Case Report

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Imaging Appearance of Enlarged Cisterna Chyli Mimicking Retroperitoneal Nodal Disease; A Rare Case Report

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ABSTRACT

It is very common to see enlarged retroperitoneal lymph nodes. However there are circumstances where we report an enlarged retroperitoneal lymph node that is actually not pathological rather an enlarged cisterna chyli mimicking retroperitoneal nodal disease.

A case report of a patient with known hepatocellular carcinoma, CT scan triphasic liver was performed and a finding was made with enlarged retroperitoneal lymph node involved by the disease process, however MRI and FNAC correlation was advised, which turned out to be an enlarged cisterna chyli rather than enlarged retroperitoneal node.

Key words: Cisterna chyli, CT scans.

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Introduction

The cisterna chyli is a dilated sac-like receptacle located in the retroperitoneum, which extends cranially as the thoracic duct. It is typically found at the L1–L2 vertebral level, situated posteriorly to the abdominal aorta. However, it may not always be visualized on imaging studies. An enlarged cisterna chyli, measuring up to 6mm, can mimic an enlarged retroperitoneal lymph node.[1]

Case Report

We present a case of a nodular retroperitoneal lesion seen on CT scan of a patient of known case of Hepatocellular carcinoma on the background of chronic liver disease, this nodular lesion was seen in reteroperitoneum, on right side of inferior vena cava, which was reported as an enlarged retroperitoneal lymph node involved by disease process. As it is extremely rare for hepatocellular carcinoma to give retroperitoneal lymphadenopathy so on in house MDT discussion of this case, MRI, endoscopic ultrasound and FNAC of this retroperitoneal node was planned.

On MRI, there was redemonstration of retroperitoneal small saccular area of fluid signal at the L2 level of the vertebral body towards the right side of IVC. This is demonstrating T1 iso- T2 hyperintense with heterogenous enhancement on post contrast sequences, this may represent likely Cisterna Chyli.

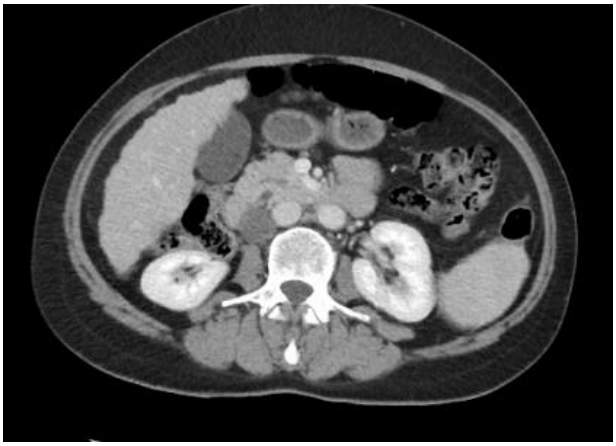
Endoscopic ultrasound (EUS) was also performed for further evaluation of this lesion. On EUS, a 27 x 20 mm rounded mass was seen adjacent to D2 and close to the IVC. This had a solid appearance and a homogeneous echo-texture. Using a 22 G needle, three passes were made and tissue obtained for cytologic evaluation, for mycobacterial culture and for immunohistochemistry.

FNAC, which was conducted through endoscopic ultrasound, was reported to have hypocellular smears showing reactive lymphoid tissue and duodenal epithelium. It favours an enlarged cisterna chyli.

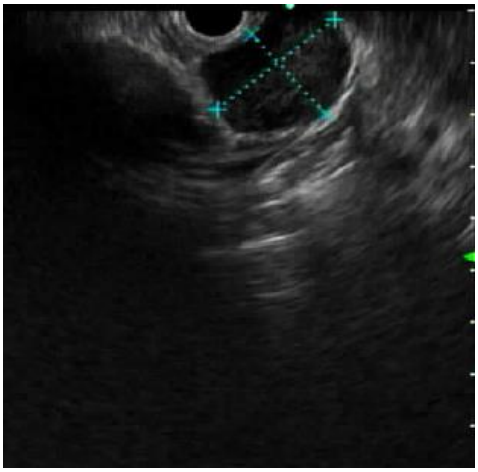
Discussion

The cisterna chyli is a retrocrural, dilated lymphatic sac often located anterior to the L1-L2 vertebral body. Lymphatics from the abdomen, including those from the liver and intestines, drain into it through smaller lymphatic channels. Normally, two lumbar trunks and one intestinal trunk provide lymphatic drainage to the cisterna chyli. From there, lymph travels cephalad into the thoracic duct before ultimately draining into the left subclavian vein at

the junction with the left internal jugular vein. The cisterna chyli is actually the caudal aspect of the thoracic duct, with a saccular dilatation. Its extent is described as the superior aspect of the L2 vertebral body to the inferior aspect of the T11 vertebral body.[1,2] On average, it measures 7.4 mm in anteroposterior, 7 mm in transverse, and 15 mm in craniocaudal dimensions.[2] It has an attenuation similar to water, aiding in its differentiation from an enlarged retroperitoneal node.

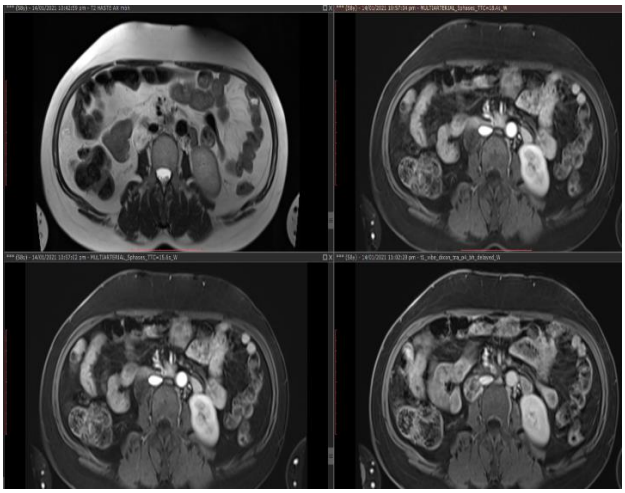


CT scan showing a rounded structure adjacent to Inferior vena cava, reported as an enlarged reteroperitoneal node.



Endoscopic ultrasound (EUS) was also performed for further evaluation of this lesion. On EUS, a 27 x 20 mm rounded mass was seen adjacent to D2 and close to the IVC. This had predominantly cystic and a homogeneous echo-texture.

Sometimes, a cisterna chyli larger than 6 mm may appear as an enlarged retroperitoneal node on imaging. However, its tubular configuration and water attenuation help to differentiate it from a pathological node.[1] Although an enlarged cisterna chyli is a rare finding and often misinterpreted, its distinguishing features on abdominal CT scans include its tubular appearance, lack of enhancement with intravenous contrast, and low attenuation similar to that of water.[3]



On MRI , there is redemonstration of retroperitoneal rounded structure anterior to L2 vertebral body towards the right side of IVC. This appears T2 hyperintense with no enhancement on arterial or portovenous phased and showing enhancement on delayed phase.

The cisterna chyli, located anterior to the T11–L1 level, is seen in less than 2% of routine abdominal CT scans.[4] Characteristic features include its location and well-defined homogeneous appearance with water attenuation.[4] It is usually small but can measure up to 2 cm, and radiologists should be aware of it before reporting it as a lymph node. A left-sided cisterna chyli has also been described.[4]

On MRI, the cisterna chyli typically shows no enhancement on arterial or portovenous phases but demonstrates intense enhancement on delayed phase imaging, compared to nearby veins.[5] Interestingly, it has been observed that an enlarged cisterna chyli is more common in patients with cirrhotic liver disease, as seen in cases such as hepatocellular carcinoma on the background of cirrhotic liver disease. This phenomenon is explained in terms of increased portal venous pressure and serum albumin, resulting in increased flow through lymphatic channels.[5]

An enlarged cisterna chyli has been noted on CT and MRI scans in 1.7% and 15% of patients, respectively.[6] Multiple causes of an enlarged cisterna chyli include uncompensated cirrhosis, lymphangioleiomyomatosis, hypoalbuminemia, high central venous pressure, pancreatobiliary blockage, and lymphatic injury following earlier gastroesophageal or retroperitoneal surgery. Other

causes mimicking an enlarged retroperitoneal node include an interrupted inferior vena cava with an azygos continuation and other venous malformations.[3]

In summary, the cisterna chyli can mimic the appearance of an enlarged retroperitoneal lymph node. Proper identification depends on its characteristic location, tubular configuration, attenuation closer to that of water than soft tissue, enhancement pattern of delayed enhancement, and lack of substantial change in size despite changes in disease at other sites.

Conclusion

The purpose of this case presentation is for the radiologist to accurately evaluate the retroperitoneal lymph nodes, considering their characteristic location, tubular configuration, low attenuation, enhancement pattern, and potential causes of an enlarged cisterna chyli before diagnosing it as an enlarged retroperitoneal nodal disease.

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