained leak" of aortic arch aneurysm. Case was referred to cardiothoracic team for further management. However, the patient's condition rapidly deteriorated and he passed away after 6 hours of admission to ward.

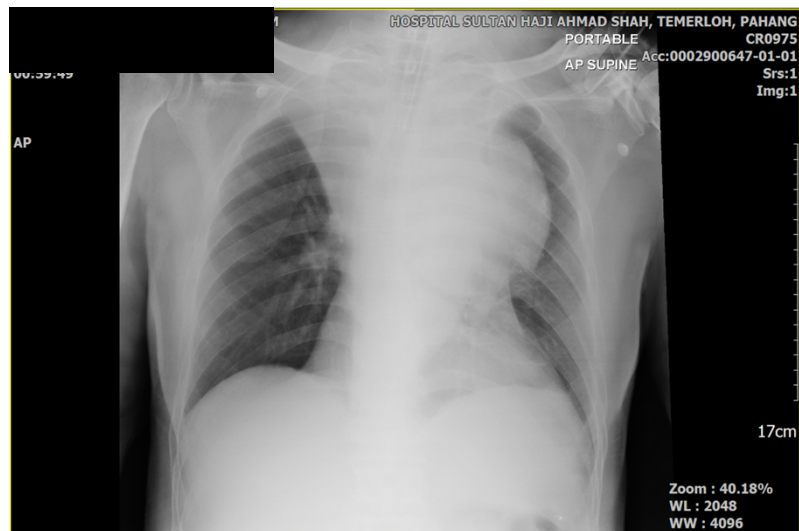


Figure 1: Chest radiograph of patient.

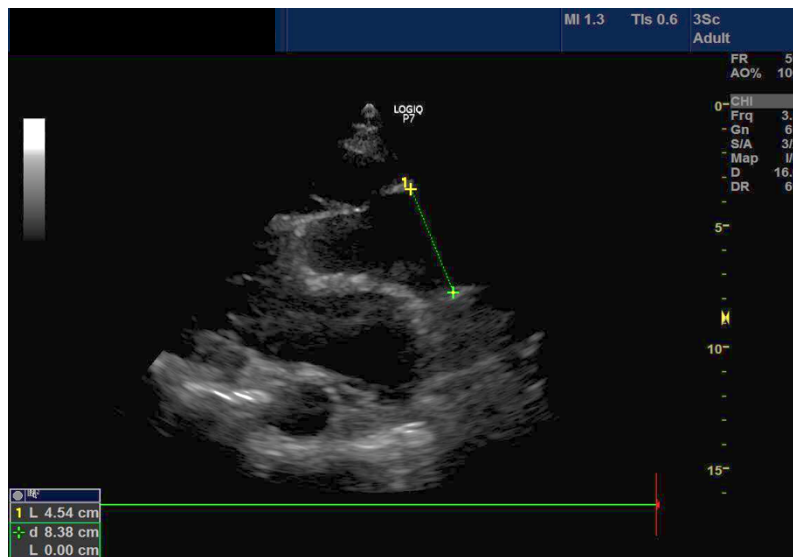


Figure 2 Bedside TTE parasternal long axis view

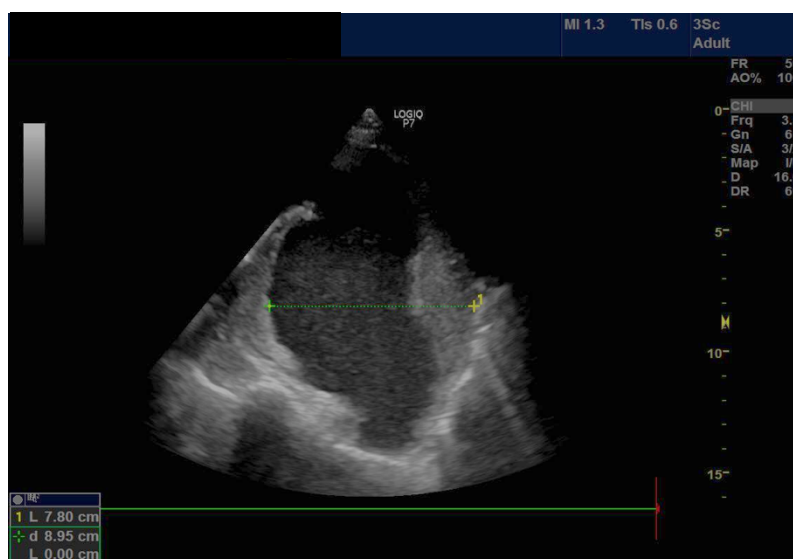


Figure 3 Bedside TTE suprasternal view arch of aorta.

DISCUSSION

Thoracic aortic aneurysm can present with a wide array of symptoms, from a totally asymptomatic coincidental finding upon imaging to severe chest pain and hemodynamic instability⁷. Besides chest pain, thoracic aortic aneurysm may present with atypical symptoms such as dysphagia due to esophageal compression, hoarseness due to vocal cord paralysis or recurrent laryngeal nerve compression and cough with dyspnea due to tracheal compression⁷. Superior vena cava syndrome due to compression of superior vena cava, and thoracic vertebral body erosion which may cause back pain and spinal symptoms especially with mycotic aneurysms⁸. Interestingly, in this case, patient had an atypical presentation of neck swelling without the classical symptoms or incidental finding.

The investigative tools available to diagnose aortic aneurysm include imaging modalities although the use of biomarkers for aortic aneurysm and dissection has been assessed by researchers as well. D-dimer is a fibrin degeneration byproduct and is 99% sensitive in the detection of acute aortic dissection⁹. However, D-dimer is extremely nonspecific, being elevated in

pulmonary embolism and coronary thrombosis, essentially in any state in which thrombosis and thrombolysis proceed.

Various imaging tools are available in diagnosing aortic aneurysm, each with its own advantages and disadvantages. The plain chest radiography might show a widened mediastinum in cases of aortic aneurysm. TTE is now becoming a good first line bedside screening tool due to their presence in many emergency departments and in the presence of more doctors trained in their usage.

Although TTE is not the technique of choice for overall assessment of the aorta, it is useful for the diagnosis and follow-up of some segments of the aorta¹⁰. TTE is one of the techniques most used to measure proximal aortic segments in clinical practice. Using different windows, the proximal ascending aorta is visualized in the parasternal long-axis views. The long-axis view affords the best opportunity for measuring aortic root diameters by taking advantage of the superior axial image resolution¹⁰.

the understanding that such atypical presentation of thoracic aortic aneurysm is possible and the clinicians to utilize a high index of suspicion, focused physical examination and bedside imaging tools, to ensure that the patient gets prompt lifesaving care.

CONCLUSION

Thoracic aortic aneurysm can be asymptomatic or present with atypical presentation. The case above with a sudden suprasternal swelling coupled with clinical finding of radio-radial delay is hoped to broaden the horizon of the clinicians with

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