



CLINICOPATHOLOGICAL PROFILE, SURGICAL INDICATION AND MANAGEMENT OF LIVER HEMANGIOMA : A 10 YEAR EXPERIENCE OF TERTIARY CARE CENTER

Hepatobiliary Surgery

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ABSTRACT

Introduction and AIM: Most common benign liver tumour is hemangioma.[1] Most of the hemangiomas are without any clinical manifestation and are usually diagnosed on evaluation for other diagnosis. Giant hemangiomas when symptomatic and may present with , abdominal pain, early satiety, nausea, vomiting, jaundice, spontaneous or traumatic rupture. Surgical treatment includes commonly enucleation and resection whenever indicated. The aim of our is to study Clinicopathological profile, Surgical indication and management of Liver Hemangioma over 10 years at our tertiary care center. **Methodology:** 10years of data between 2011 to 2021 was collected prospectively and retrospective analysis of data was done for patients who were treated by surgery for hemangiomas.Cases in which biopsy not correlating with hemangioma were excluded. **Results :** During the 10 year period we analyse 23 patients of liver hemangiomas who underwent surgical treatment and postoperative biopsy correlating with liver hemangiomas.Out of 23 patients,female include 20 patients and male includes 3 pateints. In our study the mean age at presentation was 43.8years with range from (22-71year). Most common symptoms was pain abdomen(n=18),lump abdomen(n=2),dyspnoea(n=1),early satiety(n=2). Most common location of hemangioma was in right lobe(n=14) in segment 6. Out Of 23 ,13 were multiple and 10 were solitary.hepatomegaly was present in 13 patients out of 23. On endoscopy 8 patients had extraneous impression over duodenum or stomach. Out of 23 ,15 underwent enucleation and 8 underwent resection, there was no mortality overall,no morbidity in enucleation group while in resection group one patient develop post operative hemorrhage and one develop chyle leak,both managed conservatively. **Conclusion:** Hemangiomas may present with variety of symptoms such as pain abdomen,lump abdomen,early satiety ,and dyspnea.Hemangiomas are more common in females (female:male ratio = 7:1) and presented with peak incidence in 4th and 5th decades .Enucleation and resection were the surgical modalities with enucleation having overall fewer complications.

KEYWORDS

Liver Hemangioma, Giant Hemangioma, Benign Liver Tumor, Surgical Indication Of Hemangioma, Symptomatic Hemangioma

INTRODUCTION

Hemangioma is the commonest benign liver tumor, and with incidence of 3% to 20% in the population. Hemangioma can be diagnosed in any age group with peak incidence in 4th decade of life and are more common in females as compare to males.^[2] Most of the hemangioma are usually silent without any clinical manifestation and diagnosed on evaluation for some other pathology. Asymptomatic hemangioma usually do not require treatment and can be observed with routine followup imaging ^[3-5]. Surgical management is indicated when patient present with progressive abdominal symptoms, rapidly enlarging lesions, Kasabach–Merritt syndrome, spontaneous or traumatic rupture and doubtful diagnosis.^[6] Surgical methods include resection and enucleation whenever indicated. Enucleation is preferred over resection whenever feasible because of less intraoperative blood loss, better postoperative recovery and early discharge.^[7-9]

MATERIAL AND METHODS

10 years of prospectively collected data of patients who were treated surgically for symptomatic hemangiomas between December 2011 to December 2021 at our institute analysed retrospectively. During the 10year period 23 patients of symptomatic haemangioma of the liver were operated which includes 20 females and 3 males. Patient were thoroughly evaluated , proper history was taken with respect to patient clinical presentation and detailed clinical examination was done . Further evaluation was with routine investigation which include blood investigations including complete hemogram,liver function test with International normalized ratio(INR), and renal function test. Esophagogastrosocopy was done as a routine procedure. Ultrasound abdomen was done as first diagnostic imaging. A contrast enhanced computerised tomography (CECT) scan was done to further characterize the lesion in all patients. Typical discontinuous, nodular, peripheral enhancement in the late arterial phase with progressive peripheral enhancement with more centripetal filling in portal phase was diagnostic of an haemangioma. If CECT shows equivocal findings, then magnetic resonance imaging (MRI) was advised . Pre operative diagnosis of Hemangioma was made on basis of clinical and radiological features and postoperatively it was confirmed with histopathological report. Histopathological proven cases were

included in our study for analysis. Before proceeding with surgery, the diagnosis , its management , available treatment options with benefits and complications were discussed in detailed and explained to patients in detail and proper informed consent was taken. The decision of surgical procedure whether enucleation or resection was taken by operating surgeon on basis of size and location with respect to major vessels.

Inclusion criteria

- Age >18years
- Patients who were treated surgically for hemangioma between 2011 to 2021

Exclusion Criteria:

- Patients who were asymptomatic.
- Patients who underwent non operative management (Angioembolisation).
- Patients who do not give consent for the study.
- Post operative Histopathological examination not consistent with hemangioma.

STATISTICS AND RESULTS

23 patients with symptomatic haemangioma of the liver were operated during study period which includes 20 females and 3 males. The mean age of patients was 43.8 years with range from 22-71year. Figure 1 showing demographic characteristics of study population study.

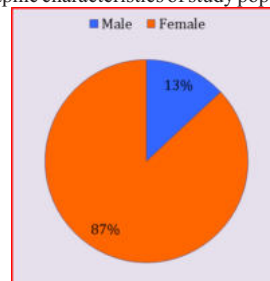
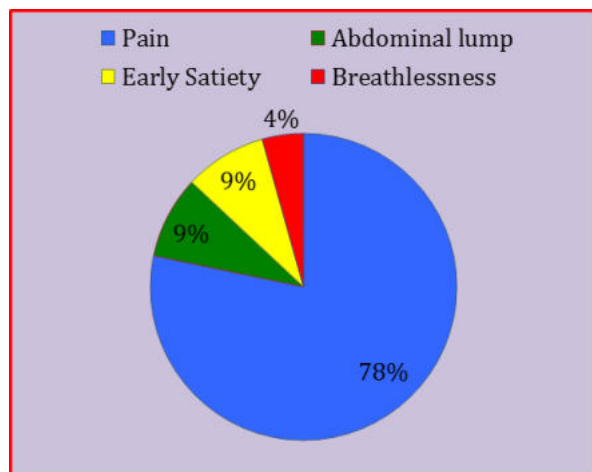
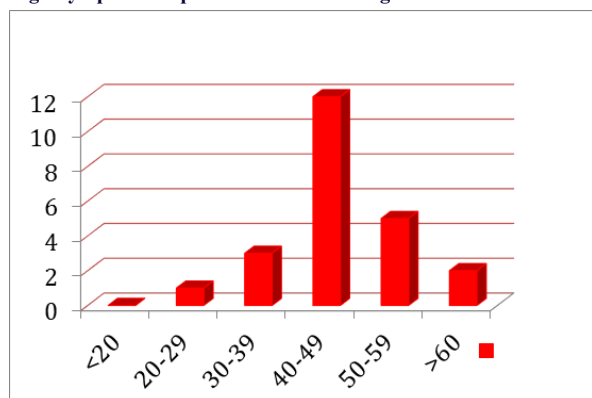
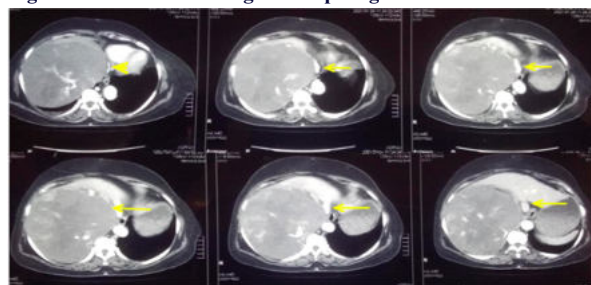
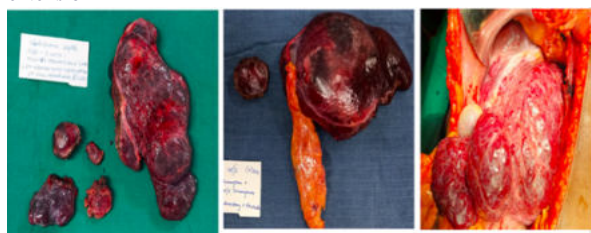
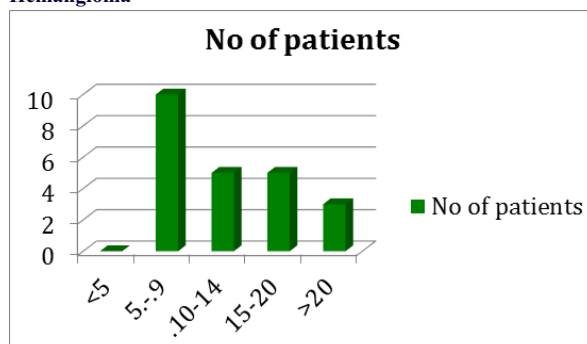


Figure 1 Female:Male=7:1

Table 1 showing characteristics of hemangiomas in our study

Total no cases collected	23
Most common symptom	pain (n=18)
Most common location	Right Lobe (n=14)
Most common segment	Segment 6
Multiple hemangioma	n = 13
Solitary	n = 10
Largest Size	22 cm
Extrenous impression over Stomach	n = 8
Mortality	n = 0
Enucleation	n = 15
Resection	n = 8

**Fig 2 Symptomatic presentation of hemangiomas****Fig 3 Occurance of Hemangioma as per age distribution****Fig 4 CECT showing large hemangioma in right lobe with thoracic extension****Fig 5 Intraoperative and postoperative pictures of multiple Giant****Hemangioma****Fig 6 Distribution of Hemangioma as per size****RESULTS**

During the 10 year period we analyze 23 patients of liver hemangiomas who underwent surgical treatment and postoperative biopsy correlating with liver hemangiomas. Out of 23 patient, 20 were female and 3 were male as shown in Figure 1. The mean age of patients was 43.8 years with range from (22-71 year). Most common symptoms were pain abdomen (n=18), lump abdomen (n=2), dyspnoea (n=1), early satiety (n=2) as shown in figure 2. Most common location of hemangioma was in right lobe (n=14) in segment 6. Out of 23, 13 were multiple and 10 were solitary. hepatomegaly was present in 13 patients out of 23. and on endoscopy 8 patients had extraneous impression over duodenum or stomach. Out of 23, 15 underwent enucleation and 8 resection, there was no mortality overall, no morbidity in enucleation group while in resection group one patient develop post operative hemorrhage and one develop chyle leak, both managed conservatively.

DISCUSSION

Over the period of 10 yrs we operated 23 patients of symptomatic hemangioma. The mean age of patients were 43.8 years with range from 22-71 year which is comparable in study published by Gedaly R et al in which mean age was 47.6 years.^[10] Most lesions were found in women (F:M = 7:1) and most commonly detected in 4th decade of life (Figure 3) which is comparable to results published by Duxbury MS et al in female to male ratio was 5:1.^[11] More prevalence in women with higher parity.^[12-13] In our study most common symptom was pain abdomen (78%), which was similar in study conducted by Gedaly R et al in which pain was most common symptom in 57% of patients.^[10] In other patients two patients present with abdominal lump heaviness in right upper quadrant and another two patients present with early satiety in which endoscopy also revealed external impression over the stomach. One interesting case present with shortness of breath for six months and edema over lower half of body, she presented to us in grade IV dyspnoea, was unable to lie down in supine position. She was not able to hold breath in pulmonary function test and echocardiogram reveals tumour pushing the right ventricle laterally, On further imaging large tumour was found in right lobe arising from segment 8 with thoracic extension of tumour with right hemidiaphragm pushed upward and inferior vena cava was pushed and thinned out laterally Figure 4. So in view of respiratory distress emergency right hepatectomy was done by thoracoabdominal incision by taking control of suprahepatic IVC, in postoperative period patient improved well and relieved of respiratory distress. Most common location of hemangioma in our study was in right lobe in 14 (61%) patients, more specifically in segment 6 which is similar in study published by Gedaly et al in which 61% hemangioma were in right lobe.¹⁰ Out of 23 13 were multiple and 10 were solitary lesions, Figure 5 showing intraoperative picture of multiple hemangiomas. Most of hemangioma were in size range of 5-9 cm with largest size of 22 cm in our study as shown in Figure 6. Routine endoscopy was done in all patients, eight patients had external impression on endoscopy. The decision of surgical procedure was that of operating surgeon, 15 patients underwent enucleation while 8 underwent resection. there was no mortality overall, no morbidity in enucleation group while in resection group one patient develop post operative hemorrhage and one develop chyle leak, both managed conservatively. Table 1 showing different characteristics of hemangioma in our study group.

With the improved quality of imaging and easy availability, incidence of incidental giant haemangiomas has increased recently. These lesions sometimes due to equivocal and atypical findings present a

diagnostic challenge.^[14] Because of this reason in our study we excluded the hemangiomas with diagnostic dilemma and who underwent non surgical management. Only biopsy proven cases were included in our study. In a study from the Memorial Sloan Kettering Cancer Center (n = 52) in 29% of patients the indication for surgery was doubtful diagnosis.^[15] The choice to plan surgical procedure was that of operating surgeon on basis of size and location with respect to major vessels. With enucleation the risk of injury of vessels and bile is less as enucleation was performed outside the fibrous capsule of hemangioma. Enucleation can be performed safely for any size of tumour and has the advantage of less intraoperative blood loss, less risk of bile leakage, maximum preservation of liver parenchyma, less postoperative morbidity and less overall complications.^[10,16] Zimmermann and Baer et al described the well-formed fibrous capsule surrounding the hemangioma and its surgical significance, as no bile ducts traversing the plane between the liver and the haemangioma, enucleation results in less postoperative bile leak as compare to liver resection.^[17] In a study done by Brouwers et al in which 24 patients treated by liver resections, early postoperative complications developed in 5 patients (21%) out of which 2 had bile leaks.^[16] In multivariate analysis by Gedaly et al on surgery for hepatic hemangiomas (n = 28), found that enucleation was associated with less intra-abdominal complications as compared to resection.^[10] It was also found that intra- and postoperative complications were more in patients undergoing liver resection resulting in prolonged hospital stay. Hamaloglu et al and Lerner et al also reported similar findings in which enucleation has advantage of less intraoperative blood loss, less bile leakage, less overall complications and better postoperative recovery.^[18,19]

Limitations

The limitations of our study was it is a single centre retrospective study and the decision regarding the operative procedure was that of operating surgeon as per his experience and expertise.

Strength

Long duration of study with inclusion of only histopathological proven cases prevents dilution of data from asymptomatic and diagnostic uncertainty cases of hemangioma.

CONCLUSION

Symptomatic Hemangiomas may present with variety of symptoms such as pain abdomen, lump abdomen, early satiety, and dyspnea. Most Hemangiomas were found in women in 4th decade of life with female: male ratio of 7:1. Enucleation and resection were the surgical modalities with enucleation having overall fewer complications.

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