Vascular compression of left renal vein: the nutcracker phenomenon

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DESCRIPTION

A 75-year-old woman presented to the outpatient clinic with symptoms of upper abdominal pain radiating to the back. On evaluation with contrast-enhanced CT of the abdomen, she was found to have carcinoma of the body of pancreas. Incidentally, vascular compression of the left renal vein was seen between the superior mesenteric artery and the aorta (the nutcracker sign) (figure 1).

In view of poor performance status, she underwent palliation with percutaneous splanchnic nerve radiofrequency ablation. Since she was asymptomatic for the vascular compression and serum creatinine was normal (1.2 mg/dL), she was observed for the same.

Nutcracker phenomenon is the vascular entrapment of the left renal vein (equivalent to nut) between the aorta and superior mesenteric artery (equivalent to hinged levers of a nutcracker) (figure 2). If symptomatic, it is known as nutcracker syndrome (NCS). The imaging equivalent of this phenomenon is the nutcracker sign. NCS was described as early as 1950 although the term nutcracker was introduced by Chait et al2 in 1971.

Nutcracker phenomenon refers to the compression of the left renal vein between the superior mesenteric artery and abdominal aorta.

It is more common in women. Clinical manifestations include left flank pain, haematuria, gonadal varices, hypertension and renal vein thrombosis. About one-third of the patients with vascular compression develop symptoms. If symptomatic, treatment is usually by endovascular methods.

Learning points

▸ Nutcracker phenomenon refers to the compression of the left renal vein between the superior mesenteric artery and abdominal aorta.
▸ It is usually asymptomatic or may present with symptoms such as left flank pain, haematuria and hypertension, and hence it is called nutcracker syndrome.
▸ Symptomatic patients can be successfully managed with endovascular methods in majority of the cases.

REFERENCES
