Abstract: Giant hemangiomas have the tendency to enlarge and cause symptoms. This is a case report of a symptomatic rapidly enlarging double giant hemangiomas in each lobe of the liver. Both hemangiomas were successfully removed by synchronous major liver resections without any adverse event. Strictly adhering to safe liver resection techniques, major hepatic resections can be performed safely in high volume centers.

Keyword: Giant Hemangioma, liver resection, hepatectomy

Introduction: Hemangiomas are the most common benign liver tumors, with the estimated prevalence of 0.4-7.3% in autopsy series. 60-80% of them are commonly observed in women (5:1 ratio) between 30 to 50 years. They are usually found incidentally in imaging for other indications. Most of them are usually solitary and in less than 10% of cases multiple lesions are found. Giant hemangiomas are defined as those larger than 10 cm in diameter with tendency to enlarge and occasionally rupture, with no malignant potential. They are commonly seen at peripheral and subcapsular locations, mostly in the posterior segments of right lobe. This is a case report of a symptomatic rapidly enlarging double giant hemangiomas in each lobe of the liver.

Case report: 42 years female with no co-morbid illnesses was admitted during March 2011 with complaints of abdominal distension for 6 months. Clinical examination revealed 30x30 cm firm mobile non-tender mass occupying her upper abdomen. Blood investigations were in normal limits. Imaging studies revealed two large lesions in both right and left lobes, which showed classical enhancement features suggestive of giant hemangiomas.

BILATERAL SYNCHRONOUS MAJOR LIVER RESECTIONS FOR SYMPTOMATIC GIANT HEMANGIOMAS - A CASE REPORT
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CLASSICAL HEMANGIOMA

CONTRAST MRI - PUDDLING SIGN

T2 WEIGHTED - LIGHT BULB SIGN

Considering the benign nature & large size, minimal clinical symptoms, it was decided to do angioembolisation of one haemangiomas at a time to prevent further enlargement. Since patient and her family were not willing for embolisation, patient was discharged at request and was on regular follow up as outpatient. Patient was readmitted during November 2013, with gradually increasing abdominal distension and early satiety and increasing abdominal pain and loss of appetite and weight loss. Clinical examination revealed massive nodular tender liver masses extending below umbilicus, dilated veins in the abdominal wall and ascites.
HUGE ABDOMINAL

HUGE ABDOMINAL DISTENSION
Routine blood and urine investigations were within normal limits with serum AFP of 1.01 ng/ml. Endoscopy showed extraneous impression over stomach with poor distensibility. Duodenum was entered and bile seen. Contrast enhanced CT scan abdomen revealed two large hypodense lesions with peripherally nodular non-contiguous intense enhancement with central non-enhancing areas present each in right & left lobe of liver, largest measuring 22*15.6cm in right lobe.

INCREASE SIZE
Since the patient was symptomatic with limitations of daily activities and evidence of rapidly enlarging nature of the hemangiomas, was decided to do surgical resection for relief of symptoms and to prevent complications. Intraoperative findings were – A giant, lobulated, soft to firm in consistency hemangioma in right lobe of liver involving segments VI, VII, VIII. Another giant hemangioma was seen involving segment II & III, which was exophytic and hanging in nature. Hilum of the liver with major hilar structures were stretched out by enlarging lesions. Middle hepatic vein was stretched along right lobe lesion. Inferior vena cava (IVC) was compressed by the right lobe lesion with dense adhesions around proximal retrohepatic IVC up to the right hepatic vein confluence. Early cirrhotic changes was seen in the remaining part of liver. Two liters of thin clear ascites was also noted. There were no collaterals observed.

LEFT LOBE LESION
Under epidural and general anaesthesia, through right Makuuchi incision – liver was mobilized free all around. For inflow control selective intermittent Pringle’s maneuver and for outflow control low CVP was maintained.

RHV CONTROL
Left lateral segmentectomy was done preserving inflow and outflow vessels to segment IV, future liver remnant. Liver parenchymal transection was performed with hemostasis, using combination of Kelly clamping, harmonic scalpel and bipolar cautery dissection. Pedicles were controlled intraparenchymally. Larger tubular structures were controlled with ligatures and clips. Right lobe of liver was mobilized in standard manner ligating right inferior hepatic vein and small hepatic veins draining into IVC. Selective ligation of inflow structures to right lobe was done and after demarcation parenchymal transection was performed. Middle hepatic vein was safeguarded with liver remnant. Due to dense adhesions of IVC near right hepatic vein confluence a small sleeve of lesion was left intact and Right Hepatic Vein was ligated intraparenchymally. Right hepatectomy as completed preserving some part of uninvolved segment V with its intake inflow and outflow and biliary drainage. Perfect hemostasis and biliostasis was obtained in both post-resection raw surfaces.

POST BILATERAL MAJOR LIVER RESECTIONS - REMNANT LIVER
Patient had a smooth postoperative recovery period. Totally 3 units of packed cell volume were transfused. Patient developed mild post resection liver dysfunction, which improved with conservative management without any adverse outcome. Patient resumed normal diet and regular activities. Patient was discharged in good condition and is on regular follow up as outpatient.

Discussion:
Hemangiomas are benign masses formed by multiple vascular channels limited by single layer of endothelial cells with fibrous stroma. They are supplied by hepatic artery branches and circulation within this these tumors is slow. Morphologically it is a well defined lesion with lobulated margins. Computerized tomography (CT) imaging characteristics of typical hemangioma are hypodense well defined lesion in precontrast images and early nodular peripheral enhancement (puddling sign) and progressive slow centripetal filling in subsequent phases and isodense in delayed phases. Magnetic resonance imaging (MRI) is the key imaging modality in the evaluation of hemangioma. Classic appearance of hypointense lesion in T1 sequences with a strongly hyperintense lesion on heavily T2-weighted sequences, with a “lightbulb” pattern. Dynamic multiphasic T1-weighted sequences after gadolinium chelate administration show findings similar to that of contrast-enhanced CT phases.
Hemangiomas are usually asymptomatic and diagnosed incidentally by imaging. Rarely they become symptomatic due to complications. Pain may be due to capsular stretch, partial infarction, pressure on surrounding tissues. Rarely complications like rupture, abscess formation, bleeding, torsion if pedunculated, compression on adjacent structures, consumptive coagulopathy (Kasabach-Merritt syndrome) were reported.

Treatment ranges from observation to surgical resection. Most of the hemangiomas are small and require no treatment or further follow up. Whatever the size, no treatment is advised for asymptomatic hemangioma. Patients are reassured about the rare occurrence of growth and the extremely low risk of complications. Indications for interventions are symptomatic giant lesions, difficulty exists in excluding a malignancy, Risk of spontaneous or traumatic rupture, Kasabach-Merritt syndrome, Prophylactic excision of asymptomatic large lesions if >10cm in diameter which may have a greater potential for internal bleeding, further growth or rupture. Surgical treatment options are enucleation for anterior and superficial lesions, partial liver resections for large and deeply located lesions, liver transplantation for large unresectable lesions with complications. Surgical treatment showed symptom relief in majority of cases, less effective non-surgical treatment options include selective transcatheter arterial embolisations for high surgical risk patients and radiation therapy in selected cases.

Conclusion:
This is a rare case report of symptomatic double giant hemangiomas involving both lobes of liver, removed by synchronous major liver resections safely. For symptomatic giant hemangiomas, after initial conservative approach, surgical treatment with synchronous double major formal anatomic liver resections is a safe and radical therapy in specialized liver surgical units in select cases.

References: