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BMH Med. J. 2018;5(3):79-84 **Case Report**

The Future Stethoscope

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Introduction

Here are presenting two cases which highlight the importance of routine use of bedside ultrasonogram and echocardiogram in patients presenting to the emergency department with diverse presentation. We were able to detect two life threatening diseases - massive pulmonary embolism (PE) and ruptured abdominal aortic aneurysm (AAA) very early, which presented with seemingly benign symptoms.

An AAA can be ruled out in a clinically suspected cases if the aortic diameter is found to be less than 3cm, with more than 90% sensitivity [1].

Patients with PE usually present with unexplained hypoxia with risk factors for embolism. Well's score of less than 2 is low risk, 2 to 6 is moderate risk and more than 6 is high risk for PE [2].

Case 1

Middle aged female with past history of hypertension presented with breathing difficulty (grade 4) since seven days, without any history of chest pain, fever or cough. She was treated as a case of lower respiratory tract infection from a local hospital with intravenous antibiotics and nebulization. On examination the patient was hypoxic (Oxygen saturation 89%) and tachypnoeic. System examination showed bilaterally equal air entry with bilateral rhonchi, normal S1, S2 and no murmurs. Her saturation improved with 4 litres of oxygen via face mask. We did a bed side echo which showed dilated right ventricle and atrium (**Figure 1**) with typical 'D' shaped left ventricle. Based on these findings pulmonary embolism was suspeted and emergency CT pulmonary angiogram (CTPA) was taken, which showed a large pulmonary thrombus which nearly totally occluded both pulmonary arteries and was extending to its branches (**Figure 2, 3**). Patient was immedialtely shifted to cardiac ICU and was thrombolysed.

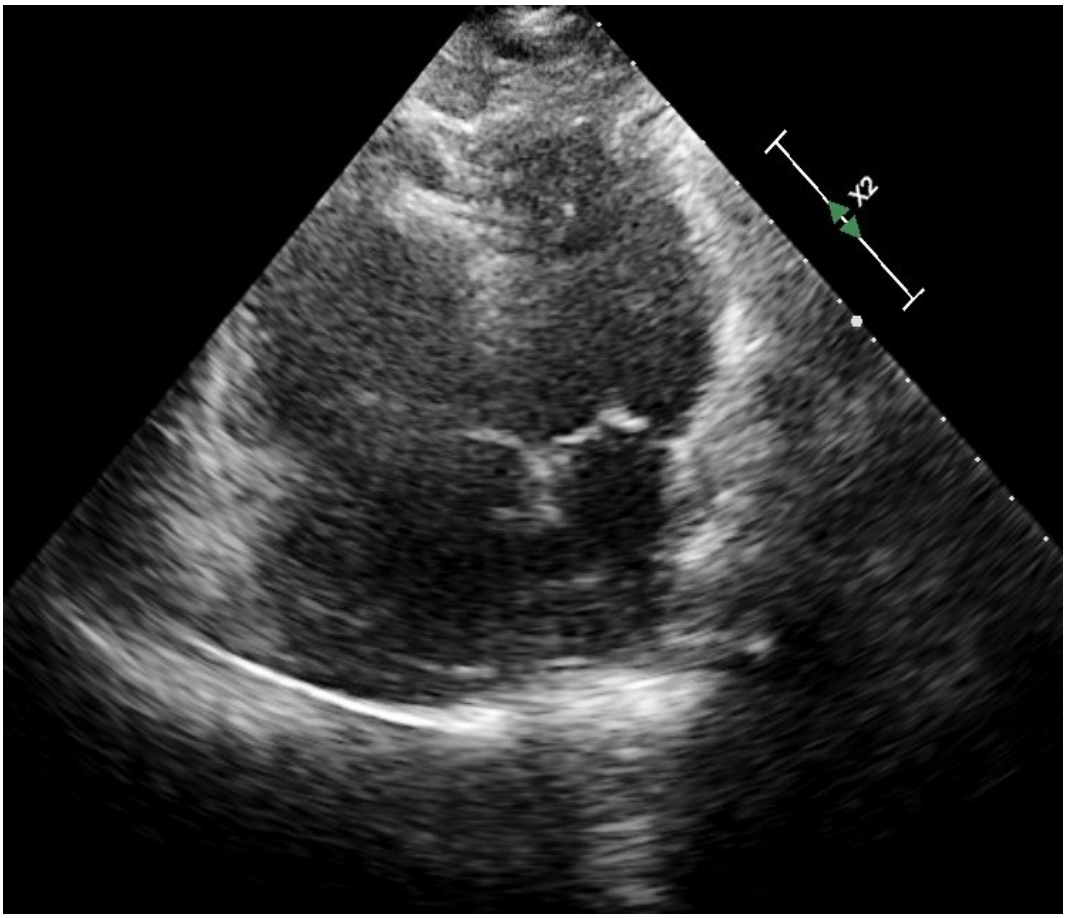

Figure 1: Dilated right atrium and right ventricle from apical four chamber view.

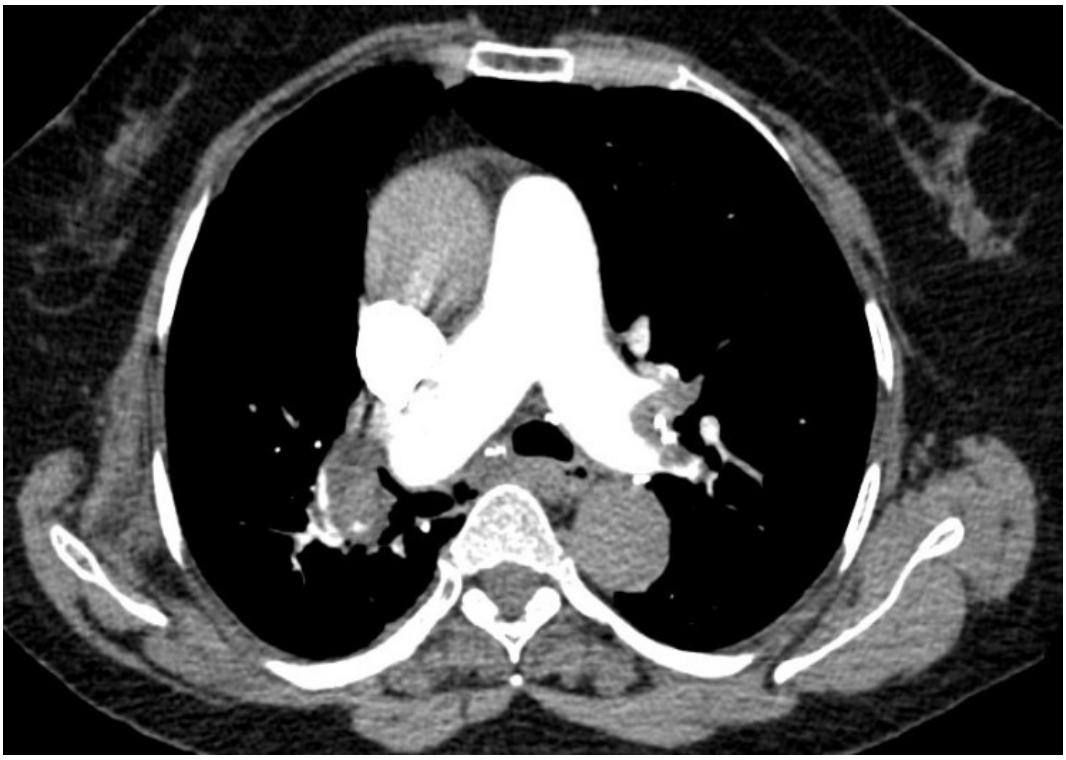

Figure 2: CT pulmonary angiogram - axial cut

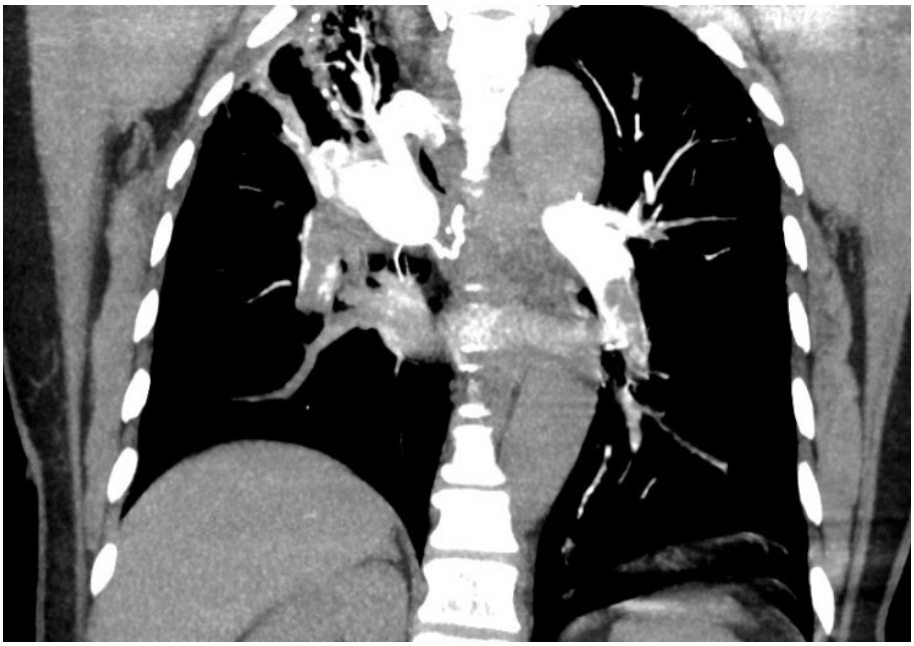

Figure 3: CT pulmonary angiogram - coronal cut

Case 2

Elderly male with past history of hypertension presented with severe left sided flank pain, without any history of fever, vomiting, loose stool or dysuria. On examination his vitals were stable. On systemic examination his abdomen was distended, tense, tender and a palpable soft mass with irregular border was felt. His pain was controlled with opioid analgesic (Fentanyl). We did a bed side abdominal sonogram which showed a large abdominal aorta measuring 8.5cm in diameter (**Figure 4**). There was moderate to severe hemoperitoneum evidenced by free fluid in the Morrison's pouch (**Figure 5**) and splenorenal pouch. In view of the above findings emergency CT Aortogram was taken which showed a ruptured aortic aneurysm with active contrast extravasations from multiple sites. Blood transfusion was started and cardiovascular surgeon was involved early. The patient was immediately shifted to operation theatre and laparotomy done.

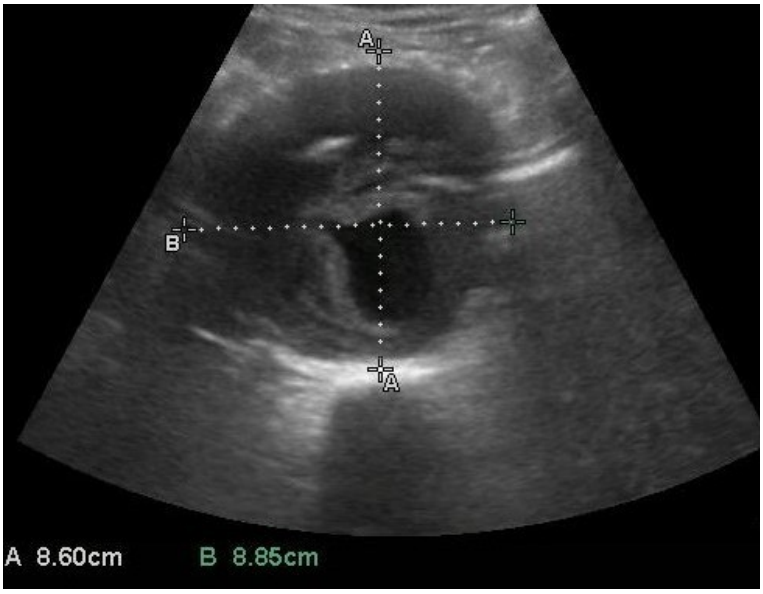

Figure 4: Abdominal aortic aneurysm on ultrasound

Figure 5: Free fluid in the Morrison's pouch on ultrasound

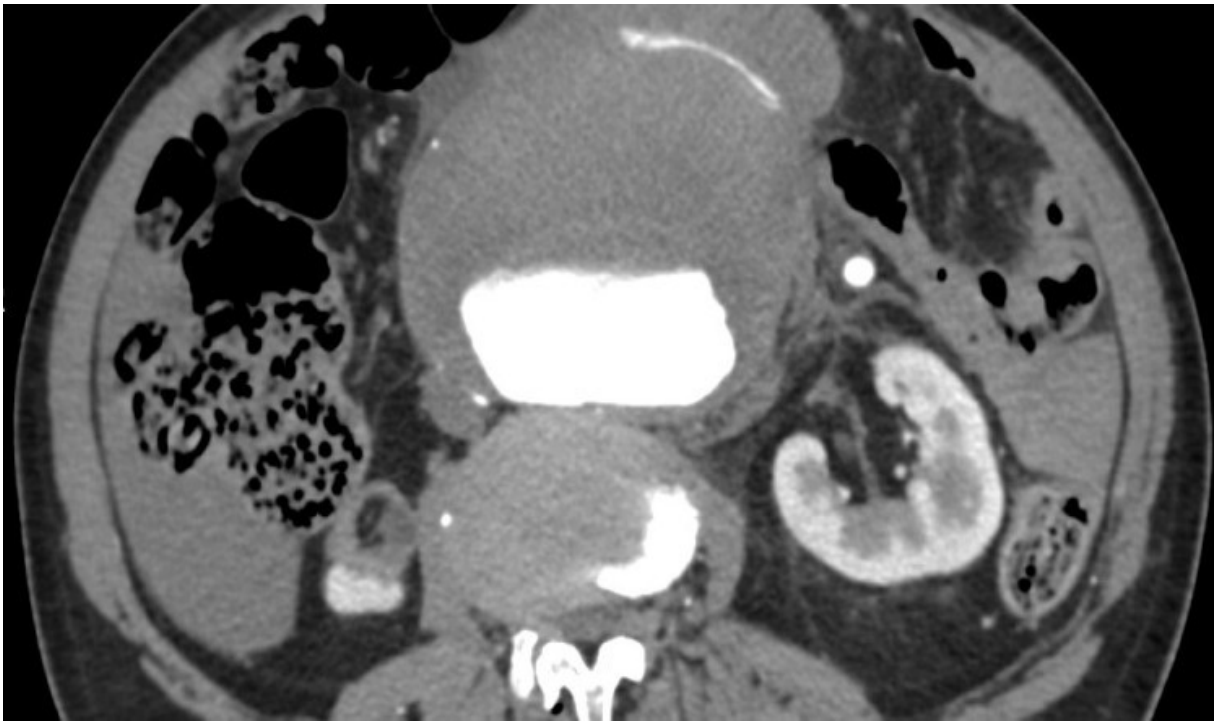

Figure 6: Contrast leak seen on CT aortogram in axial cut

Figure 7: Contrast leak seen on CT aortogram in sagittal cut

Discussion

In Case 1 even though the patient was hypoxic, there were no risk factors to suspect pulmonary embolism. Pulmonary embolism can be suspected in case of unexplained hypoxia with risk factors for pulmonary embolism (Well's score more than 2). This patient had a low risk since there was no risk factors. Only bedside echo was helpful to suspect PE.

In Case 2 even though we can suspect AAA in an elderly patient with history of hypertension, only bed side sonogram helped for the early diagnosis of an ruptured AAA, since he presented with a stable vitals. An aortic diameter of more than 5cm is highly prone for rupture which needs close followup [1]. So we proceeded early with CT Aortogram, blood transfusion and laparotomy.

Bed side sonogram is useful in all patients, especially in patients with abnormal vitals since it does

not interfere with the resuscitative procedures and does not take the patient away from the resuscitation table. It also avoids unnecessary imaging and radiation exposure in cases of over diagnosis.

References

1. Tintinalli's Emergency Medicine 8th Edition. Cardiovascular diseases: Aneurysmal disease:2016;60:418.

2. Tintinalli's Emergency Medicine 8th Edition. Cardiovascular diseases: Venous thromboembolism:2016;56:393.