

## Study of relative frequency, causes and clinical presentation of pathological swellings of epigastric region

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### Abstract

**Introduction:** Swelling in the epigastrium is caused by those organs anatomically present in the region as well as by other organs in the other regions. This study was done with an interest to know the clinical presentation of the various cause of the epigastric swelling.

**Methods:** Fifty-two cases with a pathological swelling in the epigastrium, who were admitted to tertiary care center, were randomly selected those cases were studied during their stay in the hospital. In this study, the swelling from stomach and pancreas were included aged more than 12 years and the rest excluded. Relevant investigations were made and the diagnosis confirmed.

**Results:** There were 16 cases of pancreatic swellings and 11 cases of stomach swellings. Carcinoma stomach and pseudocyst each 21%, secondaries 17%, carcinoma pancreas 9.6%. Symptoms were Nausea (61.53%), pain (55.76%), vomiting (51.95%), weight loss (40.38%), fever (34.61%), anorexia (32.69%).

**Conclusion:** In this study, the most common swelling was the carcinoma stomach and pseudocyst of pancreas. Most common symptom was nausea, followed by pain, weight loss. The least common symptom was gastrointestinal bleeding.

**Keywords:** Epigastrium, stomach, pancreas, carcinoma stomach, pseudocyst pancreas, nausea, pain, vomiting

### Introduction

The swellings include carcinoma stomach, carcinoma transverse colon, rolled up omentum, true cysts and tumors of the pancreas, pseudopancreatic cyst, enlarged lymph nodes, aortic aneurysm, lumps from the kidneys and adrenals. The pathological swellings may be present not only from the organs, present here anatomically, but, also from the neighboring regions like an enlarged gall bladder, mesenteric cysts, ovarian cysts, enlarged spleen with loose ligamentous attachment. These lesions are a challenge in the sense, the organs are related to each other and the physiology also inter dependent, so there can be disturbance in their

normal functioning even though not primarily affected. So, the symptoms also are overlapping which makes it confusing in arriving to the diagnosis. In this study, an effort has been made to study swellings from stomach, pancreas which forms a significant percentage of the pathology of the swellings present in the epigastrium.

**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. Whichever cases were operated, the physical examination findings were confirmed.

**Results:** Out of the 52 cases selected, 11 were swelling from stomach and 16 were swelling from the pancreas. 4 cases were common with liver secondaries, 1 case of carcinoma stomach and liver secondaries, the other 3 cases were of carcinoma pancreas and liver secondaries. The same has been shown in table 1.

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

Swellings	Number of cases	Percentage
Swelling from stomach	11(1)	21.15
Swelling from the pancreas	16(3)	30.76

In this study, most common cause of epigastric swelling is carcinoma stomach and pancreatic pseudocyst each constituting about 21%. The others are carcinoma pancreas (9%). The same has been shown in table 2.

**Table 2:** Epigastric swelling, relative frequency of the causes

	Number of cases	Percentage
Carcinoma stomach	11(1)	21.15
Pseudocyst pancreas	11	21.15
Carcinoma pancreas	5(3)	9.61

**Table 3:** Swellings of the pancreas, relative frequency of the cause

Swellings	Number of cases	Percentage
Pseudocyst of pancreas	11	68.75
Carcinoma pancreas	5(3)	31.25

Among the 16 cases of the pancreas, 11 cases were pseudocyst of pancreas and 5 cases were carcinoma pancreas (table 4).

**Table 4:** Epigastric swelling, relative frequency of symptoms according to its causes

Swellings	Number of cases	Percentage
Pseudocyst of pancreas	11	68.75
Carcinoma pancreas	5(3)	31.25

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 5).

**Table 5:** 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

**Table 6:** Epigastric swelling, age wise distribution

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

The age wise distribution of epigastric swellings has been described in table 7. 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 7:** 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 8).

**Table 8:** Carcinoma stomach, age wise distribution

Age (years)	Number of cases
30-40 years	1
41-50	1
51-60	6
61-70	3

Carcinoma stomach was studied in various age groups and found that, there was one case around the 4<sup>th</sup> decade, one case in the 5<sup>th</sup> decade and 6 cases in the 6<sup>th</sup> decade whereas 3 cases in 7<sup>th</sup> decade. Maximum number of case pooling, were seen in the 6<sup>th</sup> decade. There were about 8 male cases and 3 female cases. The ratio was about 2.66 cases of male for every 1 case of female (2.66: 1), (table 9 & 10).

**Table 9:** Carcinoma stomach, sex wise distribution

Sex	Number of cases
Male	8
Female	3

**Table 10:** Carcinoma stomach, relative frequency of symptoms

Clinical presentation	Number of cases	Percentage
Anorexia	7	63.63
Nausea	4	36.36
Vomiting	8	72.72
GI bleed	3	27.27
Pain	3	27.27
Weight loss	4	36.36
Jaundice	1	9.09

About 72% of patients (8 cases) had history of vomiting and 64% of patients (7 cases) had history of anorexia, 4 cases, about 36% had nausea and weight loss, 3 cases, about 27% of them had upper GI bleed in the form of hematemesis, and epigastric pain. There was jaundice in one case (9%).

**Table 11:** Carcinoma stomach, relative frequency of distribution of the patients based on location of the tumour, upon physical examination

	Number of cases
E	5
E + RH	2
E + U	2
E + RH + U	2

In the present study most of the cases, the mass was palpable only in the epigastrium about 5 of them. The mass was felt in epigastrium and right hypochondrium in 2 cases, in epigastrium and umbilical region in 2 cases, and in the remaining 2 mass was extending into all three regions of epigastrium, umbilicus and right hypochondrium. None of the mass moved with respiration. The mass was fixed in one case with ascites and liver secondaries. The patient had undergone gastrojejunostomy, 20 years before presenting to the hospital. There was incisional hernia along with mass in case no.12. He was earlier operated for duodenal ulcer perforation, 15 years back.

**Table 12:** Carcinoma stomach, distribution of patients with respect to haemoglobin value

Haemoglobin	Number of cases
≥ 8	3
8-11	4
≥ 11	4

In the present study, about 7 cases were anaemic and among them 3 were severely anaemic with the > 8 gm%. All the cases in the present study were adenocarcinoma on HPE. LFT was altered in one case with liver metastasis along with carcinoma stomach. The location of the tumor was confirmed by endoscopy and/or barium meal and further on operation.

**Table 13:** Carcinoma stomach, operative/endoscopic location of the mass

Site of the tumor	Number of cases
Fundus/cardia	5
Prepyloric and antrum	2
Body	2
Prepyloric + antrum + body	2

In about 5 cases the tumor was present in the lesser curvature of the stomach extending onto

fundus/cardia. In two cases tumor was located near the prepyloric region and the antrum, in two cases tumor was over the lesser curvature extending onto the body, in the remaining two cases, tumor was on the body extending onto the lesser curvature and prepyloric region.

**Table 14:** Liver secondaries, sex distribution

Sex	Number of cases
Male	8
Female	1

**Table 15:** 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 16:** 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. Serum bilirubin was increased in 4 cases. Serum alkaline phosphatase in 1 case and SGPT and SGOT were increased in 2 cases of Hepatocellular carcinoma. Both had jaundice, loss of weight, vague epigastric pain, nausea, had GI bleed, ascites and on ultrasound scan there were features suggestions of IVC thrombosis. There was increased bilirubin, increased SGPT and SGOT. Second case had increased bilirubin, increased SGPT and SGOT. Both the cases presented with pain and vomiting, and there was no other symptom associated with it. In a case there was eosinophilia and elevated SGPT. In the other case, the blood investigations done were within normal limits. There were about 5 cases of carcinoma pancreas. One case was aged below 60 years and the rest of the patients were aged above 60 years.

**Table 18:** Carcinoma pancreas, age wise distribution

Age (years)	Number of cases
< 60	1
> 60	4

There were 2 females and 3 males in this study.

**Table 19:** Carcinoma pancreas, sex distribution

Sex	Number of cases
Male	3
Female	2

**Table 20:** Carcinoma pancreas, relative frequency of symptoms

Symptoms	Number of cases	Percentage
Nausea	3	60
Pain	2	40
Fever	2	40
Jaundice	3	60
Anorexia	1	20
Weight loss	1	20
Vomiting	1	20

The common symptoms in the present study were nausea and jaundice which were present in 60% of the cases. Pain in the epigastrium and fever was present in 40% of the cases. Anorexia, weight loss and vomiting were present in 20% of the cases. There was mass palpable in one case, and in the rest of the four cases, there was hepatomegaly on examination and these were diagnosed as having carcinoma pancreas on ultrasound scan or CT scan. There was palpable GB in two cases. The 2 cases with fever were associated with jaundice. Three, out of 5 cases had diabetes mellitus. There were liver secondaries in 3 cases. Serum bilirubin, alkaline phosphatase, Serum Glutamate-Pyruvate Transaminase and Serum Glutamic-Oxaloacetic Transaminase were increased in 3 cases. Serum amylase was normal in all the 5 cases in this study. Pseudocyst of pancreas there were about 11 cases of pseudocyst of pancreas. Among them there were 7 male patients and 4 female patients, a ratio of about 1.75 males for every female patient.

**Table 21:** Pseudocyst of pancreas, Age wise distribution

Age (years)	Number of cases	Percentage
< 20	1	9.09
21-40	5	45.45
41-60	3	27.27
> 60	2	18.18

There were large number of patients (45.45%) with pseudocyst of pancreas, in between the age group of 20 and 40 years. There was one case which was 15 years of age. There were 27.27% of cases in between the age 41-60 and 18.18% over 60 years of age. Average age of cases was 42.5 years. Among the 11 cases, about 6 cases had past history of alcohol consumption, 2 had past history of jaundice with gall stones and one case had past history of trauma. There was no significant past history related to pseudocyst of pancreas in 2 cases.

**Table 22:** Pseudocyst of pancreas, distribution of cases based on etiology

Etiology	Number of cases	Percentage
Alcohol	6	54.54
Gall stone	2	18.18
Trauma	1	9.09

**Table 23:** Pseudocyst of pancreas, relative frequency of the symptoms

Symptoms	Number of cases	Percentage
Pain	9	81.81
Nausea	9	81.81
Vomiting	7	63.63
Fever	6	54.54
Anorexia	-	-
Loss of weight	4	36.36
Jaundice	6	54.54

Most common symptoms in this study were pain and nausea which were present in about 82% of the patients. The other symptoms like vomiting formed about 63%, fever and jaundice each about 54%, and loss of weight in 36.36% of the cases. On examination, mass was palpable in all the cases, mass was palpable in epigastrium alone or epigastrium and right hypochondriac or epigastrium and left hypochondrium or in the epigastrium, left and right hypochondriac or in the epigastrium, right hypochondrium, left hypochondrium and the umbilicus.

**Table 24:** Pseudocyst of pancreas, location of mass on palpation

Region where mass was felt	Number of cases	Percentage
E	1	9.09
E + RH	3	27.27
E + LH	3	27.27
E + LH + RH	2	18.18
E + RH + LH + U	2	18.18

The same findings were come across on ultrasound scan or CT scan. All the cysts were unilocular. There was raised serum bilirubin and increased SGPT and SGOT in 6 cases. Serum amylase was raised in 5 cases and normal in rest of the cases in this study.

## Discussion

In this study, maximum number of cases of carcinoma stomach were between 51 to 60 years, male: female ratio is around 2.33:1 which is comparable to study by Issac Hassan <sup>[1]</sup> who gives a range from 2:1 to 7:1. In this study the percentage of cases, the symptoms are compared with the ABC study of R.C. Spiller <sup>[2]</sup>.

**Table 25:** Comparison table of symptoms of carcinoma stomach

Symptoms	Present study	ABC study
Anorexia	63.6%	55%
Nausea	36.36%	37%
Vomiting	72.72%	59%
GI bleed	27.27%	32%
Pain	27.27%	25%
Weight loss	36.36%	33%

In our study, vomiting is present in more percent of cases than his study, probably because the cases are more advanced and early stage disease is not considered. About 64% of patients were anaemic, which is more than that mentioned in Sabiston<sup>3</sup> who gives a value of 40% of patients being anaemic. This high value may be attributed to associated nutritional anaemia and also because of the advanced cases considered in our study. This study has a most

common tumour location in the lesser curvature and the fundus which is the same as by study by Issac <sup>[1]</sup>. All the cases in the present study were adenocarcinoma which reflects the same result as the study by Sambasivaiah K. *et al.* <sup>[4]</sup> where in 151 patients of carcinoma stomach, 148 patients were adenocarcinoma. In our study, the patients were in the 6<sup>th</sup>, 7<sup>th</sup> and 8<sup>th</sup> decades. Maingot's <sup>[5]</sup> also gives the same age as to when carcinoma pancreas is commonly seen. In this study, there are 3 male patients and 2 female patients showing a male predilection. According to Devita <sup>[6]</sup>, majority of patients present with jaundice. In this study jaundice is the most common symptom. Yeo TP <sup>[7]</sup> gives that jaundice of carcinoma pancreas is accompanied by other signs and symptoms, such as abdominal pain, dark urine, light stools, weight loss, pruritis, weakness, anorexia. Mahesh Kumar <sup>[8]</sup> also found that, there is pain and anorexia. In this study pain is present in 40% of patients, it has been recorded that pain is present in 34% cases. Hepatomegaly was present in 4 cases (80%) in this study, and it was found in 65% cases. In the present study it was present in 2 cases (40%). The increase in the value regarding hepatomegaly is because, in this study the cases with epigastric mass is considered and those without are excluded. In this study, the pseudocyst of pancreas, were more common in male and was in a ratio of 7:4 (1.75: 1). This is the same as that given by Schwartz <sup>[9]</sup> who gives a value of 2:1 ratio. In this study, the age group range from 15-73 most common between 20-40 years. The range according to David B *et al.* <sup>[10]</sup> is 23-72 years which is comparable. The average age of diagnosis is 45 years <sup>[9]</sup> whereas in this study average age is around 42.5 years which is slightly less than that of Schwartz. Most common symptom according to Crass and Becker <sup>[11]</sup> is pain (90%). In this study pain was present in 82% of cases. Nausea is present in 78% of cases in study by David B *et al.* <sup>[10]</sup> In this study it is 82% of cases which is comparable. Loss of weight in this study were in 36% of cases similar to that mentioned in Maingot's <sup>[5]</sup>. Jaundice and fever was present in 55% cases in this study and about 60% to Maingot's <sup>[5]</sup>. Vomiting was present in 55% of cases in this study. According to David *et al.* <sup>[11]</sup> it is present in 77%, but Maingot's gives that it is present in half of the patients <sup>[5]</sup>. According to David B. *et al.* study, alcohol was the most common cause, the same is present in the present study, where 6 out of 11 cases had history of alcohol consumption. Serum amylase was raised in about 5 cases in the present study about 46% of cases and is similar to that stated by Schwartz <sup>[9]</sup> who says that 50% of them have persistent hyperamylasemia.

## Conclusion

Carcinoma stomach is the most common pathological swelling of the stomach, in the epigastrium. It affects males more commonly people of in the 6<sup>th</sup> decade are at high risk of developing carcinoma stomach. Most of the patients of carcinoma stomach complaints of anorexia, vomiting. A large number of patients are anaemic. Adenocarcinoma is the most common pathological picture of the mass. Males are more commonly affected. The liver secondaries are commonly encountered with the primaries from the gastrointestinal tract. The symptoms include weight loss, anorexia, jaundice, nausea. Hepatocellular carcinoma has sex preference, presents with pain, weight loss, jaundice, nausea. Hepatic cysts are asymptomatic as well as hemangioma which are an incidental finding. Hydatid cyst of the liver seems to affect both males and females equally, has pain and vomiting on presentation. Carcinoma pancreas affect people aged more than 60 years, males are more affected, complaints of nausea, pain, jaundice, fever if associated with cholangitis. Pseudocyst of pancreas more commonly affects males, more common in fourth decade of life. Alcohol is the most common etiology.

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