

## Original Article

# Spontaneous rupture of hepatic hemangioma: a case report and literature review

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Received August 10, 2015; Accepted September 22, 2015; Epub October 1, 2015; Published October 15, 2015

**Abstract:** Hepatic hemangioma, a common benign tumor of the liver, has caused great threats to the public health. Most patients have an excellent prognosis because of the benign nature of hemangioma. On some occasions, spontaneous rupture of hepatic hemangioma is rarely observed in patients. Therefore, a majority of scholars propose that surgery should be restricted to specific situations. In this case, we presented a patient with spontaneous rupture of hepatic hemangioma in our hospital. After a literature review, we summarized the management and outcome of the patient, which revealed the survival rates of the patients are satisfactory.

**Keywords:** Hepatic hemangioma, spontaneous rupture, surgery

## Introduction

Hepatic hemangioma is the most common benign tumor of the liver. Its prevalence in autopsy studies ranges between 3 and 20% [1]. In clinical practice, cavernous hemangioma is the most common type. Most cases are rarely symptomatic primarily due to its very slow growth pattern. A few patients, however, may present with symptoms as hemangiomas grow fairly large. Most patients have an excellent prognosis because of the benign nature of hemangioma. On rare occasions, spontaneous rupture of hepatic hemangioma is observed. Therefore, a majority of scholars propose that surgery should be restricted to specific situations. In this case report, we described a patient who had spontaneous rupture of hepatic hemangioma in our hospital in November 2011 and reviewed the literature.

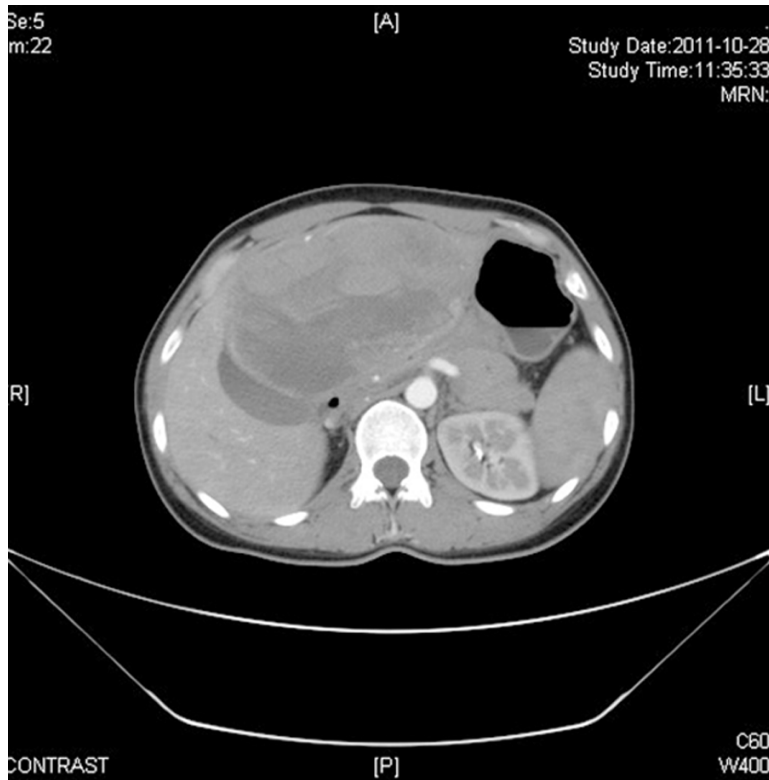
## Case report

A 37-year-old woman admitted to our hospital complaining of sudden abdomen mass for 5 days. Her medical history revealed a cesarean section 2 years ago and absence of recent gestation and delivery. At physical examination, there was a palpable hard mass (size: 15 × 12 cm) of the upper abdomen with poor motility

and mild tenderness. Laboratory test reported carcinoembryonic antigen 0.64 ng/ml, alpha-fetoprotein 0.89 ng/ml, carbohydrate antigen 19-9 4.44 U/ml, carbohydrate antigen-125 11.65 U/ml, alanine aminotransferase 77 U/L, aspartate aminotransferase 64 U/L, γ-glutamyl transferase 87 U/L, alkaline phosphatase 116 U/L, white cell count  $9.61 \times 10^9/L$ , red blood cell count  $3.44 \times 10^{12}/L$ , hemoglobin 107 g/L and hematocrit 33.60%. Her abdominal CT revealed a retroperitoneal space-occupying lesion. The patient was primarily diagnosed as a retroperitoneal space-occupying lesion, rupture and hemorrhage of hepatic hemangioma (**Figure 1**).

An exploratory surgery was performed via an 18 cm incision at approximately right mid-upper abdomen line. A mass (15 × 12 cm) with a complete capsule was seen downward from the left lateral lobe of the liver. Its smooth inferior margin formed the free edge of the mass. There was no ascitic fluid. This space-occupying lesion was primarily considered as hemangioma or adenoma. This patient underwent tumorectomy for the left lateral lobe of the liver. Round ligament, falciform ligament and left triangular ligament of liver were cut to dissociate and then remove the left lateral lobe of the liver as well

## Rupture of hepatic hemangioma



**Figure 1.** CT images indicated a hepatic giant hemangioma. Bleeding was noted in the tumor envelope and the tumor mass.

**Table 1.** Spontaneous rupture of a hepatic giant hemangioma in adults

No.	Age (year)	Sex	Management	Outcome	Reference
1	65	F	Resection	Survived	[2]
2	27	F	Tamponade	Died	[3]
3	61	M	Suture	Survived	[4]
4	N.A.	N.A.	Resection	Survived	[5]
5	61	F	Resection	Survived	[6]
6	71	M	TAE+Resection	Survived	[7]
7	36	F	TAE+Resection	Survived	[8]
8	68	F	Resection	Survived	[9]
9	44	F	N.A.	N.A.	[10]
10	43	M	Resection	Survived	[11]

F, female; M, male; N.A., not available; TAE, transcatheter arterial embolization.

as the tumor. Her postoperative histological findings revealed hepatic cavernous hemangioma plus intratumoral hemorrhage. Her postoperative course was uneventful and she was then discharged from our hospital.

### Discussion

As a benign tumor, there have been no reports of malignant transformation for hepatic heman-

gioma. Generally, individuals with small and asymptomatic hepatic hemangioma require no treatment. The clinical management of larger hepatic hemangioma still may remain controversial. In this study, a literature review was performed to summarize the treatment strategy for hepatic hemangioma [2-11], which revealed the outcome was still satisfactory.

In China, cavernous hemangiomas are divided into 3 groups based on tumor diameter: < 5 cm (small cavernous hemangioma), 5-10 cm (large cavernous hemangioma) and > 10 cm (giant cavernous hemangioma). To our knowledge, this is the first case report concerning spontaneous rupture of hepatic hama-gioma in China. Treatment decision should be reviewed and take into account individual patient factors. In a study of 249 patients with hepatic hemangioma by Herman et al. [12], only 1 patient (0.4%) had a significant increase in tumor volume. In a previous study of 163 patients with hepatic hemangioma by Farges et al. after a mean follow-up of 92 months, only 1 patient (0.6%) had intrahepatic hemorrhage. Corigliano et al. [13] reported a case of giant hepatic hemangioma rupture.

To further analyze the treatment efficiency of the disease, a PubMed Medline search was performed, which

indicated that 28 cases of spontaneous rupture of hepatic hemangioma in adults was reported including the present case (**Table 1**).

### Conclusion

In this case report, it was considered that this young woman had a suspected large cavernous hemangioma when she presented with abdominal mass for 5 days when there was no evi-

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dence of trauma or other causes. The rupture of intratumor blood vessels led to major hemorrhage and a rapid increase in tumor volume. Preoperative CT and intraoperative findings indicated that local hemangioma wall was extremely thin. She might have died unexpectedly when her hemangioma ruptured into abdominal cavity without surgical treatment. We hope that our case will attract more attention to this complication in clinical work. It requires us to reconsider indications for surgery. Active surgical intervention should be strongly considered in the situation when a hemangioma grows close to liver margins or at least for a large hepatic hemangioma even though the patient is asymptomatic or the tumor does not grow during the follow-up.

### Acknowledgements

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

### Disclosure of conflict of interest

None.

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