Beaver tail liver: An uncommon presentation

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SUMMARY

The beaver tail liver represents an anatomical variation where the left lobe extends beyond the midline, reaching laterally into the left side of the abdomen and occasionally enveloping the spleen. This uncommon variation in liver anatomy has clinical implications, including potential diagnostic challenges and increased susceptibility to trauma or iatrogenic injury. Diagnosing this variant can be intricate due to its similar echogenicity in ultrasound (USG) and density in computed tomography (CT) images. We present a case where a beaver tail liver manifested as an extraluminal mass, causing compression on the gastric fundus during an oesophagogastroduodenoscopy examination. This report aims to underscore the diverse presentation of this clinical condition.

INTRODUCTION

The anatomical variant known as the beaver tail liver, or liver sliver, is characterised by the left lobe extending laterally to make contact with and enclose the spleen, resembling the tail of a beaver. This feature is more prevalent among females. Radiologically, ultrasound (USG) may exhibit similar echogenicity with the spleen. However, the use of colour Doppler is valuable in identifying the hepatic vascular structures, aiding in the differentiation from perisplenic haematoma or renal structures.[1]

CASE PRESENTATION

A 36-year-old male presented to the emergency department with per chronic rectal bleeding and symptomatic anaemia. Physical examination revealed grade 1 haemorrhoid without signs of recent bleeding. Oesophagogastroduodenoscopy identified an extraluminal mass causing partial compression at the gastric fundus (Fig. 1). The upper scope easily passed, reaching duodenum D2 with no significant findings, and colonoscopy revealed no abnormalities. A computed tomography (CT) abdomen showed a homogeneously enhanced liver with a smooth margin. However, the left lobe of the liver was elongated, extending laterally in contact with the spleen (Fig. 2). The biliary system and liver vasculatures appeared normal, with no other reported abnormalities. Rubber band haemorrhoidal banding was performed, and the patient was discharged in good condition after optimising the haemoglobin level.

DISCUSSION

The beaver tail liver, more commonly found in middle-aged females, is often asymptomatic and discovered incidentally through CT imaging for unrelated reasons. Limited literature, particularly in paediatrics, documents its incidence and geographical distribution.[2]

There have been cases of misinterpretation during trauma assessments, where it was initially mistaken for splenic subcapsular hematoma or perisplenic fluid collection.[3] In an unusual presentation, it resembled an organised haematoma during coronary artery bypass graft surgery (CABG).[4] This report is the first to identify the beaver tail liver causing an extraluminal mass compressing the gastric fundus.

While the beaver tail liver does not pose additional pathological risks, it can impact patient management. The Focused Assessment with Sonography for Trauma (FAST) scan, crucial for evaluating blunt abdominal trauma, may incorrectly identify the extended left liver lobe as a splenic haematoma. Careful sonographic examination of the perisplenic region, including assessing hepatic and portal veins, helps differentiate the liver variant from perisplenic haematoma.[5]

Due to its extension into the left lateral abdomen, trauma to this area increases the risk of injury. Lack of awareness about this anomaly may lead to complications during operative interventions,[6] such as percutaneous gastrostomy tube or percutaneous endoscopic necrosectomy.[7]

In the context of liver transplantation, ensuring donor safety is crucial. Studies suggest that individuals with a liver extending to the left hypochondrium have a secure postoperative remnant volume. The beaver tail liver feature, indicating an extended left liver lobe, could be a positive marker for safe transplantation, especially when 3D volumetric evaluation is not possible. Living liver donors with this feature may have a safer recovery and better outcomes due to a larger remaining liver volume.[8]

Hence, the beaver tail liver feature emerges as a potential positive marker for safe transplantation, emphasising the importance of further research in assessing its incidence, geographical distribution, and impact. The classification of the beaver tail liver anatomy, especially in terms of the extent of contact and enclosure between the left liver lobe and spleen, could prove valuable for future clinical applications.

CONCLUSION

The beaver tail liver is often discovered incidentally but presents with diverse manifestations and potential

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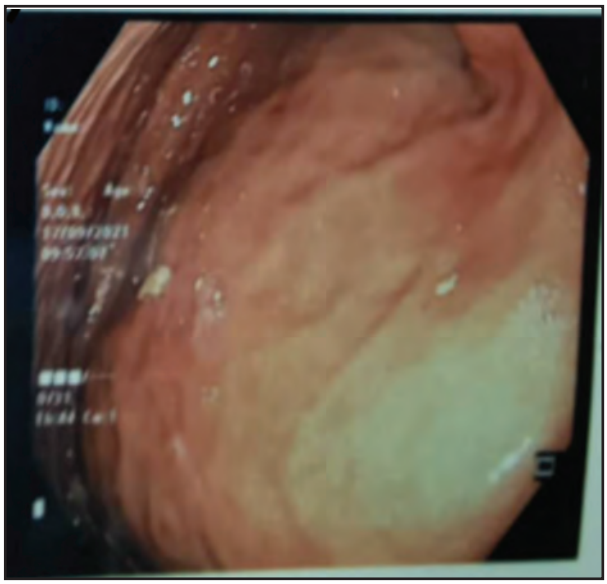

Fig. 1: Oesophagogastroduodenoscopy image shows the presence of extraluminal mass (arrow) causing compression at the gastric fundus

Fig. 2: Oesophagogastroduodenoscopy image shows the presence of extraluminal mass (arrow) causing compression at the gastric fundus

misinterpretations during trauma assessments. While not posing additional pathological risks, its implications for patient management, underscore the need for awareness.

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CONFLICT OF INTEREST

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