



Case Report

Imaging features of left ovarian and renal venous aneurysms: two case reports and literature review



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ABSTRACT

Venous aneurysms rarely occur in the visceral veins. We report two extremely rare cases of venous aneurysms, one of the ovarian vein and the other one of the renal vein. The aneurysms were depicted on grayscale and color Doppler ultrasonography as anechoic saccular structures with compressibility and blood flow. Pulsed Doppler ultrasonography showed venous flow. Contrast-enhanced computed tomography showed aneurysmal venous dilatation. We diagnosed left ovarian and renal venous aneurysms. We also review the clinical presentation and implications of visceral venous aneurysms.

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A primary venous aneurysm is defined as a focal dilation of a vein in the absence of associated varicose veins. Venous aneurysms are not as common as arterial aneurysms [1,2]. Most venous aneurysms develop from superficial veins in the head, neck, or extremities. Venous aneurysms in the abdomen or visceral venous aneurysms are rare, and the common locations are the portal vein, superior mesenteric vein, inferior vena cava, and splenic vein [3]. We report two extremely rare cases of venous aneurysms, one of the ovarian vein and one of the renal vein, with review of the literature.

1. Case descriptions

1.1. Case 1

A 62-year-old woman suffered from right flank discomfort for several weeks. The physical examination revealed no palpable mass. The laboratory results, including complete blood count, electrolytes, and liver function test, were unremarkable. She had no signs of liver disease or portal hypertension. She had no specific past medical or family history except a 3.8-cm right parapelvic cyst, which was discovered incidentally on ultrasonography (US) on a routine scan a year ago.

US examination revealed that the right parapelvic cyst had increased in size to 7 cm in diameter, which was a possible cause for the patient's symptoms. Another anechoic 3.3-cm saccular lesion was incidentally

detected in the left abdomen. This anechoic cystic structure showed compressibility and venous flow on Doppler US (Fig. 1). Contrast-enhanced computed tomography (CT) was performed for further evaluation. On CT, the anechoic saccular lesion was confirmed to be an aneurysm of the left ovarian vein (Fig. 1). The management plan for the left ovarian venous aneurysm was regular follow-up for newly developing symptoms or possible complications, including thrombosis and embolism. US-guided aspiration was performed for the right parapelvic cyst, after which the patient's symptoms resolved. A follow-up CT scan 5 months later showed a persisting 3.3-cm saccular left ovarian venous aneurysm without significant change. The patient was free of symptoms and complications after 24 months of follow-up.

1.2. Case 2

A 27-year-old man was referred to our hospital because of an incidentally detected abnormality on a screening US at another hospital. He had no symptoms, and the laboratory data were within normal limits. The physical examination revealed no palpable mass. He had no signs of liver disease or portal hypertension. He had no specific past medical or family history.

He underwent an abdominal US at our hospital, which showed an anechoic oval-shaped saccular lesion medial to the left kidney (Fig. 2). The Doppler US revealed venous flow, and the panoramic view proved it to be a dilated and convoluted left renal vein. On contrast-enhanced CT, aneurysmal dilatation of the proximal left renal vein with an abnormal draining vein was noted (Fig. 2). There were no compression of the renal vein between the superior mesenteric artery and the aorta or splenorenal shunt in the setting of portal hypertension. We suggested

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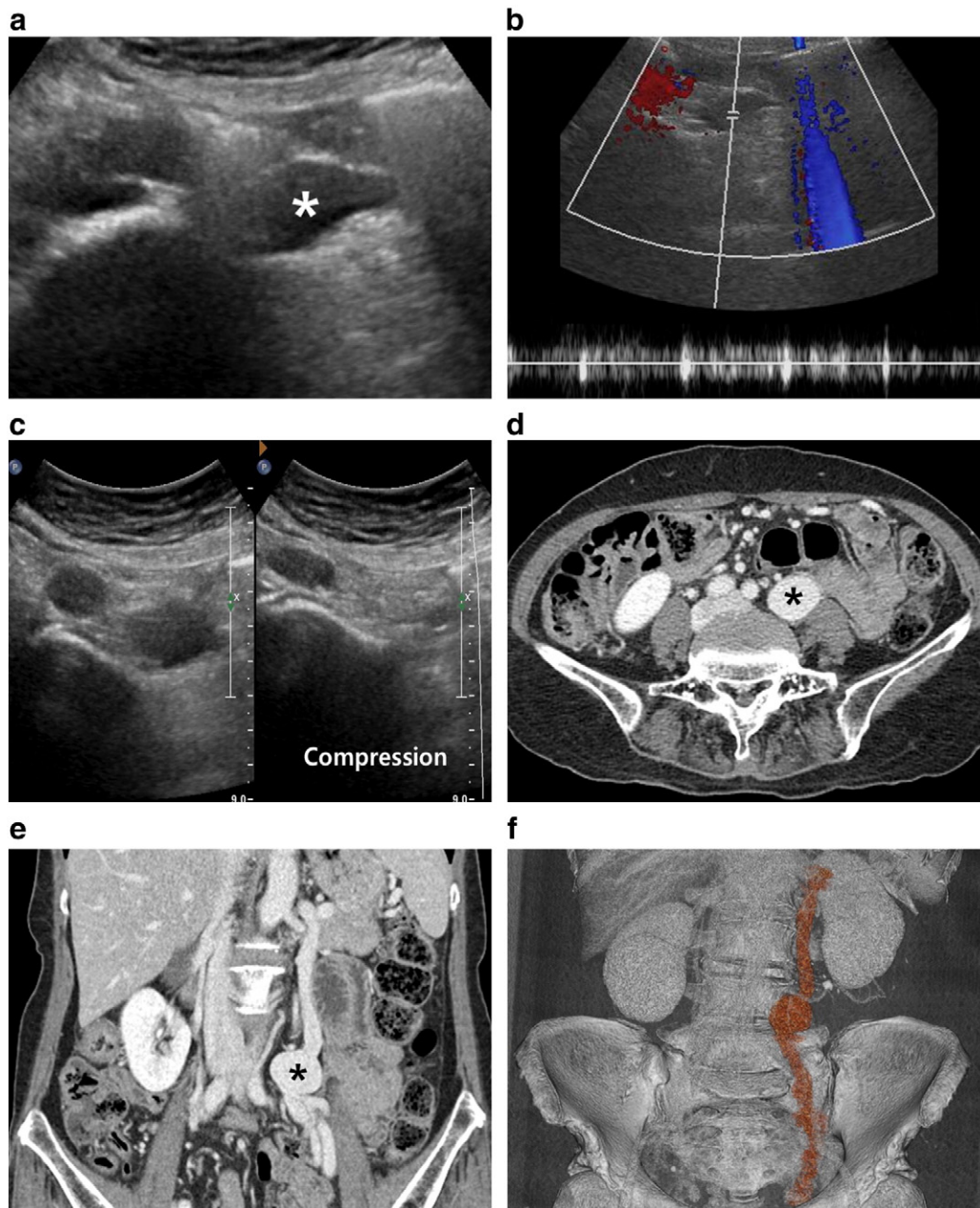


Fig. 1. Case 1. **(a and b)** Grayscale **(a)** and pulsed Doppler **(b)** US show an anechoic sacular structure (*) with internal venous flow. **(c)** This structure collapsed with manual compression and was proven to be a vein (left side). **(d and e)** Venous phase of an axial image **(c)** and coronal reformatted image **(d)** of contrast-enhanced CT show aneurysmal dilatation (*) and a tortuous appearance of the left ovarian vein. **(f)** Volume rendering reconstructed image demonstrates the course of the left ovarian vein with aneurysmal dilatation.

several treatment options such as surgery or endovascular treatment, but he declined intervention. We then recommended that the patient receive follow-up for newly developing symptoms or possible complications, including thrombosis and embolism. The patient was free of symptoms and complications in 7 years of follow-up.

2. Discussion

A venous aneurysm is described as a solitary area of venous dilatation that communicates with a main venous structure by a single channel, and it must have no association with an arteriovenous communication or a pseudoaneurysm [4]. The distinguishing point between a venous aneurysm and a varicose vein is that the former is the dilatation of a restricted region of the vein without extension or meandering of the vessel. Moreover, a varicose vein usually results from valve failure, whereas the precise etiology of a venous aneurysm remains unclear

[5]. Although their etiology is not yet clarified, aneurysms can be divided into congenital and acquired types. Some reports suggest that venous aneurysms are developmental, perhaps secondary to a weakness of elastic fibers in the vein wall [1,6]. Generally, trauma, inflammation, congenital weakness or degenerative changes in the venous wall resulting from a connective tissue disorder, and a local inflammatory process or cardiovascular abnormalities producing increased venous pressure should be considered as possible causes [7,8]. Forceps handling, extensive mobilization of the vein, and aggressive manual intraluminal dilation of the vein may result in trauma to the vessel that may later lead to aneurysm formation [9].

The true incidence of primary venous aneurysms is not known. In a systemic review of 93 reports including 176 patients with 198 visceral venous aneurysms, the most frequent location was the portal venous system (191 of 198 aneurysms, 96.5%) and is often associated with liver cirrhosis and portal hypertension. Renal vein aneurysms (6 of

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