



Contents lists available at ScienceDirect

International Journal of Surgery Case Reports

journal homepage: www.casereports.com

Treatment of atypically-localized cavernous hemangioma in abdomen with atypical pain

Mehmet Ilhan^a, Gizem Oner^{a,*}, Ali Fuat Kaan Gök^a, Mesut Bulakçı^b, Gülçin Yeğen^c^a Department of General Surgery, Istanbul University Istanbul Faculty of Medicine, Istanbul, Turkey^b Department of Radiology, Istanbul University Istanbul Faculty of Medicine, Istanbul, Turkey^c Department of Pathology, Istanbul University Istanbul Faculty of Medicine, Istanbul, Turkey

ARTICLE INFO

Article history:

Received 4 April 2016

Received in revised form 19 May 2016

Accepted 28 May 2016

Available online 7 June 2016

Keywords:

Cavernous hemangioma

Atypical pain

Intraabdominal mass

ABSTRACT

INTRODUCTION: Hemangiomas are the most common benign lesions of the liver. They usually remain asymptomatic and it is sufficient to follow up with intermittent imaging methods. The case presented herein featured with localization and atypical symptoms.

PRESENTATION OF CASE: A man aged 59 years was admitted with a three-month history of continuous and recently increased abdominal pain, and also early satiety. Computed Tomography (CT) showed a 9 × 6-cm mass that compressed the spleen on the left sub-diaphragmatic area, attached to the inferior part of the diaphragm. The mass was removed laparoscopically and pathology was cavernous hemangioma.

DISCUSSION: Although surgical treatment of cavernous hemangioma of the liver (CHL) remains in the background, for symptomatic patients who have no clear diagnosis, when complications emerge, surgery can be preferable. Here in minimally invasive surgery was performed in this case suffering from atypical abdominal pain.

CONCLUSION: Cavernous hemangiomas of the liver rarely require treatment. Surgery is one of the options in selected cases and abdominal pain is one of the indications. In patients complaining from persistent abdominal pain, if intraabdominal atypical-localized mass was seen in examinations, hemangioma should be remembered in differential diagnosis.

© 2016 The Author(s). Published by Elsevier Ltd on behalf of IJS Publishing Group Ltd. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

1. Introduction

Hemangiomas are the most common benign solid lesions in the liver and the prevalence in the population is 20% [1]. Cavernous hemangioma of the liver (CHL) occurs with congenital, non-neoplastic, hamartomatous proliferation of vascular endothelial cells that originate from the mesodermal layer [2]. Eighty percent of hemangiomas are cavernous type [3]. CHLs are usually asymptomatic and are detected incidentally. They rarely cause symptoms, but if they become symptomatic the most common sign is abdominal pain. More rarely, they become symptomatic through bleeding, rupture, and compression of adjacent organs [4]. Cavernous hemangiomas of more than 5 cm in diameter are called giant hemangiomas [5].

2. Case

A man aged 59 years with a three-month history of continuous and recently increased abdominal pain, and early satiety was

admitted to Istanbul Faculty of Medicine, Trauma and Emergency Surgery Service. The physical examination revealed a palpable mass in the left upper quadrant. With the exception of total bilirubin, which was 1.7 mg/dL, all laboratory tests were found within normal values. Tumor markers were negative. In the computed tomography (CT), a 9 × 6-cm-sized mass was detected in the left diaphragmatic field, superior to the spleen and extended to the gastroesophageal junction (Fig. 1a,b). Magnetic resonance imaging (MRI) showed a well-defined lesion in the left sub-diaphragmatic area attached to the lower face of the diaphragm, which had compressed the spleen (Fig. 2a–d). Laparoscopic exploration was decided for the patient. During the exploration, a sub diaphragmatic mass was detected that was attached to the diaphragm, spleen, and left lobe of the liver with fibrotic bands (Fig. 3a,b). The decision was made to continue the surgery laparoscopically and two 5 mm working ports were introduced. The mass was separated from the fibrotic bands using LigaSure and excised from the abdomen through a Phannesteil incision. The patient was discharged on the second post-op day.

Macroscopic examination of resected material revealed a lobulated mass, 7.5 cm in diameter and 118 g in weight. The cut surface was solid, dark red-black in color and with patchy septal fibrosis. On microscopic examination, the tumor was characterized by blood-

* Corresponding author at: İstanbul Üniversitesi İstanbul Tıp Fakültesi, Travma ve Acil Cerrahi Servisi, Genel Cerrahi Anabilim Dalı, 34390 Fatih, İstanbul, Turkey.
E-mail address: gizem.oner@istanbul.edu.tr (G. Oner).

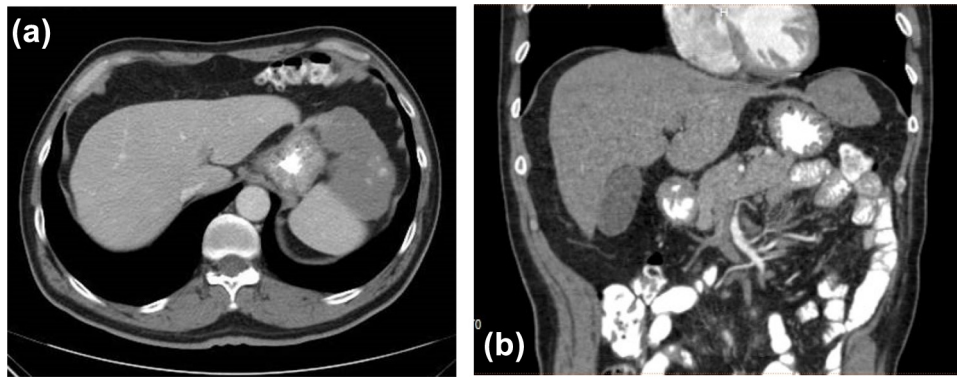


Fig. 1. (a) An axial enhanced CT image shows that a well-defined mildly hypodense solid mass contains several foci of faint calcifications. (b) A thin band formation between the mass and left lobe of the liver is clearly seen in a coronal reformatted CT image.

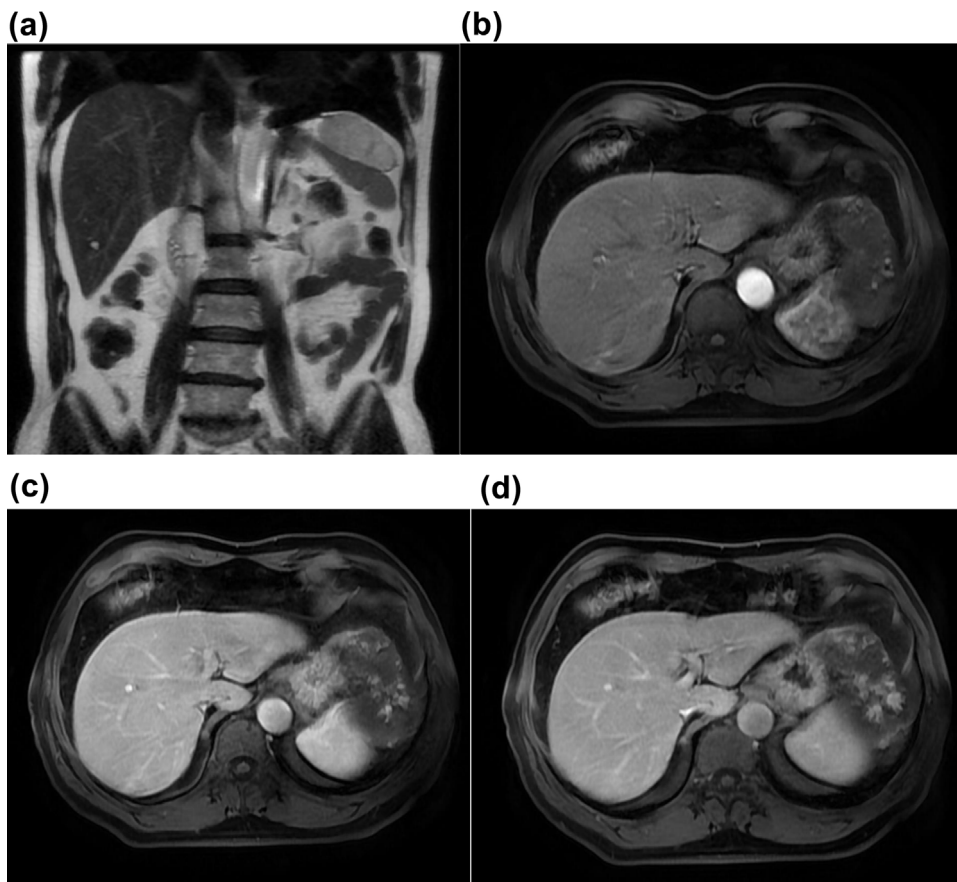


Fig. 2. (a) The lesion seen as markedly hyperintense in T2W coronal MR image. Axial contrast enhanced T1W MR images obtained in arterial phase (b), portal phase (c) and hepatic venous phase (d) show the lesion with heterogeneous patchy enhancement in an increasing manner.

filled cavernous vascular channels, consistent with the diagnosis of cavernous hemangioma (Fig. 4).

3. Discussion

Hemangiomas are the most common benign lesions of the liver. They mostly remain asymptomatic and do not cause complications [6]. Surgery is considered in the presence of progressive abdominal symptoms, spontaneous or traumatic rupture, fast-growing lesions, Kasabach-Merrith syndrome, and lesions that have no clear diagnosis [4,7]. Management of CHL ranges from observation to a variety of radiologic and surgical interventions. Surgical interventions include liver resection, enucleation, hepatic artery ligation,

and rarely, transplantation [4]. In our case the patient was complaining of increasing pain and early satiety. Pain and early satiety was thought to be due to compression of the mass into the stomach. Thereby, the location of the cavernous hemangioma, the inability to clearly distinguish from malignancy, and the patient's increasing abdominal symptoms provided for the decision for surgery. Due to the inability to assess the invasion of the surrounding tissue with the pre-op with the view of assessing its operability, the initial method was decided not to be open but laparoscopic. After being satisfied that no invasion of the lesion to the surrounding tissue had occurred, rather it was only bound by fibrotic bands to liver and diaphragm, we decided to continue the surgery laparoscopically. Laparoscopic resection of hemangioma is not recommended as a

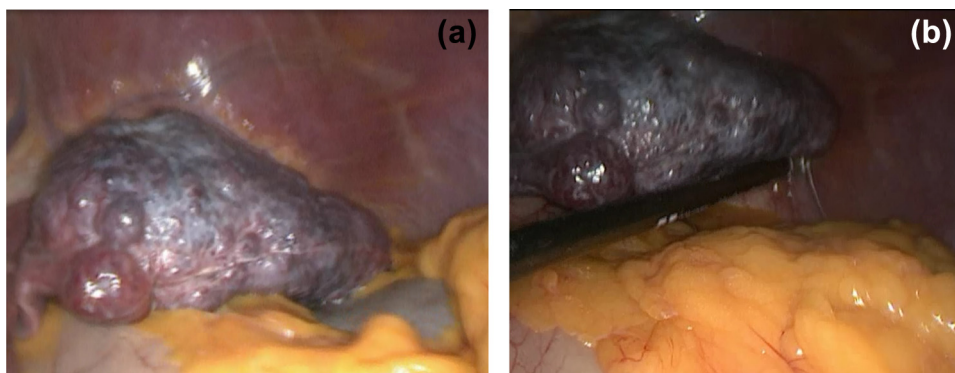


Fig. 3. (a,b) Cavernous hemangioma connected to the diaphragm, spleen, and liver with fibrotic bands.

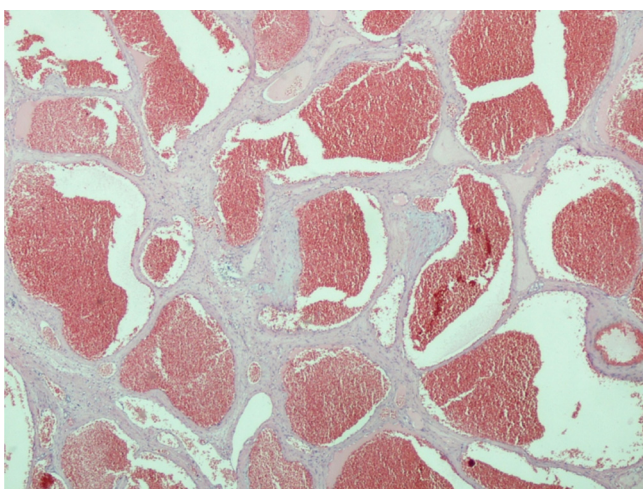


Fig. 4. Blood-filled cavernous vascular spaces are seen (H&E, 20X).

surgical treatment due to the high vascularity and the concomitant risk of intra-operative hemorrhage. Such that the liver parenchyma can be protected as much as possible, open enucleation is the most preferred surgical method for hemangiomas, by which potential blood loss is limited and the risk of bile leakage is reduced [8]. In our case, the atypical localization of cavernous hemangioma enabled minimally invasive surgery to be performed in a safe and effective way. Perioperative bleeding was not observed. Through the use of minimally invasive surgery, the patient was discharged early postoperative period with minimized morbidity. This finding proves that minimally invasive surgery can be safely performed in eligible cases for the surgical treatment of cavernous hemangiomas [9]. Hemangiomas rarely need surgical treatment. The presence of symptoms such as pain gradually increasing is one of the most important indications for surgery [10]. In our case, although it would not be in the pre-operative diagnosis of hemangioma, intraoperative findings in line with hemangioma considered in the differential diagnosis and surgery performed because patient remains symptomatic. The material was excised from the abdomen through a Phannesteil incision because a certain distinction of malignancy could not be made.

4. Conclusion

CHLs are often asymptomatic and are followed without surgical intervention. As in our case, atypically-located symptomatic lesions can allow the decision for surgical excision of these masses. Cavernous hemangioma must be considered in the differential

diagnosis of abdominal masses in the patients suffering from atypical abdominal pain [11].

Conflicts of interest

We wish to confirm that there are no known conflicts of interest associated with this publication.

Funding

There has been no significant financial support for this work that could have influenced its outcome.

Ethical approval

No ethical approval.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Author contribution

This work was carried out in collaboration between all authors. Author MI designed the study, wrote the protocol and wrote the first draft of the manuscript. Authors MI and GO managed the literature searches, analyses of the study. All authors read and approved the final manuscript.

Guarantor

Gizem Oner.

References

- [1] S.J. Kartik, A.V. Paraskevi, G. Maha, F. Sandra, K. Korosh, P.C. Sean, et al., Association of hepatic hemangiomatosis with giant cavernous hemangioma in the adult population: prevalence, imaging appearance, and relevance, *AJR Am. J. Roentgenol.* 196 (4) (2011) 809–815.
- [2] S.P. Bioulac, H. Laumonier, H. Laumonier, C. Laurent, et al., Benign and malignant vascular tumors of the liver in my adults, *Liver Dis.* 28 (2008) 302–314.
- [3] J.J. Noh, S.H. Choi, H.K. Hwang, et al., Adrenal cavernous hemangioma: a case report with review of the literature, *JOP* 15 (2014) 254–257.
- [4] S.M. Lerner, J.R. Hiatt, J. Salamandra, P.W. Chen, D.G. Farmer, R.M. Ghobrial, et al., Giant cavernous liver hemangiomas: effect of operative approach on outcome, *Arch. Surg.* 139 (2004) 818–821.
- [5] M.S. Duxbury, O.J. Garden, Giant haemangioma of the liver: observation or resection, *Dig. Surg.* 27 (2010) 7–11.
- [6] J. Belghiti, F. Cauchy, V. Paradis, V. Vilgrain, Diagnosis and management of solid benign liver lesions, *Nat. Rev. Gastroenterol. Hepatol.* 11 (December (12)) (2014) 737–749.

- [7] J.T. Miura, A. Amini, R. Schmocker, S. Nichols, D. Sukato, E.R. Winslow, et al., Surgical management of hepatic hemangiomas: a multi-institutional experience, *HPB (Oxford)* 16 (2014) 924–928.
- [8] S.M. Lerner, J.R. Hiatt, J. Salamandra, P.W. Chen, D.G. Farmer, R.M. Ghobrial, et al., Giant cavernous liver hemangiomas: effect of operative approach on outcome, *Arch. Surg.* 139 (2004) 818–821.
- [9] T. Igawa, S. Watanabe, T. Onita, H. Sakai, Successful treatment for retroperitoneal cavernous hemangioma adjacent to the renal hilum via the laparoscopic approach: a case report, *J. Med. Case Rep.* 26 (8) (2014) 73.
- [10] M.A.M. Brouwers, P.M.J.G. Peeters, K.P. de Jong, et al., Surgical treatment of giant hemangioma of the liver, *Br. J. Surg.* (1997) 84314–84316.
- [11] H.K. Moon, H.S. Kim, G.M. Heo, W.G. Shin, K.H. Kim, M.K. Jang, et al., A case of pedunculated hepatic hemangioma mimicking submucosal tumor of the stomach, *Korean J. Hepatol.* 17 (1) (2011) 66–70.

Open Access

This article is published Open Access at scimedirect.com. It is distributed under the [IJSCR Supplemental terms and conditions](#), which permits unrestricted non commercial use, distribution, and reproduction in any medium, provided the original authors and source are credited.