Chronic Ruptured Abdominal Aortic Aneurysm

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ABSTRACT

Chronic rupture of Abdominal Aortic Aneurysm is a rare presentation although AAA and its frank rupture is well known phenomenon. Chronic rupture of AAA can be misdiagnosed due to non-specific presentation and absence of haemorrhagic shock. This case report discusses the presentation scenarios as well radiologic findings which may help diagnose a Chronic Ruptured AAA (CR-AAA) and will be helpful in prompt recognition and early management of the situation.

Keywords: Abdominal aortic aneurysm, chronic contained rupture of abdominal aortic aneurysm, chronic ruptured AAA.

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I. INTRODUCTION

A chronic rupture of Abdominal Aortic Aneurysm (CR-AAA) is a sub-type of ruptured Abdominal Aortic Aneurysms (rAAA) which can present very different to a frank rupture of Abdominal Aortic Aneurysm (AAA). While a frank rupture of AAA presents as haemorrhagic shock, the chronic rupture of AAA can present without any hemodynamic instability. A chronic rupture can have symptoms like back pain or abdominal pain and can mimic a plethora of diseases including complicated AAA, uncomplicated AAA, and problems of lumbar and sacral spine [1].

In cases of CR-AAA, an contrast enhanced Computer Tomographic Angiogram (CTA) can help visualize if there are ongoing leaks while a venogram or Magnetic Resonance Imaging (MRI) scan can help visualise if chronic rupture is eroding sacrum [2]. We recently encountered a case of a well and healthy adult with chronic rupture of AAA which was mimicking Sciatica due to erosion of sacrum.

II. CASE REPORT

We report a case of a 67-year-old male who presented to A&E with a history of back pain for two days and abdominal pain for one day. He also gave a history of two to three episodes of fainting on the same day before arriving at the hospital. Although the patient was hemodynamically stable; the history of fainting episodes prompted a fast scan which showed 6-8cm AAA. The patient was immediately sent for CTA of his abdominal aorta which showed rather interesting findings.

CTA showed an 11cm abdominal aortic aneurysm (AAA) which was ruptured posteriorly with tangent sign of calcium (Fig. 1). The sac had a bilobed appearance with rupture in

upper part and lower part extending into iliac aneurysm. Ruptured part of the aneurysm was eroding L5 vertebra and was giving an appearance of chronic erosion (Fig. 2).

Fig. 1. Chronic Rupture of AAA.

Fig. 2. Erosion of Lumbar Vertebra by CR-AAA.

Looking at the background, Patient had a history of hypertension and used single antihypertensive agent for its

control. Other than that, this was a healthy and active 67-year-old who had a history of lower back pain extending into back of his thigh for a few months which had been treated as Sciatica because it completely mimicked the symptoms. During this episode, the patient had a similar back pain which then progressed to abdominal pain and primary doctor was concerned due to the episodes of fainting and that is why a referral to the Arterial Centre was made.

On the CTA, aneurysm appeared to be suitable for Endovascular Aneurysm Repair (EVAR) and the patient was prepped for the procedure and brought to Operating Room. Anatomy of AAA including angled neck, calcified Iliac vessels and extension of AAA into iliac bifurcation made it a technically difficult procedure. Therefore, additional preparation was also made for firstly Axillary access to put a balloon endovascularly in an emergency to handle any complication and secondly for Open repair of AAA.

The patient was hemodynamically stable throughout this time from his presentation in A&E to CT scanner and to Operating Room, however, just before the EVAR was going to be started; his blood pressure collapsed from 150mmHg (systolic) to 50mmHg(systolic). At this point, decision was made to do Open repair and a crash laparotomy was done which showed spontaneous anterior rupture of AAA. Before the aortic clamping was achieved; patient went into cardiac arrest, CPR was started, and Advance Life Support (ALS) algorithm was followed. While operating vascular surgery team attempted to control the rupture, Anaesthetic team continued advance life support (ALS). A supra-coeliac clamp was achieved with difficulty, but patient still needed resuscitation and ALS continued for ~ 20 minutes before the patient reverted to sinus rhythm after cycles of pulseless electrical activity and a cycle of Ventricular fibrillation that needed defibrillation.

Patient was admitted to intensive therapy unit (ITU) for post-operative care. During post-operative period, patient showed signs of Multi organ failure, significant Systemic Inflammatory Response Syndrome (SIRS), hypoxic brain injury, liver ischemia, AKI (oliguria), ischemic lower limbs, and increasing requirement of norepinephrine. As a result, a multidisciplinary decision was made to withdraw the life sustaining treatments after discussion with the family.

III. DISCUSSION

The phenomenon of chronic rupture of AAA abdominal aortic aneurysm has been described in literature previously as well [3]. Although, AAA and its rupture are commonly known presentations but chronic ruptures account for a small proportion only [4]. Rosendal *et al.* described diagnostic criteria for Chronic Contained Rupture of AAA (CCR-AAA) as follows:

1. Previously documented AAA
2. History of persistent or resolved pain
3. Normal haematocrit and hemodynamic stability
4. Retroperitoneal hematoma on a CT scan
5. Pathological confirmation of organized hematoma [5].

However, a chronic rupture can still pose a diagnostic mystery specially where the signs and symptoms make alternate diagnoses more likely. Continuously pulsating AAA can lead to bone destruction and mimic other syndromes.

Vertebral erosion secondary to a CCR-AAA has been described by [6] in 2010. There are different radiologic signs described in literature which can help diagnose a Chronic rupture of AAA [6]-[8]. Although this case was not a success story with the patient not surviving despite utmost effort; but this case report can help spread awareness of this rare scenario so that prompt management of this life threatening situation can lead to good outcomes.

CONCLUSION

This case report signifies that chronic rupture of abdominal aortic aneurysm exists and signs and symptoms can mislead into alternate diagnoses. However, radiologic findings can help reach the diagnosis and prompt management should be started even if the patient is hemodynamically stable and not showing signs of major haemorrhage.

CONFLICT OF INTEREST

Authors do not have any conflict of interest to express.

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