



TRANSESOPHAGEAL ECHOCARDIOGRAPHY(TEE) AS A BEDSIDE TOOL OF WONDER IN DETECTING THORACIC AORTIC DISSECTION

Ahmad Adib Ramli¹, Nor Fazliatul Azrin¹, Azma Haryaty Ahmad¹
Emergency and Trauma Department, Hospital Raja Permaisuri Bainun, Ipoh, Malaysia



Introduction

Traumatic aortic dissection(AD) is a challenging life threatening condition to diagnose, which can be complicated by the presence of atypical presentations and clinical signs mimicking other clinical diagnoses^{[1][4]}.

Case Report

16 years-old Indian gentleman presented with lower limb weakness after an alleged motor vehicle accident. Clinically, patient sustained loss of sensation and motor function from T11 and below, with absence of bulbo-cavernosus reflex. His hemodynamics were stable with no obvious deformity. Focused Assessment Sonographic in Trauma(FAST) was negative. Magnetic Resonance Imaging finding was extradural intraspinal hematoma at L1-L2 vertebrae. Initial diagnosis of spinal shock was made. Serial FAST scan showed left haemothorax which was treated with chest tube insertion and drained out 200 millimeters of blood. Patient's condition deteriorated despite resuscitation and he was intubated for airway protection. Point of care ultrasound(POCUS) was performed at bedside. Transthoracic echocardiography(TTE) showed dilated ascending aorta with a presence of flap. Proceeded with TEE to look for extension of dissection which revealed flap and thrombus at the ascending, arch and descending aorta. Diagnosis was revised to thoracic AD Stanford A with neurological deficit. Surgical team was referred but patient succumbed to trauma due to the extensiveness of injury.

Discussion

Detecting a traumatic AD requires a high level of suspicion, either based on the mechanism of trauma or the imaging studies as the signs and symptoms are non-specific. It is further complicated by the presence of other injuries, such as neurological deficits which are commonly manifested in polytrauma patients. Another caveat to these cases is that patients with aortic tear and impending rupture can be presented with pseudo-stable blood pressure. Hence, the utilization of TEE in trauma is beneficial in eliciting the problem and identify the extension of injury as it has a high degree of sensitivity [$\sim 100\%$] and 98% specificity in the detection of aortic injury^{[1][3]}.

Conclusion

Atypical presentations can render the diagnosis of aortic dissection particularly challenging in emergency department. A high level of suspicion is of vital importance in establishing a diagnosis of this catastrophic emergency, particularly in trauma patients. The adequate skills of handling TEE by emergency physicians are also necessary especially when facing a case of suspected aortic injury^[2].



Figure 1:
Chest X ray of patient showed widened mediastinum

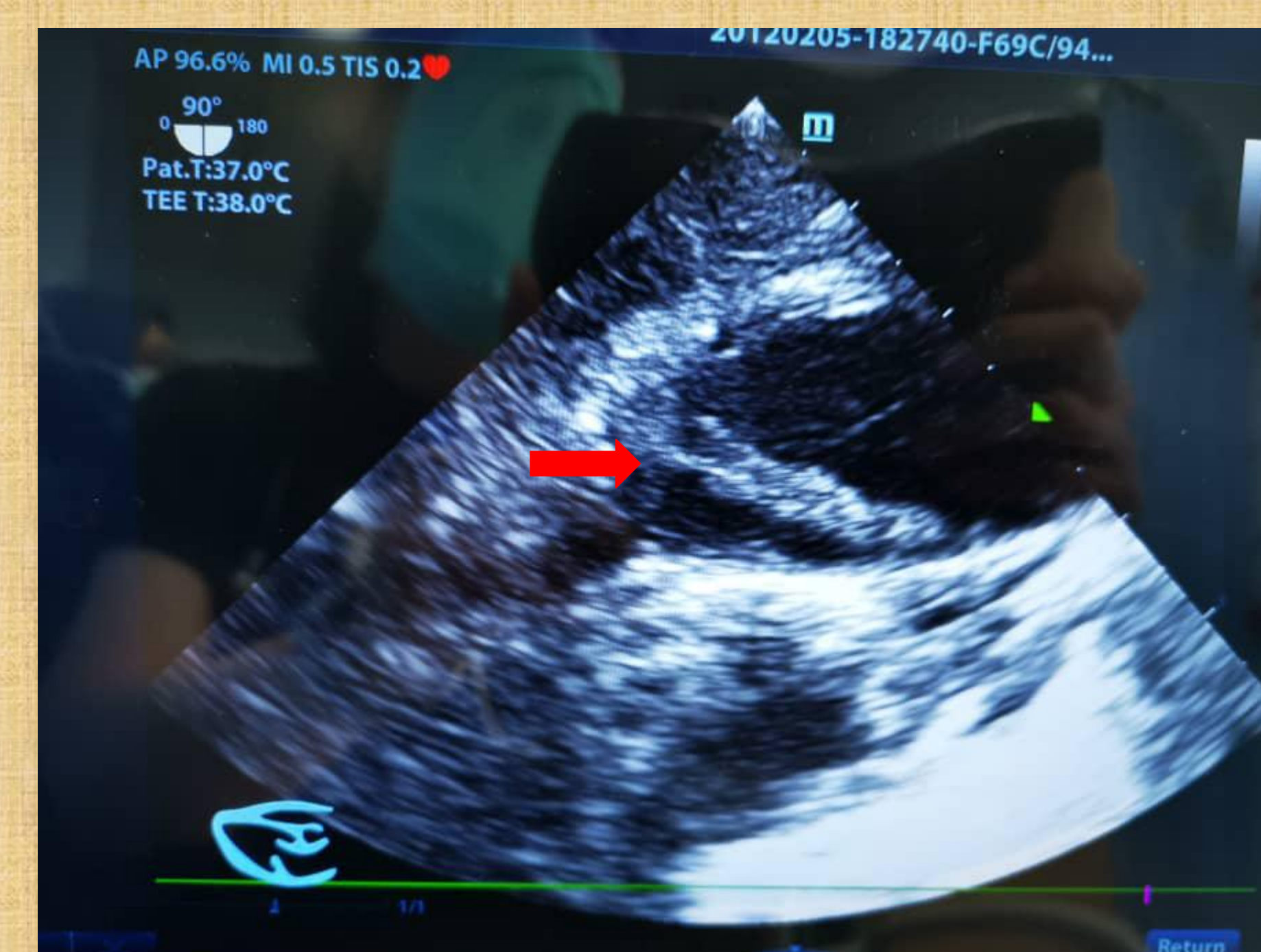


Figure 2:
Aortic Dissection image obtained from TEE demonstrating an intimal flap (red arrow) in the descending aorta.

References

1. Smith MD, Cassidy JM, Souther S, Morris EJ, Sapin PM, Johnson SB, et al. . Transesophageal echocardiography in the diagnosis of traumatic rupture of the aorta. N Engl J Med 1995. Feb;332(6):356-362. 10.1056/NEJM199502093320603
2. Goarin JP, Catoire P, Jacquens Y, Saada M, Riou B, Bonnet F, Coriat P. .Use of transesophageal echocardiography for diagnosis of traumatic aortic injury. Chest. 1997 Jul;112(1):71-80.
3. Ballal RS, Nanda NC, Gatewood R, D'Arcy B, Samdarshi TE, Holman WL, et al. Usefulness of transesophageal echocardiography in assessment of aortic dissection. Circulation. 1991;84:1903-14.
4. Shiga T, Wajima Z, Apfel CC, Inoue T, Ohe Y. Diagnostic accuracy of transesophageal echocardiography, helical computed tomography, and magnetic resonance imaging for suspected thoracic aortic dissection: Systematic review and meta-analysis. Arch Intern Med. 2006;166:1350-6.