Abstract

“It takes teamwork to save a Broken Heart”

A case of bedside Emergency Thoracotomy following a Right Atrial Wall rupture secondary to Blunt Chest Trauma.

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Introduction

Blunt cardiac trauma is reported in 10% of total Emergency Department (ED) trauma load. Its spectrum varies from myocardial contusion to the life threatening Cardiac Wall ruptures. The challenges comes from its low incidence and a notoriously high mortality rate (90%) prompting rapid identification and intervention by the ED team. We would like to report a case of traumatic cardiac rupture which underwent Emergency Thoracotomy in the ED.

Case Report

A 72 years old lady presented to our Emergency Department with chest pain after she was hit by a car to the chest.

Initial assessment showed evidence of obstructive shock (BP 90/52) with distended neck veins. Bedside Efast showed moderate amount of pericardial effussion with no evidence of cardiac tamponade.

She rapidly deteriorated and developed cardiac arrest. CPR was commenced and Cardiothoracic (CTC) team was activated. Following ROSC, Emergency Thoracotomy was performed by CTC team in the ED with an intraoperative finding of right atrial wall rupture. Post-operatively, patient was transferred to Cardiac Intensive Care Unit (CICU).

Discussion

Blunt cardiac rupture is defined as full-thickness myocardial laceration. Its incidence was reported to be as low as 0.007–0.45% and a mortality rate as high as 80-90%, These injuries are commonly associated with direct high energy trauma to the chest with 70% of cases were due to MVA.

Establishing diagnosis and rapid identification by ED team is crucial as patient may present with shock due to cardiac tamponade or massive blood loss. EFAST may act as an effective and ideal tool in aiding the diagnosis by detecting pericardial effussion and cardiac tamponade.

Upon confirmation of blunt cardiac rupture, immediate Emergency Thoracotomy is indicated as an attempt to improve patients’s survival preferrably in the operation theater. However, in this case due to haemodynamic instability, Emergency Thoracotomy was performed in the ED.

Conclusion

Blunt cardiac injury is a life threatening injury with a major diagnostic challenge. It should be suspected in a high impact trauma to the chest especially involving rapid deceleration. ED plays a crucial role as early detection and immediate thoracotomy will significantly improve the patient’s survival.