



Medical Imagery

Aortic Dissection Diagnosed by Emergency Abdominal Ultrasound

Yun-Chung Shen^{a,b}, Sung-Yuan Hu^{b,c,d,e,f,g}*

^a Department of Emergency Medicine, Taichung Armed Forces General Hospital, Taichung, Taiwan; ^b Department of Emergency Medicine, Taichung Veterans General Hospital, Taichung, Taiwan; ^c School of Medicine, ^d Institute of Medicine, Chung Shan Medical University, Taichung, Taiwan; ^e Department of Nursing, College of Health, National Taichung University of Science and Technology, Taichung, Taiwan; ^f Department of Nursing, Central Taiwan University of Science and Technology, Taichung, Taiwan; ^g Department of Nursing, Jen-Teh Junior College of Medicine, Nursing and Management, Miaoli County, Taiwan

ARTICLE INFO

Accepted 16 October 2018

An 86-year-old hypertensive man presented with a 2-day course of progressive abdominal pain with radiation to the back. Physical examination revealed decreased pulsation of right femoral artery. Laboratory investigations were unremarkable, except for serum creatinine 1.5 mg/dl. Emergency abdominal ultrasound with color Doppler disclosed an intimal flap of the abdominal aorta with false lumen (Fig. 1A). CTA of aorta depicted a type A aortic dissection with involvement of aortic valve, thoracoabdominal aorta, and right iliac artery (Fig. 1B). Emergency repair of aortic valve combined with Gelsoft graft for ascending aorta was conducted successfully.

Acute aortic dissection (AAD) has an incremental mortality rate of 1% per hour during the first 48 hours after onset of symptoms if left untreated. The rate of misdiagnosis for AAD is 16–38% on initial evaluation due to mildness at presentation (walk-in mode of admission) and mimicking or absence of clinical symptoms and abnormal laboratory findings for any organ, especially in elder patients.¹ Currently, point of care ultrasound (POCUS) has been successfully integrated into clinical practice in emergency medicine. POCUS should be carried out in elder patients presenting to the emergency department with chest or abdominal pain, if AAD is suspected, because it could shorten time to consultation and surgical intervention. Transthoracic and abdominal ultrasounds with sensitivities and specificities of 67–80% and 99–100%, respectively, may be reasonable first-line, real-time, and valuable mandatory tools, which can hasten the diagnosis of AAD in the emergency department, particularly in elder patients with unstable hemodynamics or allergy to intravenous contrast.²

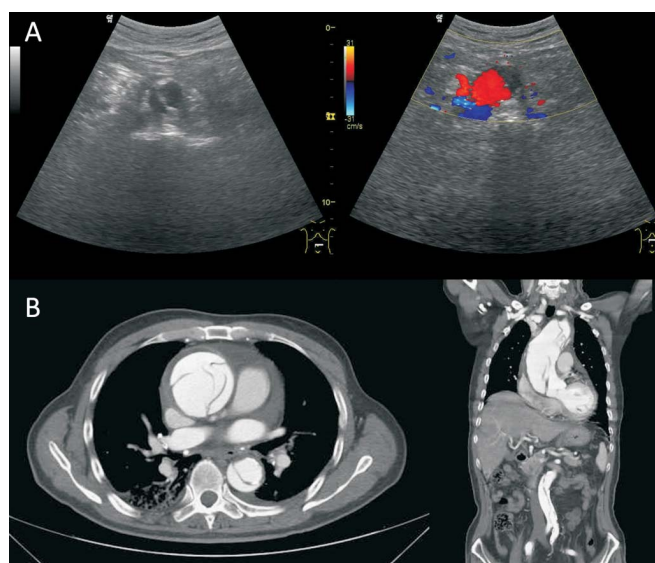


Fig. 1. Abdominal ultrasound demonstrated an intimal flap within the abdominal aorta (Left, Panel A). An intimal flap of the abdominal aorta with true (color) and false (no flow) lumens were detected on color Doppler (Right, Panel A). Axial computed tomographic scan depicted a type A aortic dissection with involvement of the aortic valve and ascending thoracic aorta (Left, Panel B). Coronal computed tomographic scan depicted a type A aortic dissection with involvement of the aortic valve, thoracoabdominal aorta and right iliac artery (Right, Panel B).

References

1. Kurabayashi M, Miwa N, Ueshima D, et al. Factors leading to failure to diagnose acute aortic dissection in the emergency room. *J Cardiol.* 2011;58:287–293.
2. Rosenberg H, Al-Rajhi K. ED ultrasound diagnosis of a type B aortic dissection using the suprasternal view. *Am J Emerg Med.* 2012;30:2084.e1–e5.

* Corresponding author. 1650 Taiwan Boulevard, Sect. 4, Taichung 40705, Taiwan.
E-mail address: song9168@pie.com.tw (S.-Y. Hu)