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Ruptured Abdominal Aortic Aneurysm

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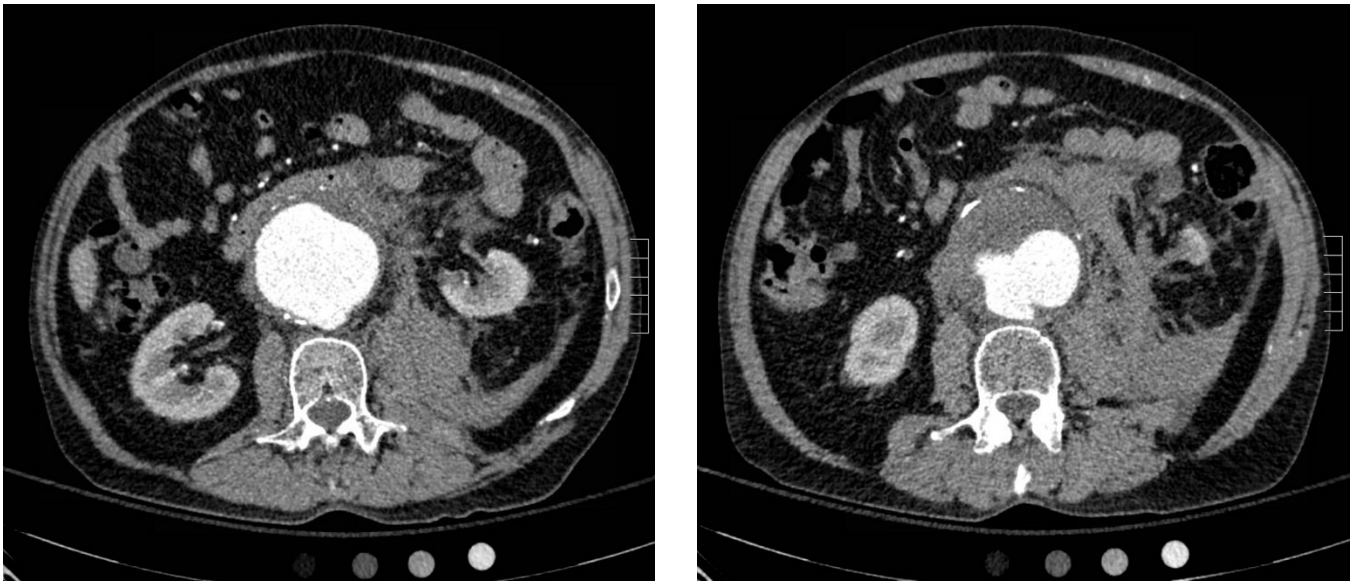

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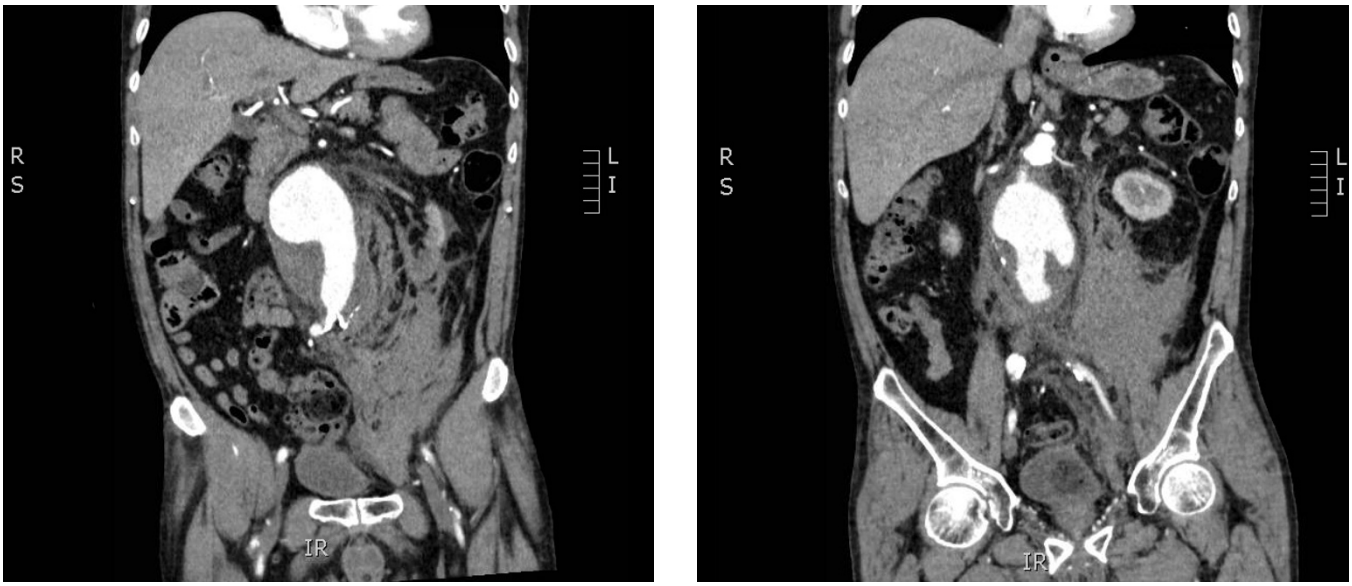

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History of present illness: A 69-year-old male with poorly controlled hypertension presented with 1 hour of severe low back pain that radiated to his abdomen. The patient was tachycardic and had an initial blood pressure of 70/40. He had a rigid and severely tender abdomen. The patient's history of hypertension, abnormal vital signs, severity and location of his pain were suspicious for a ruptured abdominal aortic aneurysm (AAA). Therefore, a computed tomography angiogram (CTA) was ordered.

Significant findings: The CTA demonstrated a ruptured 7.4 cm infrarenal abdominal aortic aneurysm with a large left retroperitoneal hematoma.

Discussion: True abdominal aortic aneurysm is defined as at least a 3cm dilatation of all three layers of the arterial wall of the abdominal aorta.[1] An estimated 15,000 people die per year in the US of this condition.[2] Risk factors for AAA include males older than 65, tobacco use, and hypertension.[1,3,4] There are also congenital, mechanical, traumatic, inflammatory, and infectious causes of AAA.[3] Rupture is often the first manifestation of the disease. The classic triad of abdominal pain, pulsatile mass, and hypotension is seen in only 50% of ruptured AAAs.[5] Pain (abdominal, groin, or back) is the most common symptom. The most common misdiagnoses of ruptured AAAs are renal colic, diverticulitis, and gastrointestinal hemorrhage.[6]

Bedside ultrasonography is the fastest way to detect this condition and is nearly 100% sensitive.[1] One study showed that bedside ultrasounds performed by emergency physicians had a sensitivity of .94 [95% CI = .86-1.0] and specificity of 1 [95% CI = .98-1.0] for detecting AAAs.[7] Computed tomography angiography has excellent sensitivity (approximately 100%) and yields the added benefit of facilitating surgical planning and management.[1]

Without surgical treatment, a ruptured AAA is almost uniformly fatal, and 50% of those who undergo surgery do not survive.[1] Early resuscitation and coordination with vascular surgery should be pursued without delay. The concept of permissive hypotension (target systolic blood pressure 90 mmHg) in patients with a ruptured AAA is controversial. Until there are randomized controlled trials supporting patient-centered benefits, such as improved mortality, clinicians should refrain from permissive hypotension.[8]

Topics: Abdominal aortic aneurysm, AAA, CT, ultrasound, low back pain, vascular surgery, critical care.

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