ORIGINAL RESEARCH PAPER

Radio-Diagnosis

AN INCIDENTAL FINDING OF NUTCRACKER PHENOMENON ON HRCT THORAX SCAN IN A YOUNG MALE PATIENT-A CASE REPORT.

KEY WORDS:

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ABSTRACT

Nutcracker syndrome is the clinical diagnosis, Whereas nutcracker phenomenon (NCP) refers only to morphologic compression of the left renal vein between the SMA and the aorta, with impaired blood outflow often accompanied by distention of the proximal portion of the vein. [2]

Although uncommon, it can clinically manifest with intermittent hematuria, dysuria, flank or abdominal pain. It may be asymptomatic for long period and constitute casual findings. Ultrasound is the first-line imaging which require more accurate study with contrast-enhanced computed tomography.[1,2]

INTRODUCTION:

Nutcracker syndrome (NCS) is caused by compression of the left renal vein (LRV) between the aorta and the superior mesenteric artery (SMA) where it passes in the fork formed at the bifurcation of these arteries.[1]

In Nutcracker phenomenon there is no clinical symptoms of nutcracker syndrome but one can find compression of the left renal vein between SMA and Aorta with proximal dilatation of the left renal vein.

Herein, we report a case Nutcracker Phenomenon as an incidental finding on HRCT Thorax scan in a young male patient.

Case report:

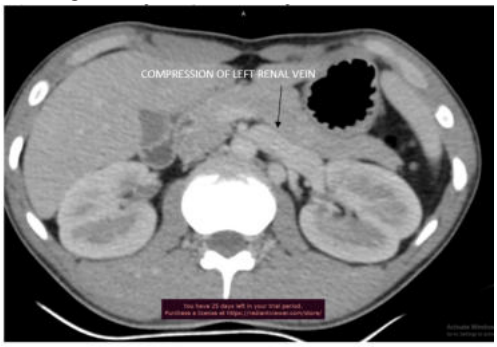
A 19-year-old male presented to hospital with complains of chest pain (right side) , fever, cough, with weight loss and intermittent abdominal pain since 2 months.

He was referred to our radiology department and underwent HRCT (Plain + Contrast) scan/ CT of the thorax using GE CT 128 slice scanner.

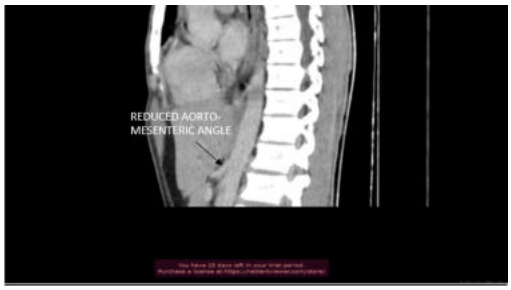
CT scan revealed a large relatively well defined heterogeneously enhancing sub pleural soft tissue density lesion with spiculated margins in the right middle lobe with abrupt cut off involving the segmental bronchus with no evidence of calcification or necrosis within. There was no evidence of bony erosion or intravascular extension.

It also showed mild right sided pleural effusion with passive atelectasis and fissural extension with interlobular septal thickening with minimal streak of fluid in the left pleural cavity. Mediastinal lymphadenopathy was also detected.

Also, a reduced aorto-mesenteric angle with compression of the traversing left renal vein was observed.



AXIAL VIEW



DISCUSSION:

Nutcracker syndrome (NCS) was first described in 1950 by El Sadr and Mina.[3] In 1972, de Schepper gave the name "nutcracker syndrome" to the disease, [4] as the LRV between the aorta and the SMA resembled a nut between the jaws of a nutcracker.

NCS is classified as either anterior or posterior. The anterior NCS, which is the most common, is defined by the compression of the LRV between the aorta and the SMA.[1,2]

It can be often recognized by correlating imaging findings to the clinical presentation. More challenging is the diagnosis of the nutcracker phenomenon due to the lack of symptoms and in fact often an occasional detection during routine imaging studies.[5,6,7,8,9]

In this case , the patient had come for primarily for investigation of Thorax related symptoms, however we were able to diagnose the nutcracker phenomena on CT thorax scan as the slices are usually taken from apex of the lungs till the hilum of kidneys.

Hence, we were able to incidentally estimate the anterior nutcracker phenomenon on CT scan. Studies in literature have found similar incidental finding of nutcracker syndrome on CT scan in asymptomatic population.[6,7,8,9]

Work up for NCS includes a series of tests such as Doppler ultrasound (DUS), CT scan, magnetic resonance imaging, angiography and retrograde phlebography.[1,2,5,10]

Usually Ultrasonography is a good primary imaging modality, Ct scan is able to show the compression of the left renal vein between the aorta and superior mesenteric artery and the coexistence of abnormal venous collaterals.[5,6,9,10]

The management of Nutcracker Syndrome depends upon the clinical presentation and the severity of the left renal vein hypertension with options ranging from simple surveillance to surgical interventions.[1,2,5]

CONCLUSION:

The NCP and NCS are rare disease entities. It may be totally asymptomatic, often diagnosed as a transient incidental finding in medical imaging studies .

It represents a challenge in terms of accurate diagnosis and management.

CT scan can be a reliable diagnostic modality.

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