



DIAGNOSTIC CRITERIA OF A SCLEROSING HEMANGIOMA EVOLVED FROM CAVERNOUS HEMANGIOMA: CASE REPORT

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<p>Article Info <i>Received 03/01/2015</i> <i>Revised 09/01/2015</i> <i>Accepted 11/01/2015</i></p> <p>Key words: Hemangioma, Sclerosing, Sclerosed, Hepatic, Cavernous.</p>	<p>ABSTRACT Radiological findings of typical hemangioma are well-known whereas Sclerosing hepatic hemangioma is an unusual type as a result of its rarity and unfamiliar radiologic findings. In this case report, a 57-year-old man was referred to radiology department for evaluation of a hepatic mass. On physical exam, the abdomen was soft and lax. Complete blood count revealed mild anemia and normal white blood count. The patient had an ultrasound (US) ten years prior to his visit revealed a 5 x 5 cm homogenous hyperechoic mass in the right lobe of the liver. An abdominal computed tomography (CT) scan of the abdomen showed a 10 x 12 cm well defined right hepatic hypoattenuating mass on unenhanced CT with no calcifications. A non-urgent magnetic resonance imaging (MRI) of the abdomen has been suggested to further characterize the hepatic lesion due to the significant increase in the size. A follow up MRI after one year has been performed. It revealed significant reduction in the size of the previously seen hemangioma measuring 6 x 7 cm as compared to 10 x 12 cm in the CT scan. Conclusively, a combination of features suggestive of sclerosing hemangiomas included preexisting cavernous hemangioma, decrease in size over time, and evidence of fibrosis seen by MRI should raise the possibility of sclerosing hemangioma.</p>
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INTRODUCTION

Hepatic hemangioma is the most common benign tumor of the liver [1]. Hemangiomas that undergo degeneration and fibrous replacement are called sclerosed, thrombosed, or hyalinized hemangiomas [3]. Radiological findings of typical hemangioma are well-known whereas Sclerosing hepatic hemangioma is an unusual type and since its rarity and unfamiliar radiologic findings, sclerosing hemangiomas can be difficult to distinguish from other lesions such as hepatocellular carcinoma, cholangiocarcinoma, metastasis, and organized abscesses. In this case report, a sclerosing hepatic hemangioma is presented with radiological findings.

Case report

A 57-year-old man was referred to our department for evaluation of a hepatic mass. His main complaint was a dull abdominal pain and fullness. On physical exam, the abdomen was soft and lax. A hepatic mass has been felt

which was suspected to be a hepatocellular carcinoma (HCC). The serum level for aspartate aminotransferase was 52 IU/L (normal range, 13-35 IU/L) and alanine aminotransferase was 49 IU/L (normal range, 4-32 IU/L), while all other liver function tests were within normal limits. The alpha-fetoprotein was within normal limits. Serologic tests for hepatitis B and hepatitis C virus were negative. Complete blood count revealed mild anemia and normal white blood count.

The patient had an ultrasound (US) ten years prior to his visit (figure 1) revealed a 5 x 5 cm homogenous hyperechoic mass in the right lobe of the liver, most consistent with a benign hepatic cavernous hemangioma.

An abdominal computed tomography (CT) scan of the abdomen (figure 2) showed a 10 x 12 cm well defined right hepatic hypoattenuating mass on unenhanced CT with no calcifications. The dynamic enhancement revealed peripheral nodular enhancement during the



arterial phase. During portal venous and delayed phases, progressive centripetal enhancement was noted. The CT findings are typical for cavernous hemangioma which has double the size in ten years. A non-urgent magnetic resonance imaging (MRI) of the abdomen has been suggested to further characterize the hepatic lesion due to the significant increase in the size.

A follow up MRI (figure 3) after one year has been performed. It revealed significant reduction in the size of the previously seen hemangioma measuring 6 x 7 cm as compared to 10 x 12 cm in the CT scan (Figure 2). The lesion demonstrates a central heterogeneous dark T2 signal intensity accompanied by T2 bright areas at the periphery. The heavy T2 sequence showed further decrease in the signal intensity suggestive of fibrous content. After contrast administration, a heterogeneous patchy enhancement was noted in the periphery followed by centripetal filling. The central T2 dark area was not enhancing until the delayed enhancing sequence. There was a peripheral transient hepatic attenuation difference (THAD) and there were no signs of hepatic cirrhosis or biliary dilation.

DISCUSSION

Cavernous hemangiomas of the liver can be found incidentally and may be readily diagnosed giving their characteristic radiological appearance [1]. Hemangiomas consist of endothelium-lined blood-filled spaces separated by fibrous septa. Cavernous hemangiomas in the liver

usually present as solitary well delineated and subcapsular nodules that are smaller than 5 cm [1].

The characteristic radiological features of hepatic hemangiomas includes: 1) homogenous hyperechogenic hepatic mass on ultrasonography, 2) low attenuation mass on precontrast CT scan, 3) early peripheral nodular contrast enhancement, 4) progressive centripetal opacification and eventual homogenous fill-in on delayed contrast scan of CT or MRI, 6) “light-bulb” sign on heavily T2-weighted image on MRI [1].

Hepatic sclerosing hemangiomas and sclerosed hemangiomas are rare conditions that were first reported by Shepherd and Lee in 1983[2]. A previous report of two solitary hepatic lesions, suggesting a probable pathogenesis of sclerosis of a preexisting hemangioma [2]. In this case report, the hepatic sclerosing hemangioma developed in preexisting cavernous hemangioma over 11 years. The nodular areas of dark signal intensity on T2-weighted images corresponded to the histologic finding of fibrosis [3] which is responsible for the alteration of typical appearance.

The process of sclerosis generally begins in the center of a hepatic hemangioma and can extend to involve the entire lesion. The term “sclerosed” is reserved for hemangiomas that are predominantly fibrosed with near complete obliteration of the vascular spaces. The term “sclerosing” is used to describe partially affected lesions [3].

Figure 1. A sagittal US image showing a homogenously hyperechoic tumor (T) in the right hepatic lobe (L)



Figure 2. Precontrast axial CT scan (a) shows a homogenous hypoattenuating soft tissue mass (M) in the right hepatic lobe (L). Arterial phase (b) demonstrate peripheral nodular enhancement (arrows) followed by centripetal filling in the portal venous (c), 5 minutes delayed (d) and 10 minutes delayed (e) phases. The lesion has duple the size as compared with the prior US. The spleen (s) and the stomach (St) are normal

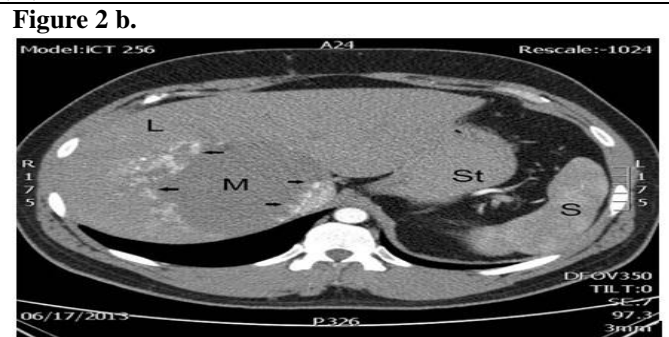
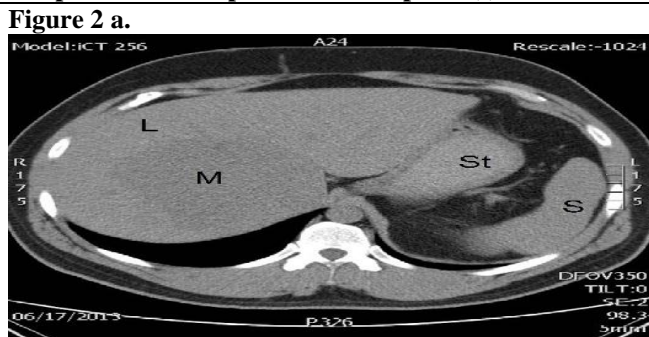


Figure 2 c.

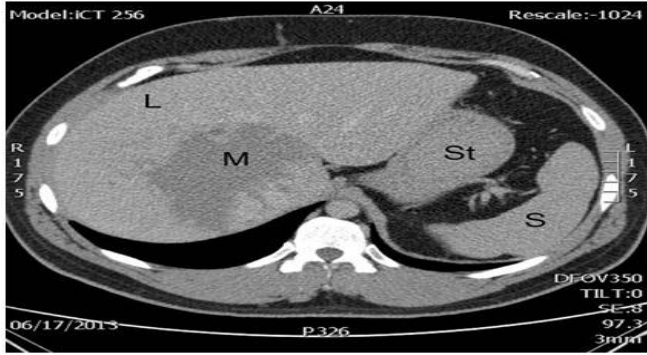


Figure 2 d.



Figure 2 e.

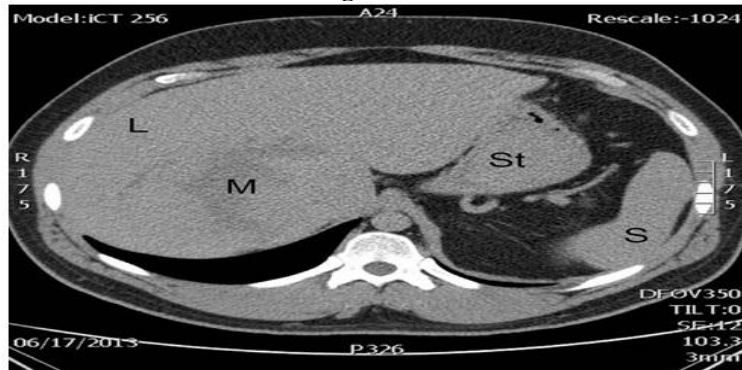


Figure 3. Axial T1 fat saturated (a) shows a hypointense mass (M) in the right hepatic lobe (L) occupying the same location of the previously known hemangioma. Axial T2 fat saturated (b) and coronal T2 (c) shows heterogeneous dark signal intensity (*) which gets darker in axial heavy T2 (d). Enhanced axial T1 (e and f) shows heterogeneous and progressive patchy enhancement. There is interval decrease in the size of the tumor as compared with the previous CT scan. Note a peripheral transient hepatic attenuation difference in the enhanced sequences (arrows)

Figure 3 a.

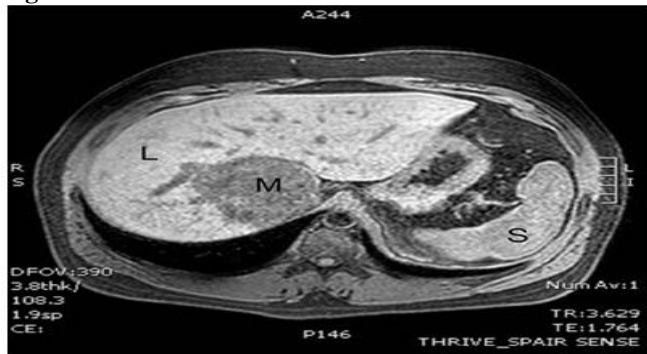


Figure 3 b.

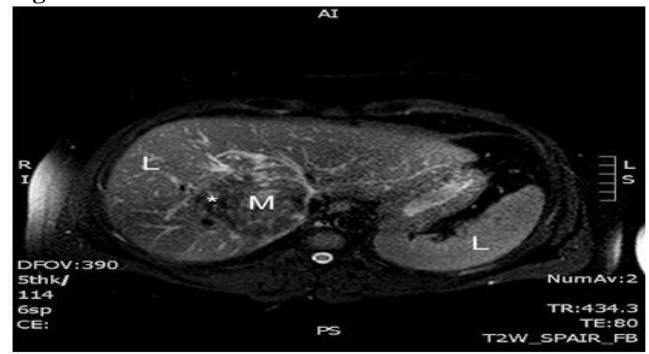


Figure 3 c.

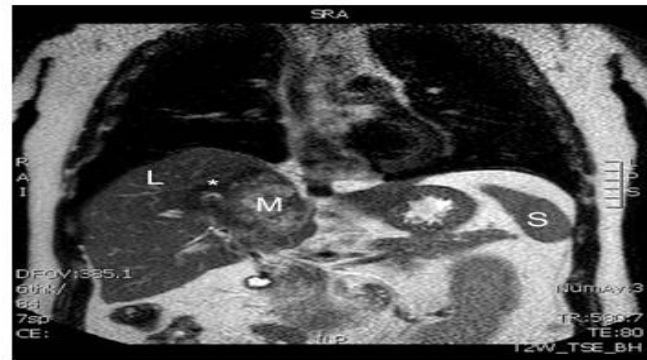


Figure 3 d.

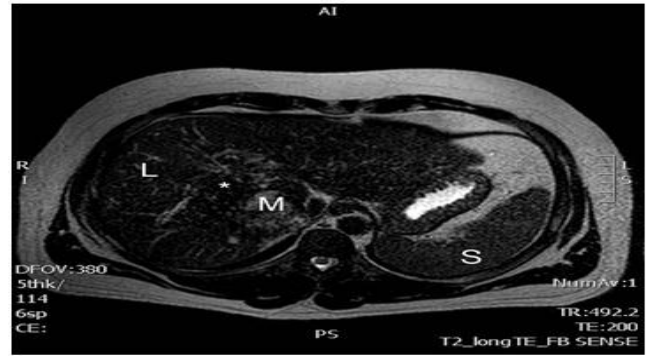


Figure 3 e.



Figure 3 f.



CONCLUSION

Features suggestive of sclerosing hemangiomas included preexisting cavernous hemangioma, decrease in size over time, and evidence of fibrosis seen by MRI. Additional features included the presence of transient

hepatic attenuation difference, rim enhancement, and nodular regions with centripetal enhancement as seen in typical hemangioma. A combination of these findings should raise the possibility of sclerosing hemangioma.

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