"Doctor, I can't stand this pain!"

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Steven, 68, is a businessman who experienced a sudden onset of abdominal pain. The pain radiated to his back, leaving him:

- weakened,
- sweating,
- nauseous and
- with one episode of vomiting early in the morning.

His wife immediately brought him to the ER.

Medical history

Steven's medical history reveals that:

- he has been hypertensive for the last six years,
- he has been overweight for a number of years,
- he smokes > 20 cigarettes q.d. and has done so for many years,
- he is a moderately heavy social drinker,
- he is a borderline diabetic,
- he has chronic back problems due to a prolapsed intervertebral disc,
- his father had Type 2 diabetes, hypercholesterolemia and passed away at the age of 73 years from a heart attack,
- his mother is still alive at age 87 and
- he is taking atenolol for high BP and atorvastatin for dyslipidemia.

Physical examination

Upon examination, the following is noted:

- Steven is a little pale and sweating
- Pulse is regular at 116 bpm
- BP is 102/87 mmHg
- No abnormality was present in the cardiovascular system except for a soft mid-systolic murmur, best heard just internal to the apex
- Bilateral wheezing in the chest is more marked during expiration
- General tenderness was found in the abdomen and pain was radiating to both groin areas

Clinical investigations

Clinical investigations show the following:

- EKG: sinus tachycardia with non-specific ST-segment and T-waves changes
- Hematocrit: 36%
- White blood cell: 14.5 x 10^9/L cells
- Serum amino transferase: slightly elevated
- Lactate dehydrogenase: slightly elevated
- Creatine kinase MB: slightly elevated
- Troponin: normal

An urgent CT scan of the abdomen was performed (Figure 1).

What's your diagnosis?

a) MI
b) Ruptured abdominal aortic aneurysm
c) GI bleeding
d) Mesenteric thrombosis

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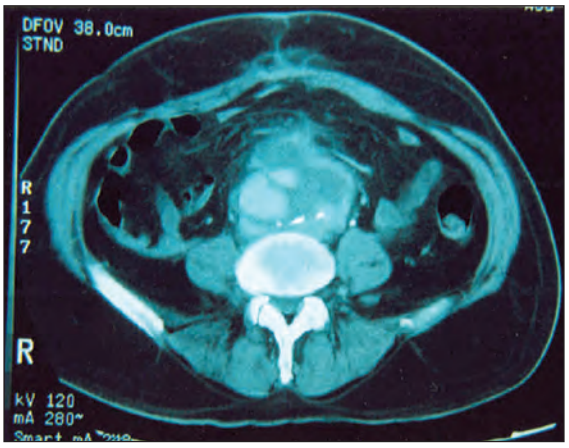

Figure 1. CT scan of the abdomen.

Answer: B

Ruptured abdominal aortic aneurysm (AAA)

What is AAA?

True AAAs are generally atherosclerotic in origin and most commonly involve the infrarenal abdominal aorta. Rupture usually occurs spontaneously without a precipitating event. Leaking of the aneurysm into the retroperitoneum (contained rupture) often precedes free rupture into the peritoneal space and is associated with premonitory signs of effective treatment.

Ruptured AAAs present in four distinct ways:

1. Free rupture
2. Contained rupture
3. Rupture into the inferior vena cava
4. Rupture into contiguous viscera

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Classic presentation

The classic presentation of a ruptured AAA includes:

- triad of hypotension,
- abdominal or back pain and
- a pulsatile abdominal mass.

The aorta needs to be evaluated urgently in patients presenting with pain in the following areas:

- back,
- abdominal, or
- groin, in the presence of a pulsatile abdominal mass.

True AAAs are generally atherosclerotic in origin and most commonly involve the infrarenal abdominal aorta. Rupture usually occurs spontaneously without a precipitating event.

If the patient is clinically stable, an urgent CT scan should be obtained to determine the presence and size of the aorta, as well as to rule out a ruptured AAA. Outcomes for repair of symptomatic AAAs are significantly worse than for asymptomatic aneurysms. Dx