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Case Report

Emergency right hepatectomy for a rare presentation of hepatic adenoma

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ABSTRACT

We describe a unique case of a 65-year-old woman who had a hepatic adenoma compressing her right lung, inferior vena cava, and right ventricle, which had been the cause of her breathing problems, which had been becoming worse for the preceding six months. Through a right thoracoabdominal incision, an urgent right hepatectomy was carried out to manage her condition.

Keywords: Hepatic adenoma, Emergency hepatectomy, Breathlessness

INTRODUCTION

Most often affecting young and middle-aged women, hepatocellular adenoma (HCA) is an uncommon benign liver tumour linked to the use of oral contraceptives or other steroid drugs. Unlike other benign liver tumours, HCA may be complicated by bleeding and malignant transformation.[1] The annual incidence of hepatic adenomas in oral contraceptive pill users ranges from 30 to 40 cases per million, compared to 1 to 1.3 cases per million among nonusers.[2]

In some ways, our case is extremely rare, as the first patient is an elderly female who presented with grade IV dyspnea and oedema over the lower half of her body, and the second, difficult emergency right hepatectomy was performed successfully, despite the tumor's thoracic extension and compression of the inferior vena cava and right ventricle.

CASE REPORT

A 65-year-old female known to be hypertensive and diabetic presented to us with a six-month history of shortness of breath and one-month oedema over the lower half of her body. Prior to referral to our center, she had grade 2 dysnoea, which deteriorated over the last 4 weeks, for which she was evaluated at a local hospital. On imaging, a liver space occupying lesion was found in the right lobe of the liver. When she presented to us, she was in grade IV dyspnea, and her sleep pattern was disturbed as she was unable to lie down in the supine position. On examination, she was moderately obese with a BMI of 32.1 kg/m^2, and she had pallor, orthopneoa, bilateral pedal oedema, and lower abdominal wall oedema, as shown in Figure 1. On cardiovascular examination, the apex beat was shifted laterally into the 5th intercostal space. On respiratory examination, her respiratory rate was 22/minute. decreased air entry in the lower chest, and breath holding time was only 12 seconds. The liver is palpable 3 cm below the right subcostal margin, firm in consistency, and has a smooth surface.

Investigations

Her blood tests revealed a decreased haemoglobin level of 7.8 g/dl, an international normalized ratio of 1.6, and a serum albumin level of 3.1 at the time of admission. The rest of the blood investigations, including the liver

function test, renal function test, and alpha-fetoprotein, were grossly normal as shown in Table 1.

On chest X-ray, her right hemidiaphragm appears elevated as shown in Figure 2, and contrast-enhanced computerised tomography showed a well-defined large heterogenous hypodense lesion of size 14.8x16.7x15.5 in the anterosuperior and posterosuperior segments of the right lobe, intense peripheral enhancement in the arterial phase with centripetal filling in delayed scans, focal peripheral macrocalcifications present, no intrahepatic biliary radical dilatatation, gall bladder distended with multiple hyperdense calculi, inferior vena cava compressed and pushed medially as shown in Figure 3 and Figure 4.

Differntial diagnosis

After evaluation with a blood workup and radiological imaging, a differential diagnosis of liver cell adenoma and liver cell hemangioma was made. Based on these differentials, we proceeded with an emergency hepatectomy as the patient needed urgent decompression of pressure symptoms.

Treatment

Patient was planned for emergency right hepatectomy, preoperative cardiac evaluation was done which showed normal left ventricle systolic function and right ventricle appear compressed, a pulmonary opinion was obtained, a pulmonary function test was advised, but there was poor respiratory effort and the patient was unable to hold breath.

Patient underwent emergency right hepatectomy with thoraco-abdominal incision to take control of suprahepatic IVC as tumour was in close contact with IVC. First, inflow control was taken as the tumour was highly vascular due to the outflow obstruction. The tumour was densely adhered to the diaphragm, so a portion of the diaphragm was excised and repaired as shown in Figure 5.

Intraoperative findings were 15x14x13 cm tumour involving right lobe predominantly segment 8, right liver firm in consistency due to outflow obstructuion,tumour densely adhered to diaphragm, limited diaphragmatic excision was done, feeder vessels present from diaphragm supplying the tumour, tumour pushing the heart laterally and compressing the IVC and causing right diaphragmatic elevtion.

Outcome and followup

In the postoperative period, mechanical ventilation continued for 48 hours; the patient was extubated on postoperative day 3, developed chylous ascites, which was managed conservatively. The patient recovered well, with significant improvement in her shortness of breath. The histopathological report was consistent with the features of hepatic adenoma as shown in Figure 6. She was discharged in stable condition. She remained asymptomatic in her regular follow-up OPD visits.

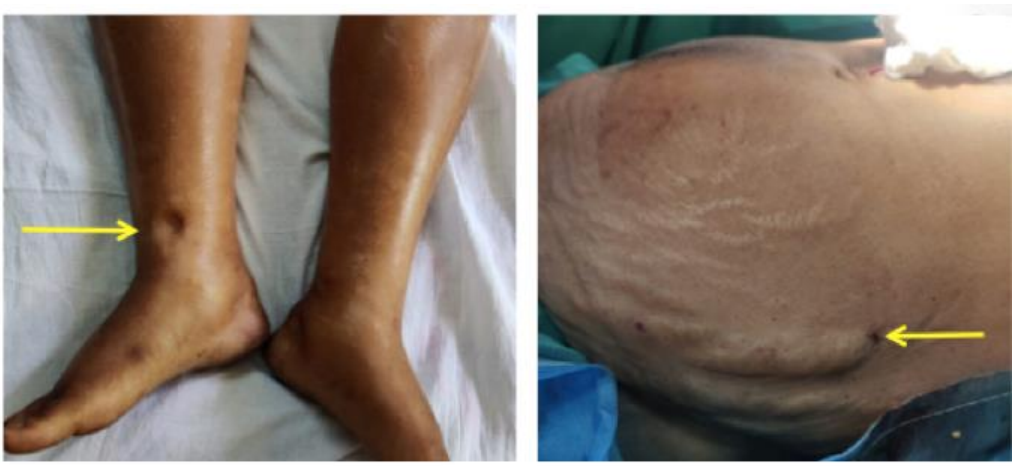

Figure 1: Bilateral pitting oedema and lower abdominal wall oedema.

Table 1: Blood investigations at the time of admission.

Variables		Variables	
Hemoglobin	7.8	**Total Bilirubin**	1.1
Total leucocyte count	10700	**AST / ALT**	27/21
Platelets	1,70,000	**SAP**	168
International Normalized Ratio (INR)	1.6	**GGT**	50
Urea/creatinine	29/1.1	**T. rotein /S. albumin**	6.9/ 3.1
T3/T4/TSH	2.24/1.08/2.9	**Na/K**	138/3.9

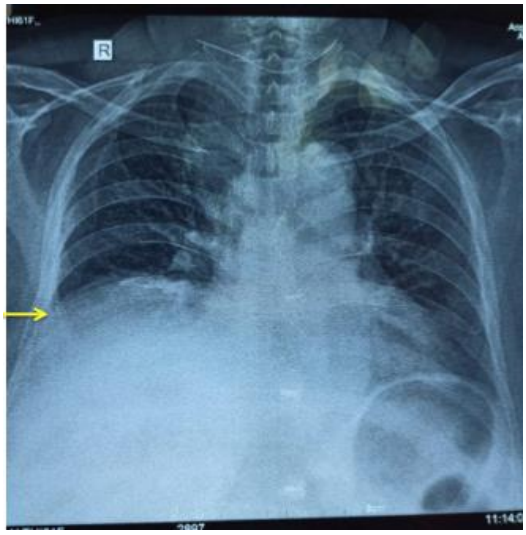

Figure 2: Elevated right hemidiaphragm.

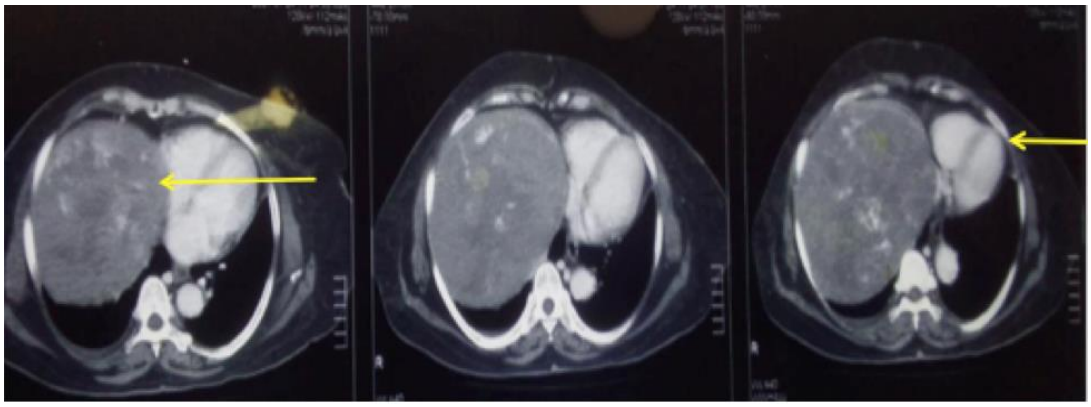

Figure 3: CECT showing thoracic extension of tumour, with tumour pushing the heart laterally.

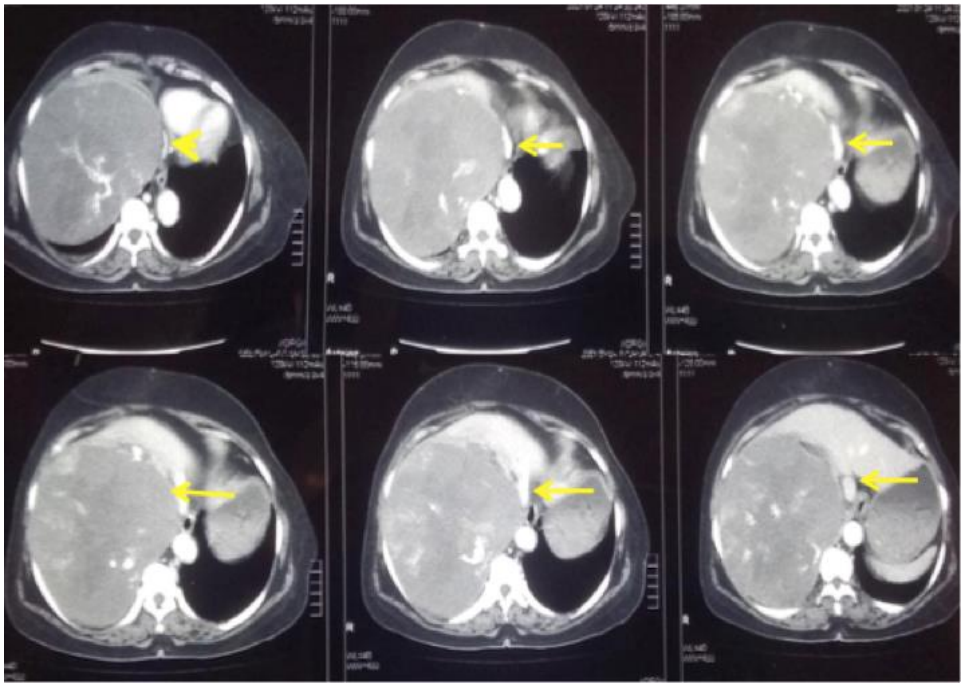

Figure 4: CECT abdomen: IVC compressed and pushed medially and upward.

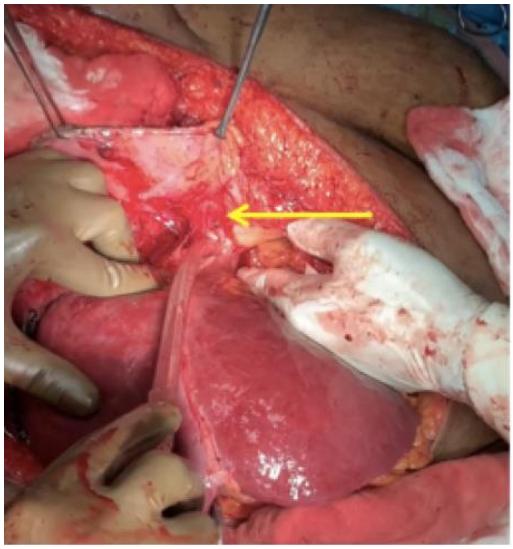

Figure 5: Tumour adherent to diaphragm.

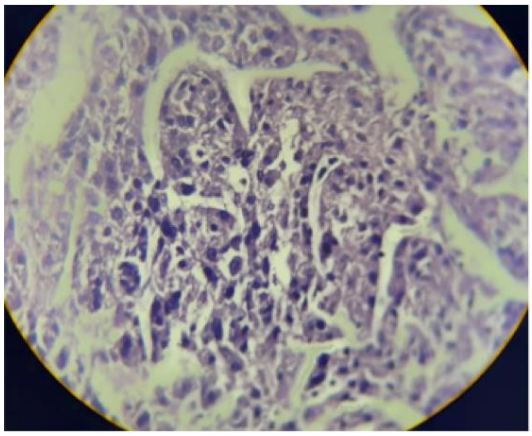

Figure 6: Histopathological report consistent with features of hepatic adenoma.

DISCUSSION

Edmondson originally identified a liver cell adenoma in 1958 as an encapsulated tumour of the liver devoid of bile ducts.[3] According to Haring et al, at least 30% of HCA patients experienced regression, and half of all HCA patients remained stable after stopping OCP use.[4] Only one study has, to date, described the frequency of HCA regression and the timing of HCA resection. Klompenhouwer et al stated that 15% of HCA in their cohort showed regression to 50 mm or smaller after 6 months. This increased to 25% of patients after 1 year.[5]

Patients who are symptomatic typically have right upper quadrant pain from internal bleeding in the liver cell adenoma. The sonographic appearance of HA is that of a well-delineated and heterogeneous solid mass. Hyperechoic lesions to the normal liver parenchyma may be present in lesions with excessive lipid content or recent haemorrhage. After time, old blood will become hypoechoic, mimicking a cyst.[6] On CECT, it appears as a well demarcated tumor, with characteristic peripheral enhancement during the early phase and subsequent centripetal flow during the portal venous phase. A heterogeneous consistency is usually a sign of necrosis or fibrosis.[7] HCAs are commonly hyperintense on T2-weighted imaging, either diffusely or peripherally due to dilated sinusoids. T2 hyperintensity is present in 83% to 100% of HCA patients.[8]

Most medical professionals recommend a conservative approach for women who have been diagnosed with a solitary HA with a diameter of 5 cm and had no symptoms.[9] Surgical treatment of solitary adenomas is limited to patients with lesions that measure >5 cm, symptomatic patients, and in those patients in whom malignancy cannot be excluded, as well as to lesions that do not show adequate regression after discontinuation of OCPs, especially in the case of women who wish to become pregnant. The gold standard for the management of patients with HCA is elective surgical resection. Either a laparoscopic or open procedure can be used to safely resect HCA.[10] Transarterial embolization (TAE) and tumour ablation are other therapy modalities being considered for the management of HCA (either radiofrequency ablation or microwave ablation). Only patients with small lesions who are poor surgical candidates may benefit from TAE or tumour ablation procedures.[11] When several adenomas or large adenomas are present and cannot be removed, liver transplantation has been a therapeutic option.[12]

Our case is a rare presentation of hepatic adenoma presenting as breathlessness with compression of inferior vena cava, right ventricle and elevation of right hemidiaphragm, to the best of our knowledge, no case has been reported so far in which adenoma presenting as breathlessness. Chakkalakal et al reported a case in which a hepatic cyst presented with breathlessness.[13]

CONCLUSION

Breathlessness may be a symptom of a hepatic adenoma due to exerting pressure on the diaphragm, lungs, heart, and large blood vessels. In these cases, prompt surgical treatment is required to reduce symptoms.

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REFERENCES

1. Renzulli M, Clemente A, Tovoli F, Cappabianca S, Bolondi L, Golfieri, R. Hepatocellular adenoma: An unsolved diagnostic enigma. World Journal of Gastroenterology. 2019;25(20):2442-9.
2. Shreenath AP, Kahloon A. Hepatic Adenoma. In: StatPearls publishing; 2022.
3. Edmondson HA. Tumors of the liver and intrahepatic bile ducts. Section 7, fascicle 25, Atlas

of Tumor Pathology. Washington: Armed Forces Institute of Pathology; 1958.
4. Haring PD, Gouw SH, de Haas RJ, Cuperus JC, de Jong KP, de Meijer VE. The effect of oral contraceptive pill cessation on hepatocellular adenoma diameter: A retrospective cohort study. Liver International. 2019;39(5):905-3.
5. Klompenhouwer AJ, Bröker M, Thomeer M, Gaspersz MP, de Man RA, IJzermans J. Retrospective study on timing of resection of hepatocellular adenoma. Br J Surg. 2017;104:1695–703.
6. Chiorean L, Cui W, Tannapfel A, Franke D, Stenzel M, Kosiak W, et al. Benign liver tumors in pediatric patients - Review with emphasis on imaging features. WJG. 2015;21(28):8541-61.
7. Boeți MPS, Tivadar B, Lupescu IG, Herlea V, Boroș M, Tomescu D, et al. Challenging Issues in Hepatic Adenoma. In: Tsoulfas G, Rodrigo L (eds). Liver Disease and Surgery [Internet]. London: IntechOpen; 2019. Available from: https://www.intechopen.com/chapters/68284. Accessed 29 November 2022.
8. Wong VK, Fung AW, Elsayes KM. Magnetic Resonance Imaging of Hepatic Adenoma Subtypes. Clinical Liver Disease; 2022.
9. Van der Wi*1122-1126*ndt DJ, Kok NF, Hussain SM, Zondervan PE, Alwayn IP, de Man RA, et al. Case-orientated approach to the management of hepatocellular adeno- ma. Br J Surg. 2006;93:1495–502.
10. Abu Hilal M, Di Fabio F, Wiltshire RD, Hamdan M, Layfield DM, Pearce NW. Laparoscopic liver resection for hepatocellular adenoma. World J Gastrointest Surg. 2011;3(7):101-5.
11. European Association For The Study Of The L. Clinical Practice Guidelines on the management of benign liver tumours. J Hepatol. 2016;65(2):386-98.
12. VonRiedenauer WB, Shanti CM, Abouljoud MS. Resection of giant liver adenoma in a 17-year-old adolescent boy using venovenous bypass, total hepatic vascular isolation and in situ cooling. J Pediatr Surg. 2007;42: E23–7.
13. Chakkalakal C, Jorbenadze R, Gawaz M. An Unusual Cause of Dyspnea and Thoracic Pressure. Case Rep Cardiol. 2019;2019:2574858.

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