

## CASE REPORT

# Hepatic sclerosed hemangioma which was misdiagnosed as metastasis of gastric cancer : report of a case

Shinichiro Yamada, Mitsuo Shimada, Tohru Utsunomiya, Yuji Morine, Satoru Imura, Tetsuya Ikemoto, Hiroki Mori, Jun Hanaoka, Shuichi Iwahashi, Yu Saitoh, and Michihito Asanoma

*The Department of Surgery, the University of Tokushima, Tokushima, Japan*

**Abstract :** A sclerosed hemangioma of the liver is rare among hepatic tumors. A 75 years old male was referred to our hospital for gastric cancer and a hepatic tumor. The histological finding of gastric cancer was revealed to be well differentiated adenocarcinoma. The liver tumor was 1.1×1.0 cm in size and located in segment 8 of the liver. Computed tomography (CT) showed it to be a tumor with ring enhancement. Magnetic resonance imaging (MRI) showed the tumor to have a low signal on T1-weighted and slightly high signal on T2-weighted images. Level of hemoglobin was 7.8 g/dl. It was thought to be persistent bleeding from gastric cancer. With diagnosis of liver metastasis from gastric cancer, chemotherapy is recommended. However, to control the bleeding from gastric cancer, we performed distal gastrectomy and wedge resection of liver (S8). The histological examination of the liver tumor revealed to be a hepatic sclerosed hemangioma with hyalinized tissue and collagen fibers. We report herein a case of the rare tumor which was misdiagnosed as a liver metastasis of gastric cancer. *J. Med. Invest.* 59 : 270-274, August, 2012

**Keywords :** cavernous hemangioma, liver, sclerosed hemangioma, gastric cancer, metastatic tumor

## INTRODUCTION

Cavernous hemangioma of the liver is the most common benign neoplasm (1). Cavernous hemangioma usually presents as solitary well-delineated, subcapsular, and disclosed nodules, and these distinctive structures show a characteristic hemodynamic pattern on enhanced computed tomography (CT). However, it was already reported that some cases contain parts of hyaline degeneration, secondary to thrombus, necrosis, or cicatrization, mimicking the hepatic malignancies such as metastatic liver tumor or cholangiocarcinoma (2). A hepatic

sclerosed hemangioma is the ultimate form having all these degenerative changes (3). We report herein a case of such a rare hepatic tumor, sclerosed hemangioma, which was misdiagnosed as a liver metastasis of gastric cancer.

## CASE REPORT

A 75 years old male was referred to our institute for gastric cancer and a hepatic space occupied lesion (SOL). He had visited an affiliated hospital of our university for routine examination of prostatic hyperplasia, and was pointed out anemia. For further examinations, he took gastroscopy and there was type 3 tumor at posterior wall of gastric angle (Fig 1a). Biopsied specimens were diagnosed as well differentiated adenocarcinoma (tub1). Gastric fluoroscopy showed tumor and induration of lesser

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Address correspondence and reprint requests to Mitsuo Shimada, MD, FACS, Department of Surgery, the University of Tokushima, 3-18-15 Kuramoto, Tokushima City, Tokushima, 770-8503, Japan and Fax : +81-88-631-9698.

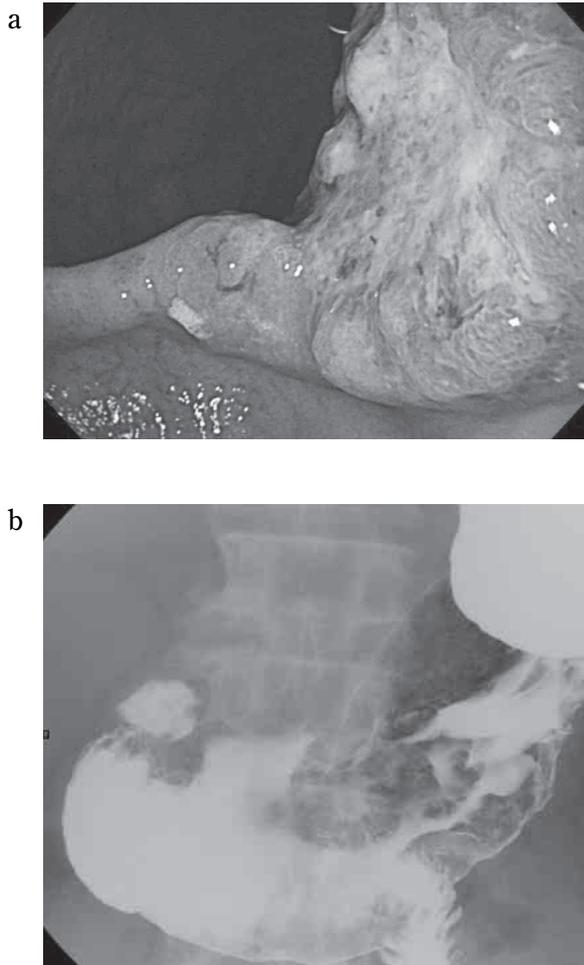


Figure 1 : Gastric examinations. (a) findings of gastroscopy. There is type 3 tumor at posterior wall in gastric angle. The histological examination revealed the tumor to be well differentiated adenocarcinoma (tub1). (b) findings of Gastric fluoroscopy. This shows tumor and induration of the lesser curvature.

curvature (Fig 1b). Enhanced CT showed a small mass in segment 8 of the liver, and this hepatic SOL was suspected to be metastasis of gastric cancer.

The initial laboratory data were as follows : 5300 / $\mu$ l white blood cell count, 7.8 g/dL hemoglobin, 430,000 / $\mu$ l platelet count, 19 IU/L aspartate aminotransferase, 13 IU/L alanine aminotransferase, 11 mg/dL blood urea nitrogen, 0.87 mg/dL creatinin, 3.7 g/dL albumin. Tumor markers were as follows : 7 ng/mL alpha-fetoprotein, 1.7 ng/mL carcinoembryonic antigen (CEA), and 38 U/mL carbohydrate antigen (CA) 19-9. He was positive for hepatitis B (HB) surface antibody (HBsAb), HBcAb and HBsAg, and negative for HBsAg and HBeAg.

Plain CT showed a low density mass, 1.1 $\times$ 1.0 cm in size, in segment 8 of the liver. Enhanced CT showed that the mass lesion was gradually enhanced mainly in the marginal border between normal parenchyma and SOL, and the mass was not enhanced

compared to parenchyma (iso-density) in the delayed phase (Fig 2). Magnetic resonance imaging (MRI) showed that the tumor had a low signal on T1-weighted and high signal on T2-weighted images. Hepatobiliary phase of ethoxybenzyl (EOB)-enhanced MRI showed no uptake in the corresponding area, as a defect (Fig 3). Fluoro-deoxy-glucose positron emission tomography (FDG-PET) showed

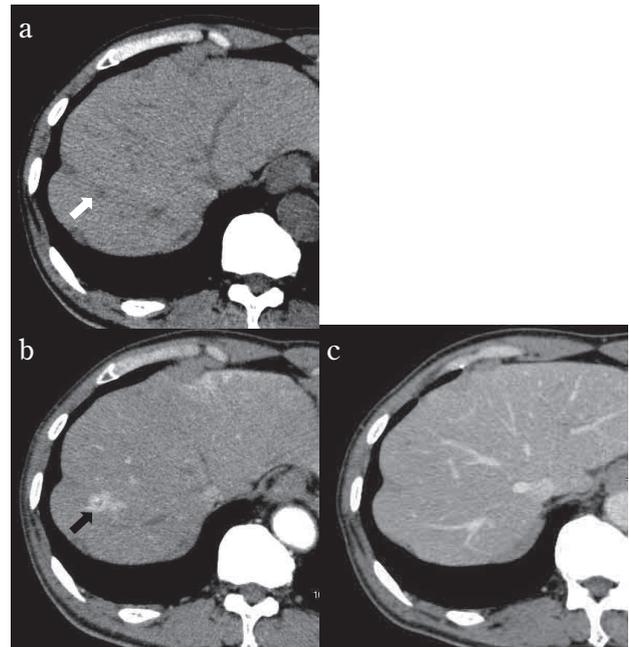


Figure 2 : Abdominal computed tomography. (a) Plain CT. (b) Contrast CT, early phase. (c) Contrast CT delayed phase. Arrows indicate the tumor.

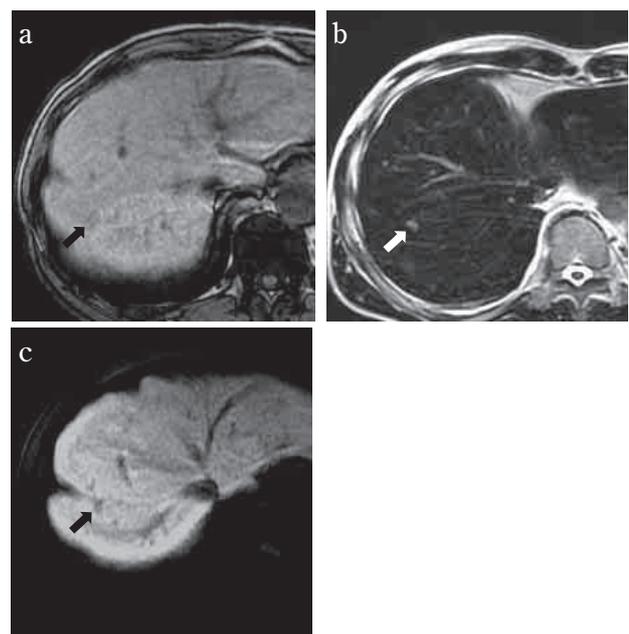


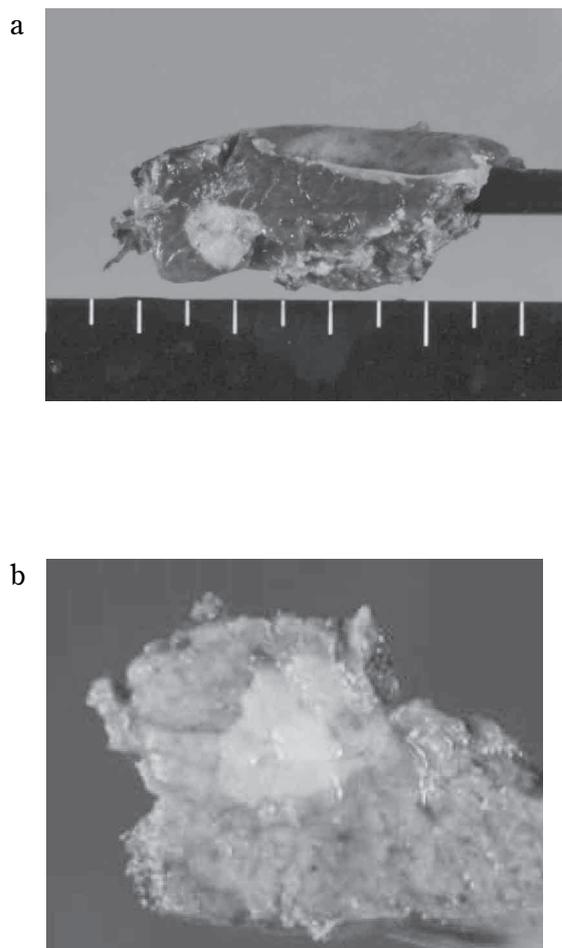
Figure 3 : Abdominal magnetic resonance imaging. (a) MRI, T1-weighted image. (b) MRI, T2-weighted image. (c) EOB enhanced MRI, hepatocyt phase. Arrows indicate the tumor.

that FDG accumulated only in gastric tumor (SUV-max 6.8). With these findings, we diagnosed the liver mass as metastasis of gastric cancer (Stage IV). In this case, chemotherapy is recommended according to gastric cancer treatment guideline. However, we performed distal gastrectomy in order to control the bleeding from gastric cancer.

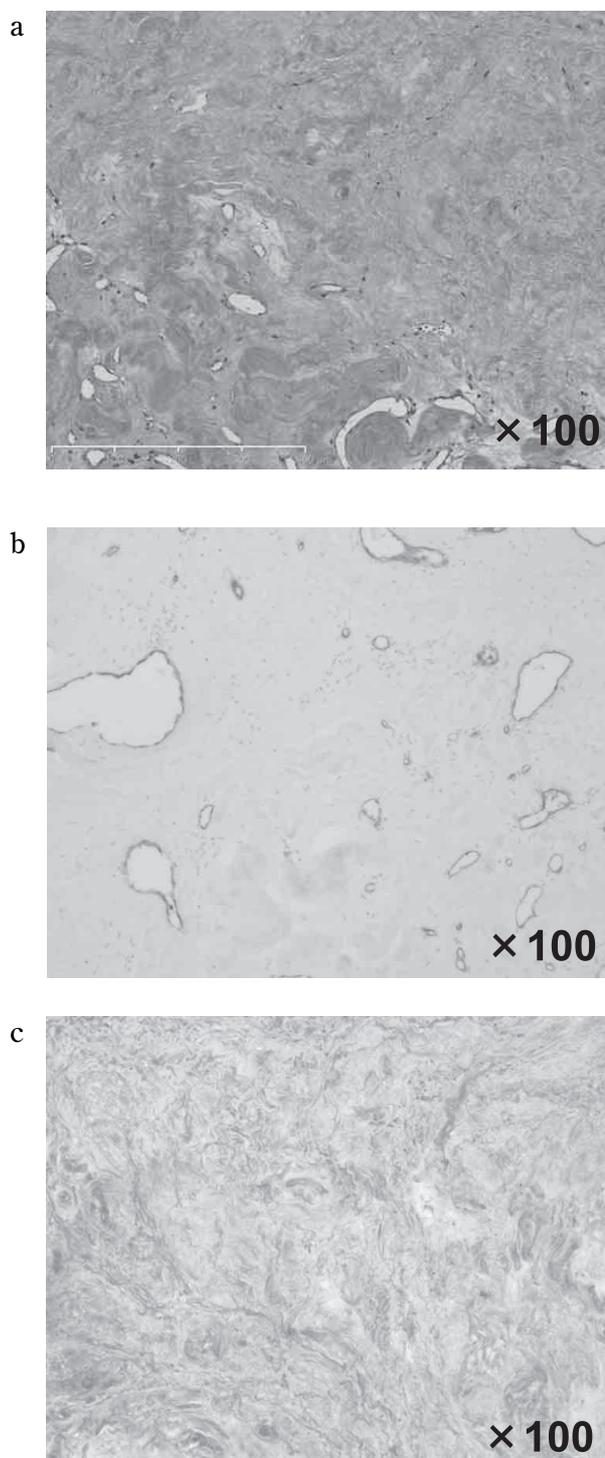
#### *Operative findings and resected specimens*

With fully informed consents for a possible hepatic malignant tumor, we performed distal gastrectomy. The edge of the liver was sharp, and liver surface was smooth. As intraoperative echography revealed that the liver mass of segment 8 was near the liver surface, wedge resection of segment 8 of the liver was also performed. The resected specimen of the liver showed a well demarcated homogenous white solid mass,  $0.8 \times 0.7$  cm in size, elastic hard (Fig 4). Histological examinations showed that most

area comprised hyalinized tissue and collagen fibers with small and thin-walled vascular space (Fig 5a). Immunohistochemical staining revealed some vascular components, as shown by positive CD34 in its peripheral region (Fig 5b). Masson's trichrome stain highlighted the sclerotic condition of the mass



**Figure 4 :** Macroscopic findings of the resected tumor. The tumor was a well-demarcated homogenous white solid nodule,  $0.8 \times 0.7$  cm in size. (a) resected specimen. (b) after formalin preservation.



**Figure 5 :** Microscopic findings of the resected tumor. The tumor was composed of fibrous connective tissue and various sizes of cavernous hemangioma tissue, HE staining (a), CD34 positive vascular components (b), Sclerosis is highlighted with collagen fiber, Masson's trichrome (c).

(Fig 5c). From these characteristics, the tumor was finally diagnosed as a hepatic sclerosed hemangioma. Final diagnosis of gastric cancer was T3(ss), N2, ly2, v1, M0 (Stage IIIb).

## DISCUSSION

Cavernous hemangioma of the liver is the most frequent, the reported incidence being as high as 20% in liver tumor (4). The high incidence of hemangioma increases the probability of encountering atypical manifestations, including necrosis, scarring, and calcification. A sclerosed hemangioma is the ultimate form having all these degenerative changes, and such varieties of pathological characteristics make precisely radiological diagnosis very difficult (5).

In our case, plain CT showed hepatic sclerosed hemangioma as low density, and enhanced CT showed a ring enhancement pattern, which is characteristic of adenocarcinoma. Although cavernous hemangioma shows typical features : low density on plain CT and delayed pooling enhancement, many previous reports have not shown this feature in sclerosed hemangioma (5-12). MRI finding in our case was fit to typical feature of cavernous hemangioma, such as low on T1 and high on T2 weighted images, but this feature can be also observed in the cases of metastatic liver tumors and cholangiocellular carcinoma. Others also reported that MRI findings of sclerosed hemangioma were different from the typical cavernous hemangioma (5-11). It was reported that nodular areas of reduced signal intensity on T2-weighted images corresponded to the histological finding of fibrosis (13). A complicating factor is the contribution to signal heterogeneity of hemorrhage, thrombosis, hyalinization, calcification, and cystic cavities (13). On the otherhand, in our case, FDG accumulated only in gastric tumor, not in hepatic tumor in FDG-PET scan. However, the size of hepatic tumor was so small that this finding could not eliminate the malignancy. With the fact that there was advanced gastric cancer and these radiological findings, metastatic liver tumor from gastric cancer could not be excluded. It has reported that the findings such as geographical pattern, capsular-retraction, decrease in size in follow-ups, and vanishing of previous enhanced lesion should raise the possibility of the presence of sclerosed hemangioma, and it can be diagnosed with biopsy before surgical intervention (5). However, we do not agree the

universal application of percutaneous needle biopsy to make a definite diagnosis of hepatic tumor such as present case. Because a percutaneous biopsy has been reported to have a potential risk of abdominal dissemination by needle tract implantation (14). As hepatic resection has been safe procedure in recent years (15, 16), hepatic resection should be chosen as a first strategy for tumors with unknown pathologically malignant potential.

Although sclerosed hemangioma is a rare disease among hepatic tumors, it needs to be taken into consideration among differential diagnosis of hepatic tumors. As it was extremely difficult to differentiate the lesion from liver metastasis or cholangiocellular carcinoma, if the malignancy of the tumor cannot be denied, hepatic resection should be chosen for diagnostic therapy.

## CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest related to this case report.

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