

Stunning



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Introduction

Focussed ultrasound in intensive care (FUSIC) has transformed the practice of critical care. Bedside ultrasound is a useful complementary diagnostic tool which contributes to an early therapeutic decision based on reproducible physio-pathologic data.¹

We highlight a scenario where ultrasound proved to be the game changer in a post-operative neurosurgical patient, when all hope was lost.

Main Body

A female in her late teens was transferred to our critical care unit **post fronto-temporo-parietal (FTP) craniectomy** for **significant right frontal epidural haematoma** and right FTP acute subdural haematoma with significant transcalvarial brain herniation.

The mechanism of injury was unknown and believed to be an alleged suicidal attempt.

Owing to her **hemodynamic instability**, she required **high strength nor-adrenaline and vasopressin infusions and multiple crystalloid boluses to maintain her blood pressure**. Antibiotics were escalated and stress dose steroids were commenced. **Her guarded prognosis was communicated to her family**.

Bedside FUSIC was performed to rule out any causes of impending cardiac arrest as she was extremely unstable to be shifted for CT scan imaging.

It showed features of global left ventricular hypokinesia with ballooning **suggestive of neurogenic stress cardiomyopathy (NSC) or neurocardiogenic stunning**. Dobutamine was initiated in addition to the ongoing vasopressors and some degree of haemodynamic stability was achieved.

Advanced cardiac monitoring with LiDCO was **not reliable** as the patient had **cardiac arrhythmia** and sporadically showed erratic readings, requiring frequent recalibrations. Later, it did support our findings of pump failure.

Over the next 48-72hours, the vasopressor and inotropic requirements decreased and the patient was weaned from the ventilator & shifted to the neurosurgical ward for rehabilitation. Formal echocardiography confirmed our FUSIC findings and we saw a reversal to normal function on follow up.

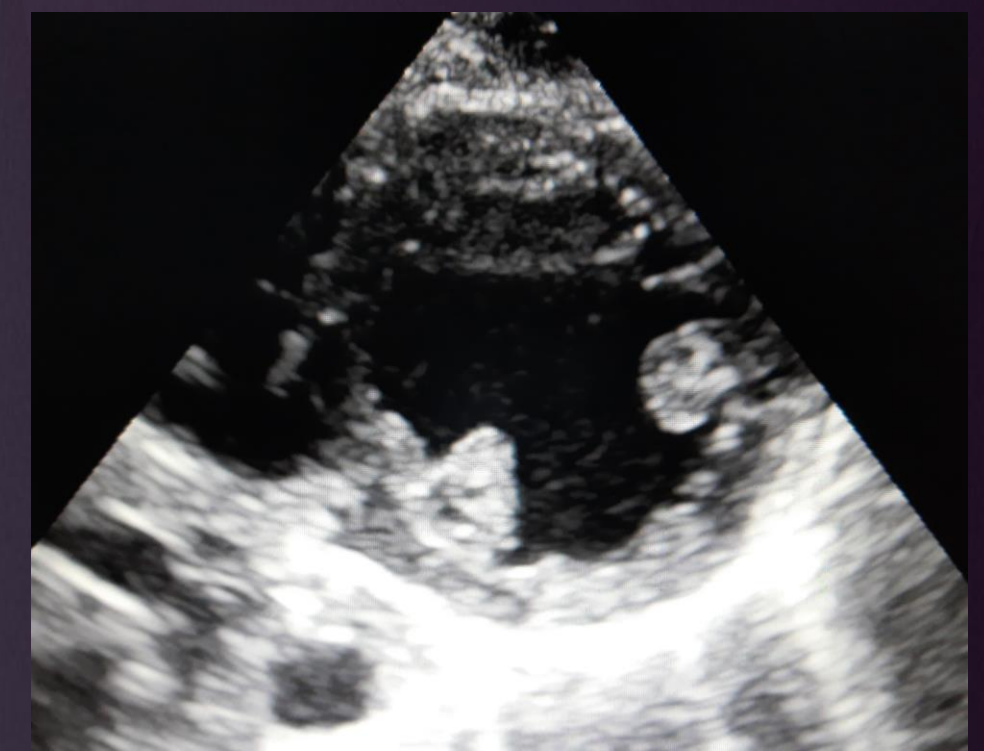
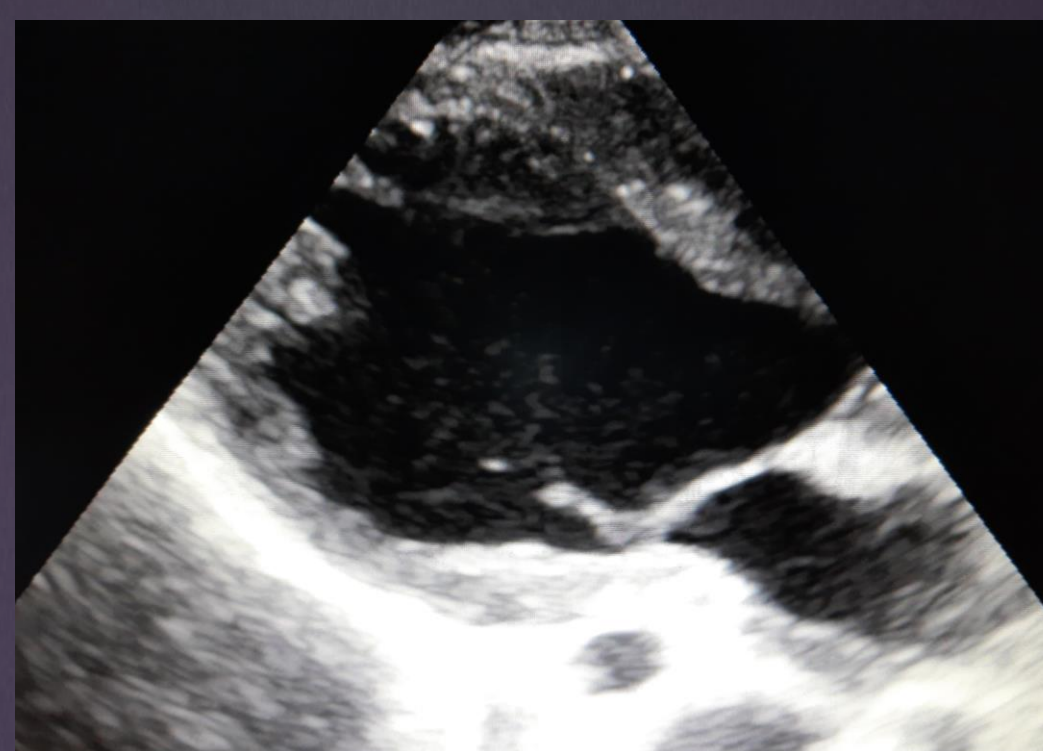


Fig. 1: Parasternal long axis – Mid - diastole

Fig. 2: Parasternal long axis- Systole

Fig. 3: Parasternal Short Axis

FUSIC Findings

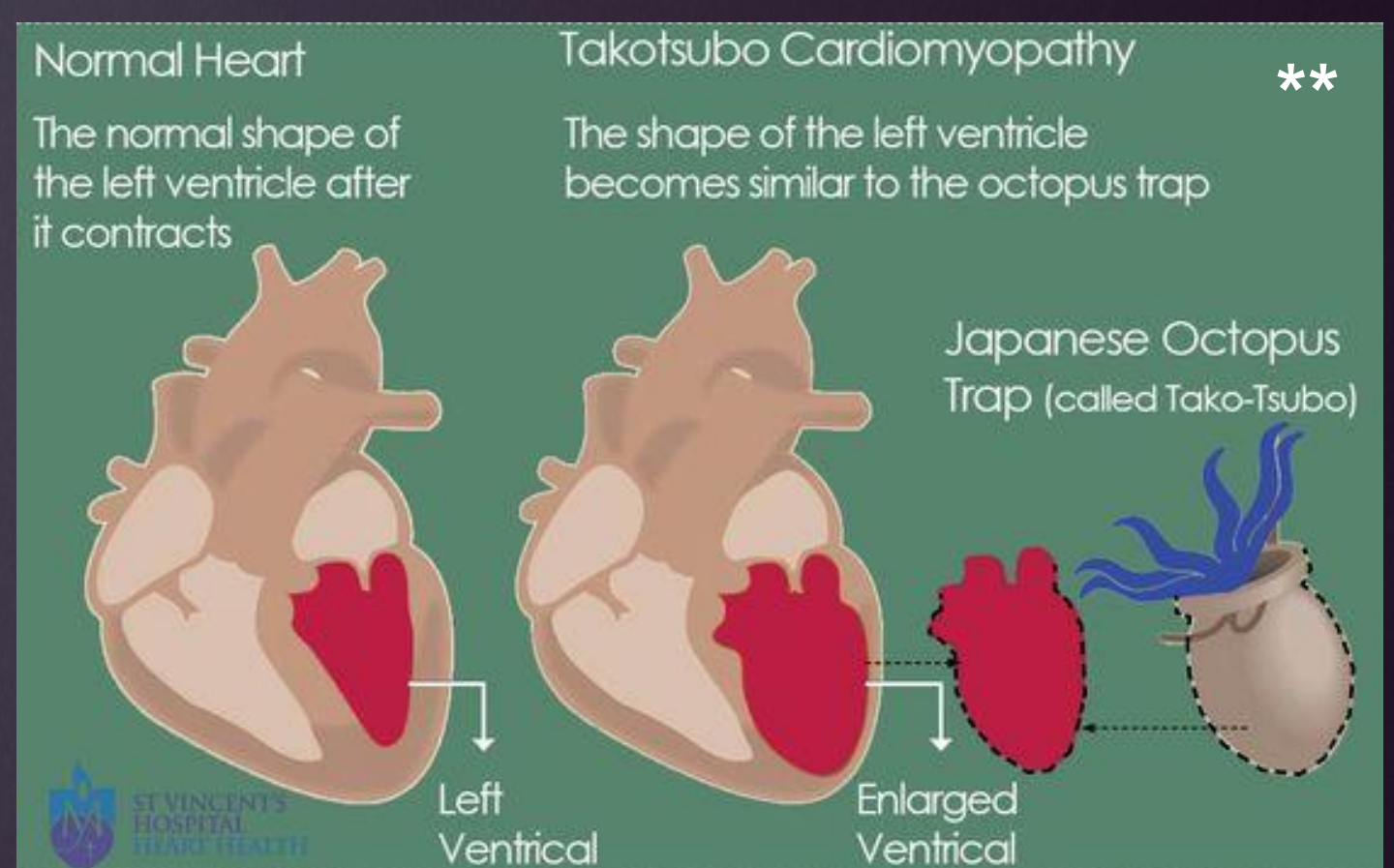
Global left ventricular hypokinesia and ballooning with reduced contractility.

No right ventricle dilatation and no evidence of pericardial effusion.

Bilateral femoral & popliteal veins showed no evidence of thrombus. Lung ultrasound demonstrated B lines and mild pleural effusion in bilateral bases.

Abdomen scan did not reveal any fluid collection.

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Conclusions

Recognition of NSC is important because the diagnosis has implications for management and prognosis.²

The advantages of ultrasound are of great value in the setting of critical care medicine, as immediate decision making can be lifesaving.³

References

- 1) Silva S, Biendel C, Ruiz J, et al. Usefulness of cardiothoracic chest ultrasound in the management of acute respiratory failure in critical care practice. *Chest*. 2013;144(3):859-865.
- 2) Bybee KA, Prasad A. Stress-related cardiomyopathy syndromes. *Circulation*. 2008; 118: 397-409.
- 3) Ten good reasons to practice ultrasound in critical care. *Anaesthesiology Intensive Therapy*; 46(5): 323-335.

, : Takotsubo Cardiomyopathy: Google images