

## ATYPICAL VASCULAR LESION OF LIVER- A CASE REPORT

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### ABSTRACT

Computerized axial tomography has revolutionized the diagnosis of space occupying lesions of the liver. Hemangioma of the liver is the most common solid tumor of the liver that can be diagnosed with great degree of accuracy, as it produce characteristic enhancement pattern in Contrast enhanced CT scan. But nevertheless, atypical

radiological findings could cause diagnostic problems. Herein we report an interesting and atypical vascular lesion of the Liver, possibly an atypical hemangioma that was managed successfully with interventional radiological method.

**KEY WORDS:** Hemangioma, Liver, Embolization

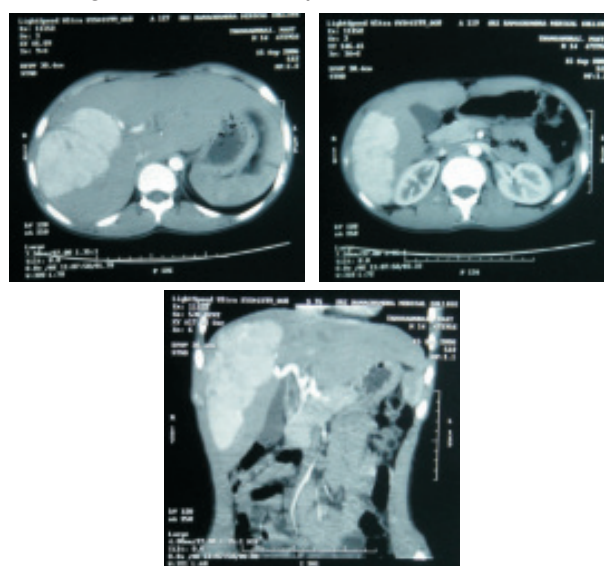
### INTRODUCTION :

Hemangioma of the liver is the most common solid tumor of the liver. With the advent of Contrast enhanced CT scan the diagnosis of hemangioma of liver is easy as it produces typical enhancement pattern. However atypical radiological features create diagnostic problems. The case reported here is interesting as it was atypical radiologically and treated with embolization successfully.

### CASE SUMMARY :

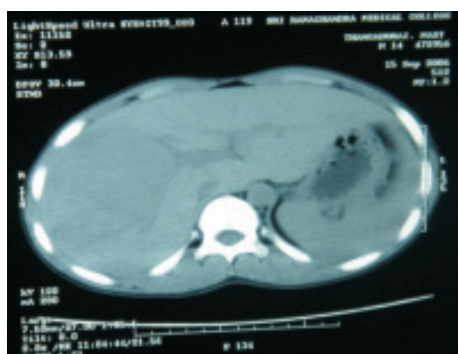
A 14 year old boy presented with complaints of right upper quadrant pain of three months duration. The pain was dull aching in nature that was constant and not radiating. His bowel habits were normal. There were no constitutional symptoms or jaundice. Physical examination revealed a well nourished boy with a palpable liver. No other abnormalities were made out in physical examination. Hemogram and biochemical parameters were normal. Serum Alpha fetoprotein was normal. Ultrasound abdomen picked up a well encapsulated mixed echoic lesion of size 10 cm in the posterior sector of right lobe of liver. CT scan was done to

characterize the lesion better. Plain CT showed a hypodense lesion in the right lobe of the liver in the posterior sector (Fig. 1). In the arterial phase the lesion was found to

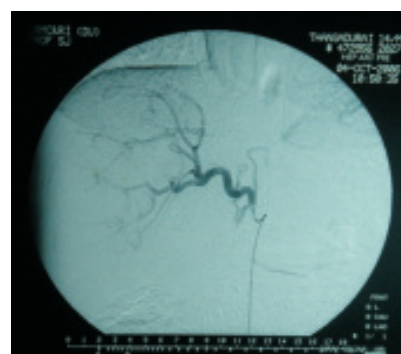


**Fig. 2,3, 4:** Arterial phase of CT demonstrating the brisk and uniform enhancement of the entire lesion

be very vascular as evidenced by the brisk and homogenous contrast enhancement (Fig 2, 3& 4). This pattern was very unusual as none of the space occupying lesions of the liver described in the literature has this pattern of enhancement. Ironically this atypical vascular pattern had favorable therapeutic implications. Hepatic artery angiogram was



**Fig.1:** Plain CT scan showing a hypodense lesion in the right lobe of liver



**Fig.5:** Selective angiogram of right hepatic artery showing the vascularity of the lesion

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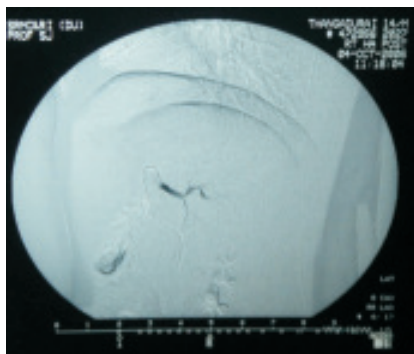
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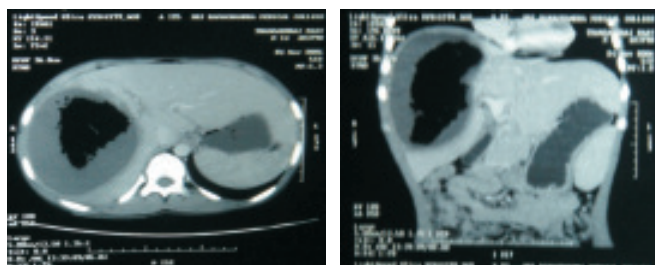
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done and selective cannulation of right hepatic arterial branch supplying the lesion was done with Simmonds



**Fig 6:** Postembolization demonstrating the complete interruption of the blood supply to the lesion

catheter (Fig. 5). Embolization was done using polyvinyl alcohol particles and gel foam. Postembolization pictures revealed complete interruption of the blood supply to the



**Fig. 7 & 8:** CT done six weeks later shows the complete necrosis of the lesion

lesion (Fig.6). Repeat CT imaging done after six weeks showed complete necrosis of the lesion (Fig. 7 & 8). The necrotic lesion was drained completely with Laparoscopic guidance and the fluid sent for culture was found to be sterile. Patient was relieved of his symptoms. He is doing well on follow up. The possible diagnosis in this case could be an atypical hemangioma due to the radiological appearance and as it was producing symptoms in the form of pain it was treated with angio-embolization.

#### DISCUSSION :

The most common solid tumor of the liver is hemangioma with an incidence of about 0.4% to 20% in the population (1). Hemangiomas are usually solitary lesion, but in 50% of the cases it may be multiple (2). These lesions are usually detected as an incidental finding on imaging. Though congenital in origin hemangioma usually present in adults. Hemangioma consists of cavernous vascular spaces lined by endothelium and interspersed with thin stroma. Giant hemangiomas are lesions that are more than 4- 5 cm (3). Though growth of hemangiomas is reported, the most accepted cause of enlargement of hemangioma is by the mechanism of "progressive ectasia" of the vascular spaces (4). Surgical series report a distinct female preponderance whereas autopsy series report an equal incidence. Hemangiomas are usually clinically silent. Symptoms are produced due to enlargement and compression of adjacent structures,

secondary changes and rupture. Large hemangioma may sequester platelets to produce consumption coagulopathy, an entity labeled as Kasabach Merritts syndrome. Symptomatic hemangiomas warrant treatment. The ideal treatment is liver resection or enucleation. Hence it is imperative to rule out other causes of pain before labeling it as a "symptomatic hemangioma". In children large hemangiomas can produce cardiac failure. Interestingly hemangiomas are uncommon in cirrhotics as the fibrotic process impede the development of hemangioma (5).

Hemangiomas are characteristically hyper echoic lesions on ultrasound examination. The typical radiological finding on a CT scan is a hypo dense lesion that has a very characteristic enhancement pattern. In the arterial phase there is "peripheral and nodular" enhancement which fills towards the center (centripetal) in the delayed phase (6, 7). This pattern of enhancement is attributed to the arrangement of vascular spaces tightly in the periphery of the lesion. In the delayed phase the entire lesion becomes uniformly enhanced. The "Light bulb sign" is the typical MRI finding of hemangioma, wherein the hypo intense lesion on T1 weighted images turns into hyper intense on T2 weighted sequences. Angiogram and Single Photon Emission Computerized Tomogram(SPECT) scans are other investigations that are described for the diagnosis of hemangioma. Extremely small and very large hemangiomas may not produce the typical radiological finding. The other causes of atypical radiological finding include degeneration, hemorrhage, thrombosis hyalinization and calcification. Atypical contrast enhancement may occur when there are arterial portal shunts (8). The lesion described in this case report is atypical and fails to fit into any of the classical space occupying lesions of the Liver. But nevertheless the whole lesion is very vascular as evidenced by the brisk and uniform enhancement of the lesion in the arterial phase of CT. This atypical vascular pattern had favorable therapeutic implications, as embolization of the feeding vessels caused complete necrosis of the tumor and the patient was rendered asymptomatic. Arterial embolization is one of the well accepted modality of treatment of symptomatic hemangiomas of the Liver(9).

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