

Renal Vein Thrombosis

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Section: Uroradiology & genital male imaging

Imaging Technique: Ultrasound

Imaging Technique: Ultrasound-Colour Doppler

Imaging Technique: CT

Case Type: Clinical Cases

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Patient: 33 years, female

Clinical History:

The patient was admitted to the hospital with sudden onset of left shoulder pain moving to the abdomen, presenting as an acute renal colic-like syndrome. There was no fever, no cough nor respiratory distress. She had no urinary complaints and didn't mention recent trauma. She had taken oral contraceptives for 14 years. Laboratory examinations revealed elevated CRP (7.2 mg/mL), proteinuria (0.24 g/h) and haematuria (urine-analysis: 76 RBC, 94% dysmorphic). Ultrasonography and CT scan were performed. Duplex ultrasonography was repeated after therapy.

Imaging Findings:

A 33-year-old female was admitted to the hospital with sudden onset of left shoulder pain moving to the abdomen, presenting as an acute renal colic-like syndrome. There was no fever, no cough nor respiratory distress. She had no urinary complaints and didn't mention recent trauma. She had taken oral contraceptives for 14 years. Laboratory examinations revealed elevated CRP (7.2 mg/mL), proteinuria (0.24 g/h) and haematuria (urine-analysis: 76 RBC, 94% dysmorphic). Ultrasonography and CT scan were performed. Duplex ultrasonography was repeated after therapy. The clinical data, with the pertinent predisposing factor of oral contraceptives and imaging findings are diagnostic for acute (partial) thrombosis of the renal vein.

Discussion:

Increased renal size, altered echogenicity, loss of corticomedullary demarcation, enlargement of the renal vein and demonstration of a thrombus are indicative but non specific ultrasonographic findings of renal vein thrombosis. They may be entirely absent in equivocal cases. Doppler analysis of the intrarenal arterial flow may demonstrate markedly reduce diastolic flow or inversed diastolic flow. This is suggestive for increased intrarenal pressure due to interstitial oedema and venous obstructive disease. The diagnosis of partial renal vein thrombosis was suggested at ultrasonography and confirmed with contrast enhanced spiral CT which is much more appropriate. After thrombolytic treatment patency of the renal vein regained, as proven by disappearance of the thrombus on CT and the normal perfusion of the renal parenchyma at duplex ultrasonography. Other acute diseases affecting one kidney that may cause asymmetric elevation of the resistive indices are ureteral stone and acute pyelonephritis. Patient's history is an important key in the differential diagnosis.

Differential Diagnosis List: Renal Vein Thrombosis

Final Diagnosis: Renal Vein Thrombosis

References:

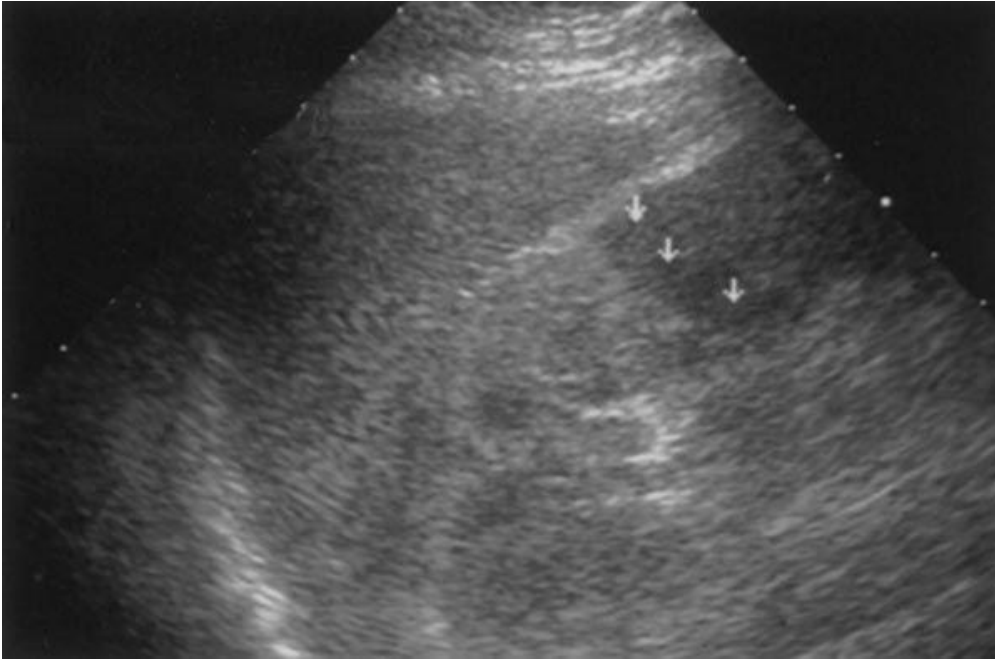
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Figure 1

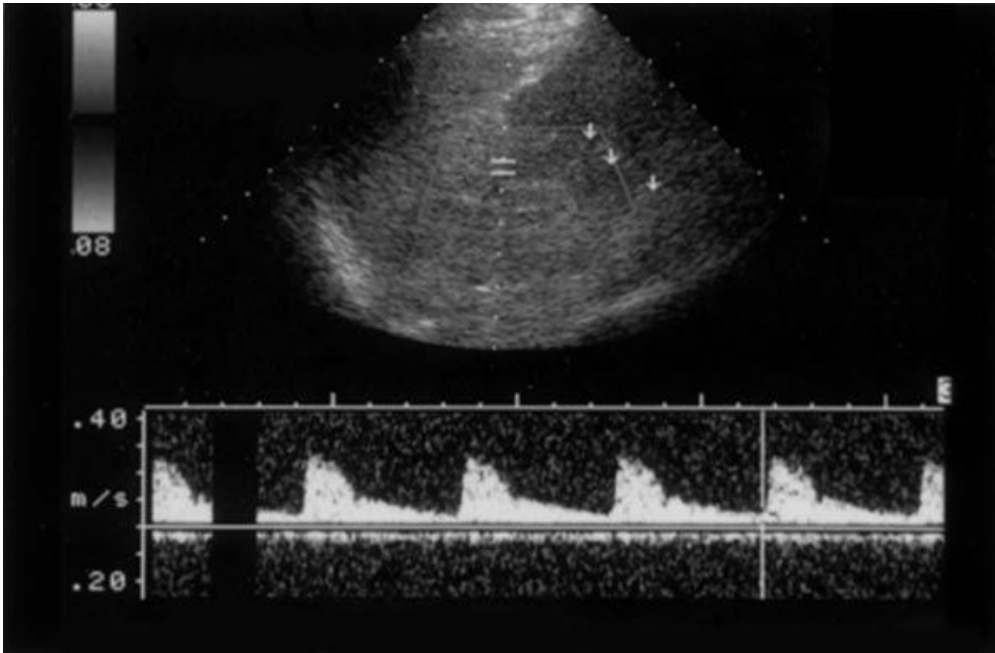
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Description: Ultrasonography of the left kidney shows hyperechogenicity of the upper renal pole and loss of corticomedullary demarcation. **Origin:**

Figure 2

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Description: Duplex ultrasonography of the left renal upper pole demonstrates increased resistive indices in the upper pole ($> 80\%$ vs $< 70\%$ in the lower pole and in the right kidney). **Origin:**

Figure 3

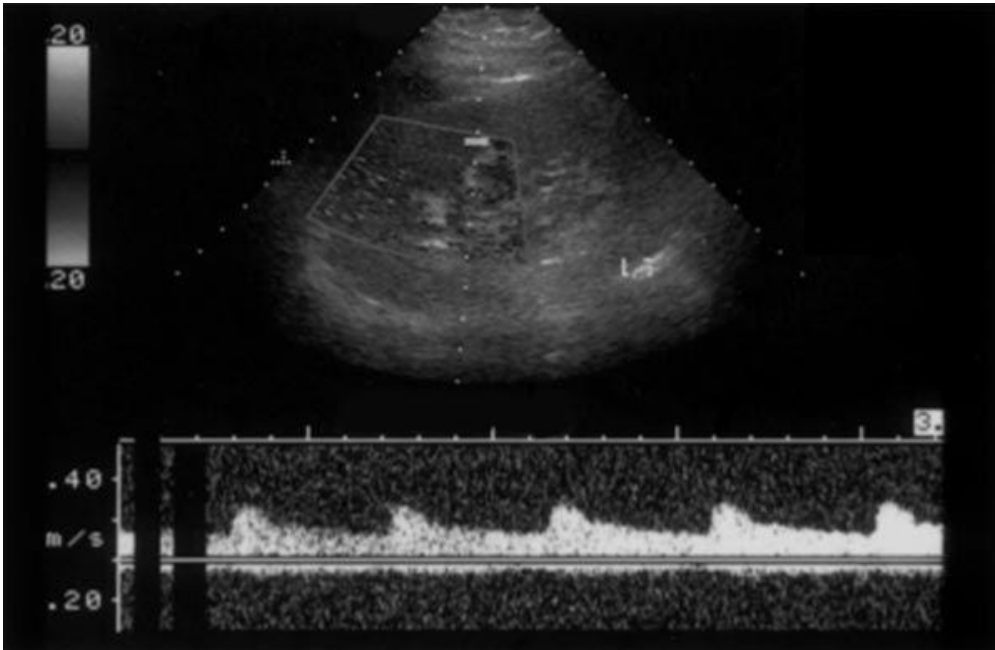
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Description: Contrast enhanced CT of the abdomen visualized a filling defect in the renal vein and diminished enhancement of the posterior aspect of the left kidney. **Origin:**

Figure 4

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Description: Duplex ultrasonography of the left renal upper pole shows normalization of the intrarenal arterial flow after successful thrombolytic treatment. **Origin:**