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Life Threatening Cause of Right Flank Pain

***Corresponding Author(s):** Tamer Shalaby

Acute Medicine Department, North Manchester General Hospital, Delaunays Rd, Crumpsall, Manchester M8 5RB, UK

Email: Tamer.Shalaby@pat.nhs.uk

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Abstract

An interesting atypical case of aortic dissection, patient presented with severe right flank pain as the main presenting symptom, good history taking identified the sudden onset tearing character of the pain, risk factors and associated symptoms, with the help of investigations the diagnosis was more clear, medical treatment started immediately but unfortunately the outcome was bad.

The case highlights the importance of good history taking, identification of risk factors and organising appropriate investigations.

Case presentation

A middle-aged male smoker with history of resistant hypertension (HTN) on 3 antihypertensive, End stage renal failure (ESRF) secondary to HTN on Haemodialysis for 18 months, presented with brief chest pain which lasted for 10 minutes, radiated briefly to interscapular area and then persisted constantly to the right flank.

On examination, patient was complaining of severe right flank pain requiring immediate release oxycontin, chest was clear, heart sounds normal with no early diastolic murmurs, systolic blood pressure 200 with minimal differences between to arms and no neurological signs.

Investigations showed troponin of 84 (range 0-14), ECG showed TWI I,VL and inferior, raised WCC mildly and creatinine of 696, K 4.2, lactate 1.8 and Hb 87 stable.

CT Aortogram showed Severe dissection (false lumen-low density and true lumen-high density) spanning the entire thoracic aorta from the Sino tubular junction to the distal abdominal aorta. Critical arteries all arise from the true lumen. No extension in the branchial vessels. Cardiomegaly noted but no effusion.

Treatment started urgently and Patient was put on a monitor bed, analgesia given, labetalol infusion started to keep SBP 100-120 and cardiothoracic centre contacted but unfortunately patient arrested before transfer.

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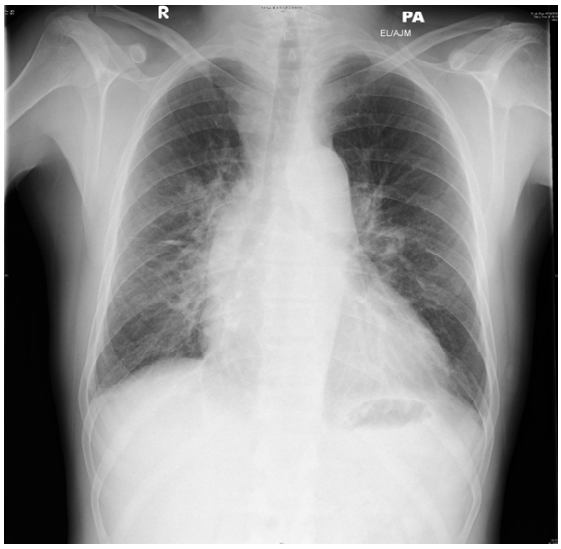

Figure 1: Chest X ray showed extensive widening of mediastinum and enlarged heart.

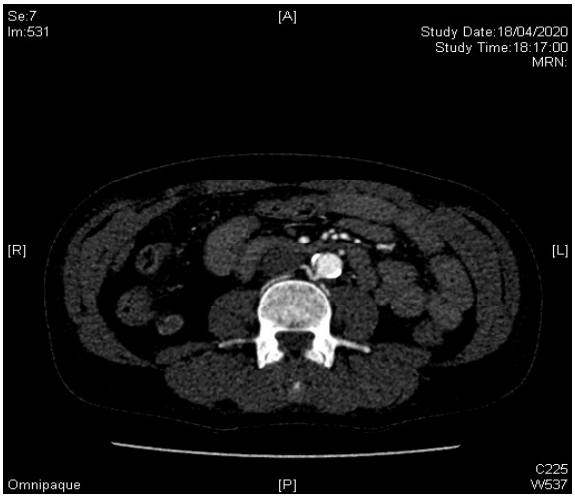

Figure 2: Dissection involving the level of renal arteries- axial.

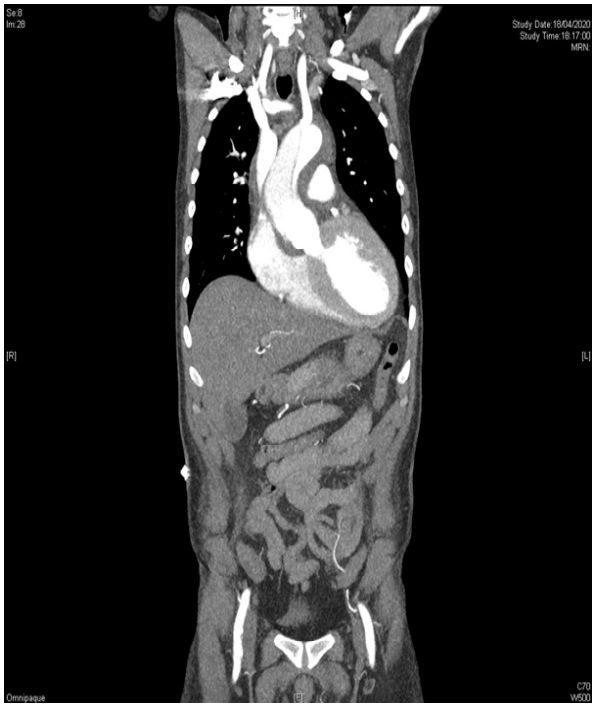

Figure 3: Dissection involving the ascending aorta-coronal.

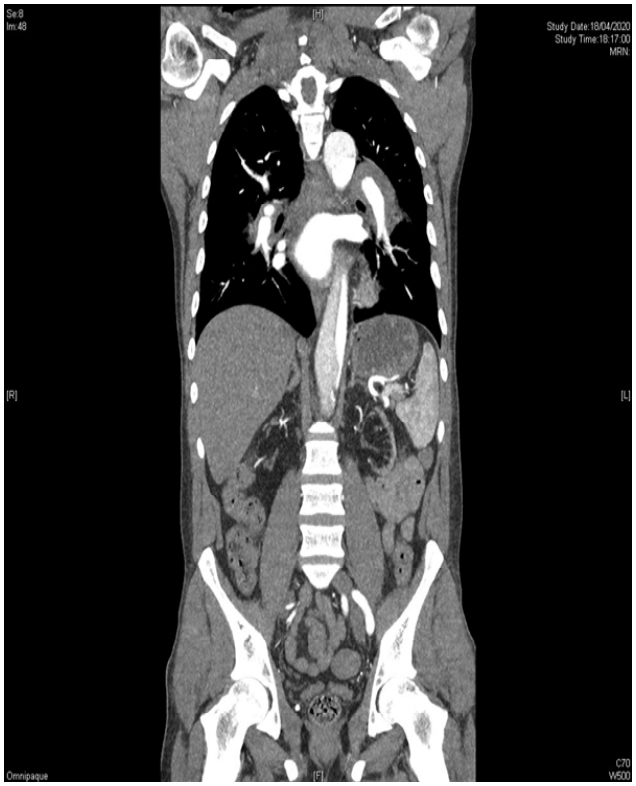

Figure 4: Dissection involving thoracic aorta-coronal.

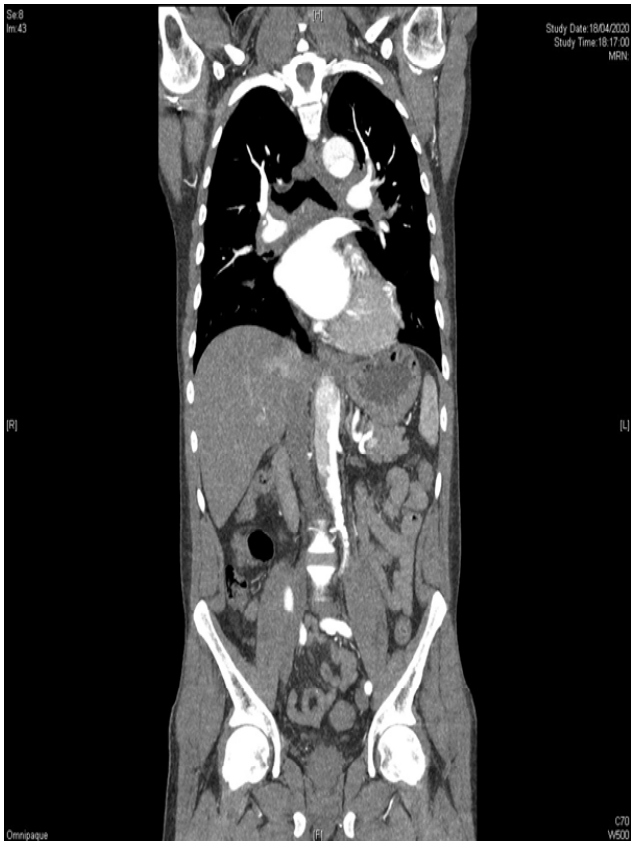

Figure 5: Dissection involving abdominal aorta-coronal.

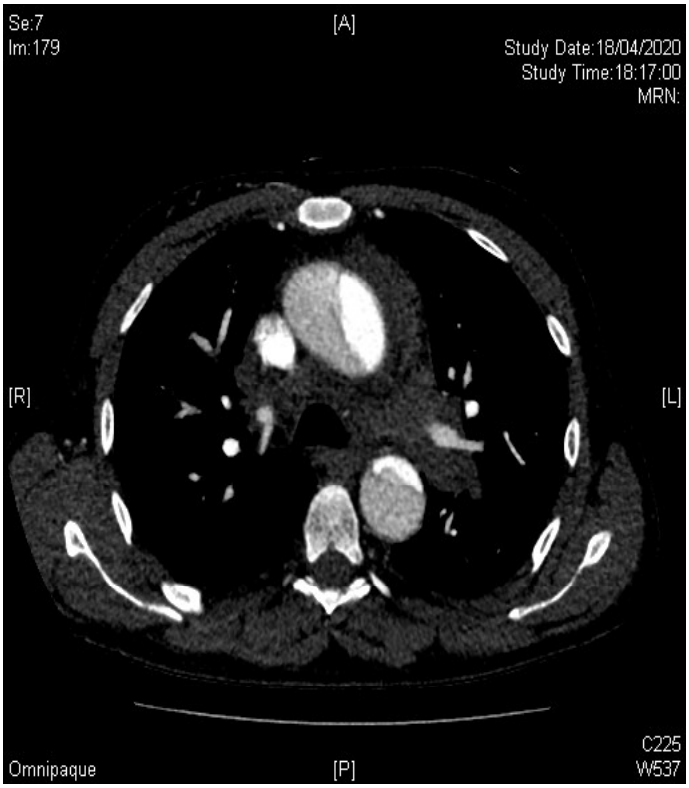

Figure 6: Dissection involving ascending and descending aorta-axial.

Discussion

Aortic dissection can involve whole aorta as in our case, and can involve other branches of aorta causing stroke, mesenteric or renal ischaemia [1].

Very rarely reported to present solely as a loin/flank pain.2 and to my knowledge this was related to occlusion or dissection of the renal arteries, but our case did not show evidence of renal artery compromise.

Risk factors (table 1), interestingly our patient had three of those risk factors (smoker, atherosclerotic disease and hypertension).

Table 1: Risk Conditions for Aortic Dissection [3].

Acquired	Long-standing arterial hypertension Smoking Dyslipidaemia, atherosclerosis Cocaine/crack
Deceleration trauma	Car accident Fall from height
Iatrogenic factors	Catheter/instrument intervention Valvular/aortic surgery
Hereditary vascular disease	Marfan syndrome Vascular Ehlers-Danlos syndrome (type 4) Bicuspid aortic valve Coarctation of the aorta
Vascular inflammation	Giant cell arteritis Takayasu arteritis Syphilis

Clinical features and Investigations [1-6]: Aortic dissection Can present with atypical features but commonly, abrupt onset chest/abdominal pain, Syncope either pain related or cardiac tamponade, acute neurological signs, anuric Acute Kidney Disease (AKI) and pulse deficit more than 20 systolic between both arms and/or aortic regurgitation murmur [4,5,6].

Negative plasma DDimer can be useful screening tool to rule out dissection.

Chest X ray can show wide mediastinum, pleural effusion or cardiomegaly

CT aortogram is the gold standard

Transthoracic or transoesophageal echo can show the dissection flap and aortic aneurysm.

Conclusion

Atypical presentation of Aortic dissection is quite common, characteristic feature in history taking which help with accurate diagnosis are character and onset of pain, presence of risk factors, appropriate imaging and investigations like DDimer. CT aortogram is the gold standard investigation due to accuracy and availability in most hospitals. Prompt medical management is analgesia, control blood pressure and urgent referral to tertiary cardiothoracic centre if appropriate [1-6].

Learning points

1. Importance of Good history in terms of onset, course and duration with associated symptoms and risk factors.
2. Clinicians should consider imaging of the aorta in patients with risk factors who present with syncope, focal neurology and/or atypical severe chest, back or abdominal pain.
3. There may be a role for D-dimer to rule out the possibility of Aortic dissection
4. Aortic dissection can present with severe loin pain as the main presenting feature- Case presentation.

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