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Study of relative frequency, causes and clinical presentation of pathological swellings of liver

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Abstract

Introduction: Swelling in the epigastrium is caused by those organs anatomically present in the epigastric region and sometimes by other organs situated in other parts of body in the other regions. This study was done to know the clinical presentation of swellings arising from liver among the epigastric swellings.

Methods: Fifty-two cases with a pathological swelling in the epigastrium, who were admitted to tertiary care center, were randomly selected and studied during their stay in the hospital. The patients of age more than 12 years were included. Relevant investigations were done and the diagnosis confirmed.

Results: There were total 25 cases with liver swellings in Liver. Liver abscess was 23%, liver cyst 5.7%, hydatid cyst of liver and hepatocellular carcinoma 3.84% each and hemangioma about 1.96% of the total no. of cases. Nausea (61.53%), pain (55.76%), vomiting (51.95%), weight loss (40.38%), fever (34.61%), anorexia (32.69%) were the presenting symptoms.

Conclusion: Liver abscess was the most common swelling in the liver. The least common swelling was hemangioma (1.96%). Most common symptom was nausea, followed by pain, weight loss. The least common symptom was gastrointestinal bleeding.

Keywords: Epigastrium, liver, liver abscess, nausea, pain, vomiting

Introduction

Liver abscess descriptions dates back to Hippocrates in approximately 4000 B.C. John bright provided the first description of the disease in modern medicine in 1836 while giving discourse on jaundice. In 1938, Ochsner and associates provided a landmark collective review of pyogenic liver abscesses in the preantibiotic era [1]. In 1856, Bristowe first reported a case of nonparasitic cystic disease of the liver and emphasized the association with polycystic renal disease. In the same year, Michel recorded the first solitary, nonparasitic cyst. Hadad and associates reviewed almost 900 cases of the cysts [2] Frerich, 1861 is credited with the first description of hemangiomas in medical literature [3]. Rokitansky, in 1855, first distinguished between primary and metastatic hepatic tumors. The first hepatic resection for metastatic diseases were reported by Garre, in 1888, and by Keen in 1899, and Wangensteen performed a total right lobectomy in 1949 for a metastasis from gastric cancer. In 1963, Woodington and Waugh first demonstrated that resection of hepatic colorectal metastases resulted in improved survival [4]. The abdomen as a whole and epigastrium in particular, provokes and challenges the abilities of the surgeon in eliciting the clinical findings and their interpretation. If we consider the number of organs pathologically involved in each region, epigastrium has a significant number of organs involved. In this study, an effort has been made to study swellings from liver, which forms a significant percentage of the pathology of the swellings present in the epigastrium. The left lobe of the liver is predominantly present in the epigastrium, but when the right lobe is also enlarged there is significant part of the liver palpable in the epigastrium. Here, an effort to study the space occupying lesions of the left lobe of the liver has been made.

Methodology

The material of study was obtained from the patients admitted during the period of April 2004 to March 2006 in a tertiary care hospital. 52 cases of epigastric swellings, were selected randomly, and studied during their stay in the hospital. Each of these cases was studied according to the case proforma, taking a detailed history and the cases were examined thoroughly.

The presence of the swelling in the epigastrium was confirmed by ultrasound scan and/or CT scan. The other relevant investigations were done to arrive at the diagnosis.

Results

Table 1: Epigastric swellings, relative frequency of the organs involved

Swellings	Number of cases	Percentage
Swelling from the liver (left lobe)	25(4)	48.07

Out of the 52 cases selected, 29 were swelling from the liver (left lobe),

Table 2: Epigastric swelling, relative frequency of symptoms, as a whole

Symptoms	No of cases	Percentage
Pain	29	55.76
Nausea	32	61.53
Vomiting	27	51.9
Fever	18	34.61
GIT bleeding	5	9.61
Anorexia	17	32.69
Weight loss	21	40.38
Jaundice	15	28.84

All the cases when considered together, nausea was the most common symptom (61.53%), followed by pain (55.76%), vomiting (51.9%), weight loss (40.38%), fever (34.61%), anorexia (32.69%), jaundice (28.84%), GIT bleed was the least common symptom about 9.61% (table 2).

Table 3: Epigastric swelling, age wise distribution

Age (years)	Number of cases
14-30	4
31-50	25
51-70	21
≥ 71	2

The age of; distribution of epigastric swellings has been described in table 3. The most number of patients about 25 cases are in the age group of 31-50 years. This was followed by age group of 51-70 which accounted for 21 cases, then the age group of 14-30 which numbered around 4 cases, and the least number of cases were above 71 about 2 cases.

Table 4: Epigastric swelling, sex wise distribution

Sex	Number of cases
Male	38
Female	14

Among the 52 cases, 14 were female patients and 38 were male patients. The present study shows that, there were, more number of male cases, about 2.71 males for every female patient (table 4).

Liver Swellings

Table 5: Liver swellings of left lobe, relative frequency of the cause

Swellings	Number of cases	Percentage
Liver abscess	12	41.3
Secondaries liver	9(4)	31.03
Liver cyst	3	10.34
Hydatid cyst of liver	2	6.89
Hepatocellular carcinoma	2	6.89
Haemangioma of liver	1	3.44

Among the 29 cases of liver swelling of left lobe, 12 cases were liver abscess, 9 cases were secondaries of liver, 3 cases were liver cyst, 2 cases were hydatid cyst of liver, 2 cases were hepatocellular carcinoma and 1 case was haemangioma of the liver (table 5).

Table 6: Liver abscess, relative frequency of amoebic and pyogenic liver abscess

Liver abscess	Number of cases	Percentage
Amoebic liver abscess	7	58.33
Pyogenic liver abscess	5	41.66

Among the 12 cases, 7 cases were of amoebic liver abscess forming about 58%, and 5 cases of pyogenic liver abscess, which formed about 42% (table 6).

Table 7: Liver abscess, sex distribution

Sex	Number of cases	Percentage
Males	10	83.33
Females	2	12.66

Liver abscess, considering both pyogenic and amoebic, males were more affected than females. The patients in this study were between the ages of 26-43 years (table 7).

Table 8: Amoebic liver abscess, relative frequency of the symptoms

Symptoms	Number of cases	Percentage
Pain	7	100
Fever	6	85.7
Nausea	5	71.4
Vomiting	5	71.4
Anorexia	3	42.8
Weight loss	2	28.57
Malaise	1	14.28
Jaundice	1	14.28

All the cases presented with pain, the next common symptom was fever about 86%. Other symptoms were nausea, vomiting, each making 71% of the symptoms, anorexia about 43%, weight loss about 28.5%, malaise and jaundice 14% (table 8). All the patients in the present study were alcoholic. Hepatomegaly was present in all cases. Serum bilirubin was increased (around 5 mgm/dl) only in 1 case. Serum alkaline phosphatase was increased in 3 cases. It was not done in 4 cases. All the cases had single left lobe liver abscess as shown by ultrasound scan, the volume of the abscess cavity was between 115 ml to 312 ml. On aspiration there was anchovy sauce like pus in these cases and it was sterile on culture. The patients in the study with pyogenic liver abscess, were in the age group of 48-70 years, about 4 cases more than 50 years (80%). There were 2 female cases and 3 male cases, a ratio of 1.5 males for every female.

Table 9: Pyogenic liver abscess, relative frequency of the symptoms

Symptoms	Number of cases	Percentage
Fever	4	80
Weight loss	3	60
Pain	3	60
Nausea	3	60
Vomiting	3	60
Malaise	3	60
Chills	2	40
Anorexia	2	40
Jaundice	2	40

Fever was the most common symptom present in about 80% cases. The other symptoms were weight loss, pain, nausea, vomiting, malaise each present in about 60%, and chills anorexia, jaundice were present in about 40% of the cases of pyogenic liver abscess (table 9). There were multiple abscesses in 2 cases and rest of 3 cases it was a single left lobe lesion, the lesions were measuring between 140 ml to 656 ml. Serum bilirubin was raised in 2 of the 5 cases, and alkaline phosphatase was raised in 4 cases and it was not done in 1 case. There was marginal increase of SGOT in 3 cases and normal in 1 case and not done in 1 case. The culture of the pus yielded a mixed infection. There were 9 cases with liver secondaries. Among them, 8 were male, and 1 was female (table 10).

Table 10: Liver secondaries, sex distribution

Sex	Number of cases
Male	8
Female	1

Table 11: Liver secondaries, etiology

Liver secondaries	Number of cases	Percentage
Carcinoma stomach	1	11.1
Carcinoma colon and rectum	3	33.3
Carcinoma pancreas	3	33.3
cholangiocarcinoma	1	11.1
Carcinoma lung	1	11.1

In the present study of liver metastases, primary is commonly from gastrointestinal tract (carcinoma colon, carcinoma pancreas, carcinoma rectum, carcinoma stomach and cholangiocarcinoma.). The other case is a carcinoma lung with liver secondaries (table 11).

Table 12: liver secondaries, relative frequency of the symptoms

Symptoms	Number of cases	Percentage
Weight loss	7	77.7
Jaundice	3	33.3
Vomiting	2	22.2
Anorexia	6	64.4
Nausea	3	33.3
Ascites	2	22.2
Hepatomegaly	6	64.4

In this study, most common symptoms were weight loss and anorexia which was about 78% and 64% respectively. Jaundice and nausea were present in 33% of cases, vomiting in 22% of cases, ascites in 22% of cases (table 12). Serum bilirubin was increased in 4 cases. Serum alkaline phosphatase in 1 case and serum glutamic pyruvic transaminase and serum glutamic oxaloacetic transaminase were increased in 2 cases. There were two cases of hepatocellular carcinoma in this study, both were males, and of age 40 years and 50 years. Both had jaundice, loss of weight, vague epigastric pain, nausea. One case had GI bleed, ascites and on ultrasound scan there were features suggestive of IVC thrombosis. There was increased bilirubin, increased SGPT and SGOT. There was one case of hepatic cyst along with polycystic kidney disease. The patient was asymptomatic with regards to the liver cyst. There was hepatomegaly and renal enlargement on either side, with hypertension. It was detected on ultrasound scan of abdomen which showed multiple cysts of the liver and kidneys. The second case of liver cyst was a simple cyst of the liver, this was also asymptomatic. The patient presented with symptoms of left ureteric colic and there was hepatomegaly. There was one case of traumatic liver cyst. This

patient presented with pain in the epigastrium dull aching type. He gave history of trauma about one month back and on examination, there was enlargement of liver. On ultrasound scan of the abdomen, there was a traumatic cyst in the liver which was in the left lobe and subcapsular in position. There was one case of haemangioma of liver which was asymptomatic. The patient presented with symptoms of appendicitis, there was enlargement of liver. The hemangioma was diagnosed on ultrasound scan of the abdomen. There were 2 cases of hydatid cyst of liver, one was male (aged 40) and the other female (aged 30).

Table 13: Hydatid cyst of liver, relative frequency of the symptoms

Symptoms	Number of cases	Percentage
Pain	2	100
Fever	-	-
Vomiting	2	100
Anorexia	-	-
Weight loss	-	-
Jaundice	-	-

Both the cases presented with pain and vomiting, and there was no other symptom associated with it (table 13). There was hepatomegaly in both the cases. On ultrasound scan, one case showed multiple hydatid cysts in both the lobes of the liver, eosinophilia and elevated SGPT and another case showed single left lobe hydatid cyst of liver with normal blood investigations.

Discussion

The findings of our study were compared with that of Maingot *et al.* The percentage of occurrence of symptoms are similar in both the studies. Weight loss is higher in the Maingot’s study, all the cases in our study had hepatomegaly whereas about 85% of patients had hepatomegaly according to Maingot’s study [5] (table 14). Increased bilirubin was found in 10% as given by Maingot’s. In the present study, only one case out of the 7 had bilirubin more than 2 gm/dl which is about 14.28%. In our study the cases were aged in the range of 48-70 years, most of the cases in the sixth decade. This is similar to Schwartz [6] who also reported peak incidence in the 6th and 7th decade.

Table 14: Comparison table, of symptoms of amoebic liver abscess

Symptoms	Maingot’s study	Present study
Pain	90%	100%
Fever	87%	85.7%
Nausea and vomiting	85%	71%
Anorexia	50%	42.8%
Weight loss	45%	28.57%
Malaise	25%	14%

Rise in alkaline phosphatase was the most common derangement of LFT according to Maingot’s study which was about 87%. This is similar to our study where ALP is raised in 4 out of 5 cases, that is, about 80% of the cases. The symptomatology in the 2 cases of hepatocellular carcinoma in this study, were the same as that by Okukak study [7] who gave the same signs and symptoms. It was more common in the age group of 30-50 years⁸. In our study, most common primary tumour of liver metastases was from colorectal cancer and pancreas. This is similar to that given in Maingot’s study [9]. In our study, most common symptoms were weight loss and anorexia while hepatomegaly was the commonest sign, which is similar to S Das [10] (Table 15).

Table 15: Comparison table of symptoms of pyogenic liver abscess

Symptoms	S. Das study	Present study
Fever	83%	80%
Weight loss	60%	60%
Pain	55%	60%
Nausea and vomiting	50%	60%
Malaise	50%	60%
Chills	37%	40%
Anorexia	34%	40%

Conclusion

Liver is the most common organ involved in the pathological swellings of the epigastrium. Liver abscess is the most common cause of the swellings of the epigastrium. These are more common in the age group of 31-50. Males are commonly affected. The swelling patients have most commonly has nausea, pain, vomiting. Liver abscess was the most common pathological swelling in the liver. The patients with amoebic liver abscess complaints of pain, fever, nausea, vomiting, rarely jaundice may be seen. The abscesses in the left lobe were smaller than those in the right lobe, before complications occurred. Pyogenic abscess affected males slightly higher than females. They had fever, pain, weight loss, nausea, vomiting as the complaints. Jaundice was more common in pyogenic liver abscess than amoebic liver abscess. The liver abscess was associated with increase in alkaline phosphatase. The liver secondaries were commonly encountered with the primaries from the gastrointestinal tract. The symptoms include weight loss, anorexia, jaundice, nausea. Hepatocellular carcinoma had sex preference, presented with pain, weight loss, jaundice, nausea. Hepatic cysts were asymptomatic as well as hemangioma which are an incidental finding. Hydatid cyst of the liver seems to affected both males and females equally, had pain and vomiting on presentation.

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