CASE REPORT

Intrathoracic Accessory Lobe of the Liver

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Introduction

Accessory lobe of the liver is an uncommon anatomical anomaly that is usually asymptomatic and found incidentally at laparotomy or autopsy. A intrathoracic accessory lobe is even rarer and when detected incidentally presents a diagnostic dilemma. The object of this report is to draw attention to this rare entity and highlight the role of radionuclide scintigraphy in its diagnosis.

Case Report

A 23 year soldier posted in a high altitude area developed features of high altitude pulmonary oedema for which he was treated in a zonal hospital. The patient's biochemical and haematological parameters were normal, however, radiological examination revealed a smooth rounded mass approximately 5cm by 7 cm in the right lower zone. Upper gastrointestinal barium studies were within normal limits. A CT scan of the chest was undertaken and it revealed a soft tissue mass in the right lower zone with soft tissue attenuation similar to liver. A possibility of accessory lobe of liver was considered and the patient was referred for radionuclide studies to confirm the diagnosis. A hepatic scan was performed by administering 5 milli Curie 99m Technitium sulphur colloid intravenously and taking images in anterior, posterior and right lateral projections. The radio pharmaceutical was seen to accumulate uniformly in the liver and spleen and also in the right intrathoracic mass. The right lateral projection showed the caudal end of the intrathoracic mass to be in continuity with the postero-superior surface of the right lobe of liver. (Figure 1)

Discussion

Accessory lobe of the liver is an uncommon anatomical variation that is usually asymptomatic (1). According to Collan (2) the liver tissue in communication with the main liver is termed as an accessory lobe while the liver tissue in the vicinity of the liver with no communication is termed ectopic liver. Sato et al (3) in a series of 1800 laproscopies found congenital anomalies of the liver in 19% cases with the incidence of ectopic liver lobe and accessory liver lobe being 0.7%. Embryologically the lungs and liver are derived from endodermal diverticuli of the foregut and are in close proximity.

Figure 1: Different views of liver obtained with Tc-99m sulphur colloid imaging
between the 3rd and the 8th week of development. It is thought that a bud of hepatic tissue is pinched off from the main mass before closure of the diaphragm at 8 weeks of development and remains in communication with the liver by a vascular pedicle (4). These connections are predominantly seen to occur on the right side (1) as was seen in our case.

Accessory lobes are most commonly found on the undersurface of the liver, but have also been seen on the gall bladder surface (5), hepato-gastric ligament, near the umbilicus, adrenal gland (4), pancreas and the thoracic cavity. Accessory intrathoracic liver lobe was first reported by Hansborough and Lipin in 1975 (6). Histologically these lobes show normal hepatic tissue though atypical cirrhosis, centrilobar congestion and chronic inflammatory changes have been described (6). In our case biopsy of the mass was not undertaken. Generally an intrathoracic accessory lobe remains asymptomatic, however, these masses have been known to present with dyspnoea, chest pain and haemoptysis (4). Our patient was asymptomatic prior to the development of high altitude pulmonary oedema and has remained asymptomatic after the high altitude pulmonary oedema subsided.

Differential diagnosis of a supradiaphragmatic mass includes conditions like a diaphragmatic tumor, chest tumor, diaphragmatic eventration and even a hydatid cyst of the lung. Ultrasonography, colour doppler, CT scan, scintigraphy and laparoscopy have all been used as diagnostic tools in the evaluation of a supradiaphragmatic mass. Ultrasonography and Colour Doppler studies help by showing the mass penetrating the diaphragm and its vascular supply through the pedicle (7).

CT scan studies show the morphology and architecture of the mass and confirm attenuation values similar to those of the main liver (8). Radionuclide imaging with sulfur colloid showing uptake of the radiotracer in the mass reveals the presence of reticuloendothelial cells in the mass and aid in confirming the hepatic nature of the mass as was seen in our case. Also, radionuclide SPECT (single photon emission computerized tomography) studies can effectively show the pedicle connecting the accessory lobe with the main liver.

References: