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Research Article

Role of routine upper gastro intestinal endoscopy in patients of cholelithiasis presenting with dyspepsia in rural set-up

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ABSTRACT

Background: Cholelithiasis is one of the most common problems encountered in surgery department. Symptoms may be acute or chronic. Chronic symptoms are usually dyspeptic. Dyspeptic symptoms are also present in other upper (Gastro intestinal) GI pathologies. UGIE is investigation of choice for definitive diagnosis of upper GI pathologies. Upper GI endoscopy and endoscopist still are not easily available in rural or small towns, CHC or district hospital in India. So it is not easy to perform routine upper GI endoscopy in all patients of cholelithiasis with dyspepsia in these set ups. Endoscopy also gives economic burden to the poor patients. So our study questioned is it really necessary to perform upper GI endoscopy in all patients of cholelithiasis presenting with dyspepsia and to identify the various common UGI pathologies seen on UGIE in all cholelithiasis patients with dyspepsia in rural population.
Methods: Present study was carried out in department of surgery in UP Rural Institute of Medical Science and Research, Saifai, Etawah (U.P.) during January 2014 to august 2015. 100 patients admitted under IPD were taken for the study, considering the exclusion and inclusion criteria.
Results: In our study, it was found that, dyspepsia with gall-stones was commonly seen in females in 30-60 year age group in rural patients. Patients presenting with dyspepsia and gall-stones in rural setup should be directly treated surgically. As in our study at three month postoperatively 99% showed no any type of dyspeptic symptom.
Conclusions: Routine pre-operative upper GI endoscopy could not be recommended in all (for our study population as well) patients with gall-stone disease who present with dyspepsia as at the end of 3 months postoperatively 99% patients were symptom free in our study. If symptoms persists even after surgery now patient can be considered for upper G.I. endoscopy to rule out other causes of dyspepsia.

Keywords: Upper GI endoscopy, Gall-stone disease, Dyspepsia

INTRODUCTION

One of the most common problems encountered in surgery department is gallstone disease. Incidence of asymptomatic gallstones has been understood recently due to application of USG scanning of people for other or specific reasons. There is increase in the incidence of gall stones in rural population also over the past decade, the likely causes being the changes in lifestyle, environmental factors and easily available imaging facilities.[1] In Asia, the prevalence of gallstone disease is 5-10% of population especially among older individuals and females.[2] Symptom may be acute or chronic. Chronic symptoms are usually dyspeptic. Dyspeptic symptoms are also present in other upper gastrointestinal pathologies.

So it is necessary before definitive management to rule out whether the dyspeptic symptom is due to gall stone disease or due to any other pathology. All previous studies regarding correlation of upper GI endoscopic findings in patients of gall stones presenting with dyspepsia were performed in hospitals with urban background no study was performed in rural patients. As patients of rural background have different lifestyle and dietary habit. This study is based on patients of rural back ground with diagnosed cases of cholelithiasis who present with dyspepsia. Aim of study is to study the symptomatology of gall stone, prevalence of dyspeptic symptoms in patients, various common upper gastrointestinal pathologies seen on upper gastrointestinal endoscopy, find correlation of upper gastrointestinal endoscopic finding in gall stone disease patient with dyspepsia and to study the age and sex distribution of gall stone disease in rural population.

METHODS

The present study was carried out in department of surgery in UP rural Institute of medical science and research, Saifai, Etawah (U.P.) during January 2014 to August 2015. 100 patients admitted in IPD were taken for the study, considering the exclusion and inclusion criteria.

100 patients with ultrasonography proven gall stones presenting with dyspepsia, fulfilling the exclusion and inclusion criteria also willing to participate in study, were admitted in surgery department and taken for the study. Upper GI endoscopy was performed before 1 or 2 days of surgery. The patients were followed up postoperatively on 7th day, 30th day and 3 months to evaluate the presence of any preoperative symptoms. All the data were entered in MS EXCEL and analyzed using SPSS.[16] Chi square test was used to see the association between pain type, gender and endoscopic findings.

Inclusion criteria

1. Patients of rural background living in village presently.
2. Patients who have either single or multiple stones in gall bladder only, as shown in ultrasound.
3. Patients presenting with any one or more of the following symptoms.
    - Discomfort in upper abdomen
    - Nausea or vomiting
    - Early satiety
    - Bloating or fullness of abdomen

4. Patients who are willing to participate in the study and have given written consent.

Exclusion criteria

1. Patients less than 18 years of age.
2. Patients with acute abdomen and/or biliary colicky pain.
3. Patients with any chronic medical or surgical illness.
4. Patients not willing to participate or willing to sign the consent form for endoscopy.
5. Patients who have undergone cholecystectomy.
6. Patient with any other USG positive surgical illness.
7. Patients with complicated gallstone disease, choledocholithiasis, obstructive jaundice cholangitis, gallstone pancreatitis, cholecystoenteric fistula, gall bladder neoplasm, previous biliary/pancreatic surgery and previous gastric surgery.

Ethical clearance was obtained from the ethical committee of the institute. Written and informed consent was taken from the patients. Details of cases were recorded including history and clinical examination and investigations as per the proforma.

Charges of upper GI endoscopy was exempted for study patient by our head of department and director of institute.Upper GI endoscopy was performed after at least 6 hours fasting 24 to 48 hrs before cholecystectomy by consultants and findings were noted. Endoscope used was from Fujinon company model No. EG-590WR. Cholecystectomy was performed and patients were followed for the resolution of the symptoms. Patients were discharged as per condition of the patient minimum on second post-operative day maximum on 6th postoperative day. At the time of discharge all patient were given tablet paracetamol 1 gm as the analgesic on as per requirement basis and ranitidine 50 mg daily, to reduce the stress related increased secretion of acid, before breakfast for 5 days and antibiotic cefixime 200 mg as per condition of the wound. Follow up was planned at one week after discharge and one month after discharge and finally 3 month after discharge. Contact number was taken of all the patient in case they were unable to come to hospital due to any reason. All the data were entered in MS EXCEL analyzed using SPSS.[16]

RESULTS

Cholelithiasis with dyspepsia presentation in rural patients was found to be more common in female patients of the age group between 30-60 years. Forty patients (40%) had upper GI endoscopic findings and 60 patients (60%) had normal EGD study. Most common upper GI endoscopic finding was gastritis in 38% followed by oesophagitis 7% and gastric ulcer 6%. Duodinitis, duodenal ulcer, hiatus hernia were not present in our patients.

Age and sex distribution

In the present study age of patients of cholelithiasis presenting with dyspepsia ranged from 18 to 81 years with a mean age of 38.36±13.60 (SD) years. Majority were aged 31-60 years (54%). A total of 39 were aged <30 years and remaining 7 (7%) were aged >60 years.

Table 1: Table showing general profile of the patients.

Characteristic	Statistics
Mean age±SD (range) in years	38.36±13.60 (18-81)
<30	39 (39%)
31-60	54 (54%)
>60	7 (7%)
Gender	
Male	14 (14%)
Female	86 (86%)

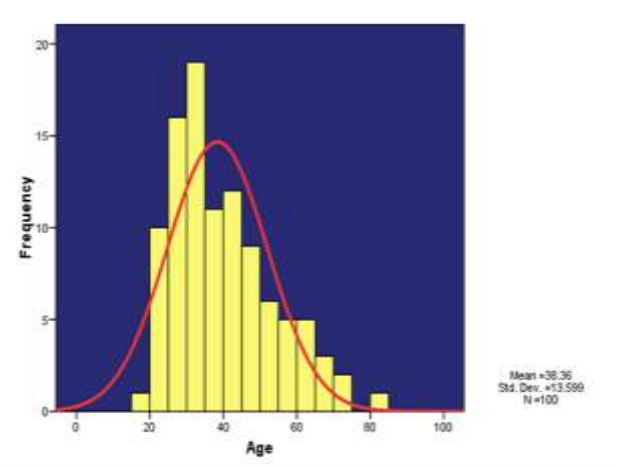

Figure 1: Showing bar diagram of age distribution. In this study majority of patients were females (86%). Male to female ratio was 1:6.14.

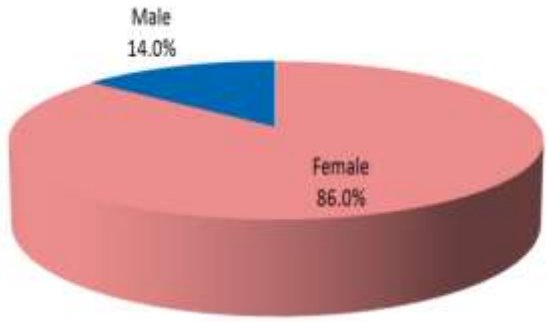

Figure 2: Showing pie diagram of sex distribution.

Symptomatology

Most common dyspeptic symptom in present study was epigastric pain (77%) followed by postprandial fullness (72%). Otherwise overall most common symptom was right hypochondriac pain (79%). Other dyspeptic symptoms were nausea (69%), early satiation (59%). A total of 31 (31%) patients complained of belching, 27% vomiting and 21% epigastric burning. None of the patients had fever.

Table 2: Distribution of patients according to presenting symptoms.

Symptom	No. of patients	%
Vomiting	27	27
Nausea	69	69
Belching	31	31
Epigastric burning	21	21
PP Fullness	72	72
Early satiation	59	59
Epigastric pain	77	77
Right Hypochondriac pain	79	79
Fever	0	0

Upper GI endoscopic findings

Majority of cases had a negative outcome for upper GI endoscopy. Endoscopic findings were positive in 40 had hiatus hernia, duodinitis, duodenal ulcer or other positive findings. Among patients with positive findings 6 had both oeophagitis as well as gastritis while 5 had both gastritis as well as gastric ulcer. Thus gastritis was most common independently as well as in combination with other findings.

Table 3: Endoscopic findings in patients.

Finding	No. of patients	Percentage
Negative	60	60.0
Positive	40	40.0
Hiatus hernia	0	0
Oesophagitis	7	7.0
Gastritis	27	27.0
Gastric ulcer	6	6.0
Duodinitis	0	0
Duodenal ulcer	0	0
Other findings	0	0

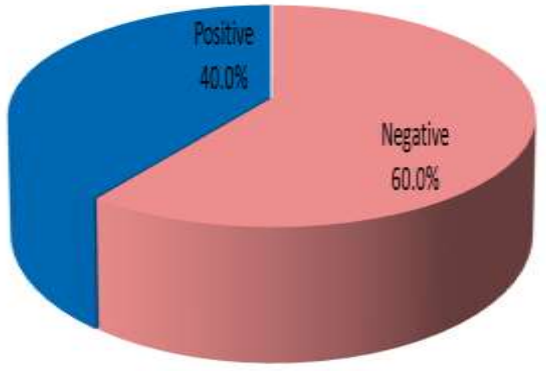

Figure 3: Pie diagram showing percentage of positive and negative endoscopic findings in patients.

Table 4: Upper GI pathologies present in endoscopically positive patients (40 patients).

Findings	No. of patients	% Patients
Hiatus hernia	0	0.0
Oesophagitis Gastritis	7 27	17.5
Gastric ulcer	6	15.5
Duodinitis	0	0.0
Duodenal ulcer	0	0.0
Other finding	0	0.0

Among endoscopically positive patients gastritis was most common (96.2%) finding. Followed by oesophagitis (17.5%), and gastric ulcer (15%). Among patients with positive findings 15 % had both oesophagitis as well as gastritis and 12.5% had gastric ulcer as well as gastritis.

Symptomatic response to cholecystectomy

A total of 78 patients had a positive response at 1 week, 92 (92%) had positive response at 1 month and 99 (99%) had a positive response at 3 months. Thus overall response rate was 99% at the end of 3 months. At all the time intervals, as compared to baseline, the change was significant statistically (p<0.001).

Table 5: Response to cholecystectomy at different time intervals.

Time interval	Positive		Negative		Statistical significance as compared to baseline	
	No.	%	No.	%	χ^2	P
1 week	78	78	22	22.0	127.87	<0.001
1 month	92	92	8	8	170.37	<0.001
3 months	99	99	1	1	196.04	<0.001

At one week, positive response was obtained in 55% of endoscopically positive and 93.3% of endoscopically negative patients. Thus showing that positive response rate was significantly higher in endoscopically negative as compared to endoscopically positive group (p<0.001).

At one month, positive response was obtained in 80% of endoscopically positive and 100% of endoscopically negative patients. Thus showing that positive response rate was significantly higher in endoscopically negative as compared to endoscopically positive group (p<0.001).

At 3 months, positive response was obtained in 97.5% of endoscopically positive and 100% of endoscopically negative patients. However, the difference between two groups was not significant statistically (p=0.218).

Table 6: Association between upper GI endoscopic findings and response to cholecystectomy.

Response to cholecystectomy	Endoscopic findings			
	Positive (n=40)		Negative (n=60)	
	No.	%	No.	%
Week 1				
Positive	22	55.0	56	93.3
Negative	18	45.0	4	6.7
χ^2=20.552; p<0.001 (S)				
1 month				
Positive	32	80.0	60	100
Negative	8	20.0	0	0
χ^2=13.043; p<0.001 (S)				
3 months				
Positive	39	97.5	60	100
Negative	1	2.5	0	0
χ^2=1.515; p=0.218 (NS)				

Table 7: Postoperative symptom profile at different follow-up periods.

Symptoms	No. of patients	Percentage
Week 1 (n=22)		
Epigastric discomfort	8	36.4
Epigastric pain	2	9.1
Right hypochondrium discomfort	1	4.5
Right hypochondrium pain	2	9.1
Upper abdominal discomfort	9	40.9
1 month (n=8)		
Epigastric discomfort	4	50.0
Right hypochondrium discomfort	3	33.3
Upper abdominal discomfort	1	16.7
3 months (n=1)		
Epigastric discomfort	1	100

At week 1, upper abdominal discomfort (UAD) was the most common symptom (40.9%) followed by epigastric discomfort (36.1%), epigastric pain (9.1%), right hypochondriac pain (9.1%) and right hypochondriac discomfort (4.5%) respectively.

At one month, epigastric discomfort was the most common symptom (50%) followed by right hypochondriac discomfort (50%) and upper abdominal discomfort (16.7%) respectively.

The single symptomatic patient at 3 months had epigastric discomfort.

Association NSAIDs and UGIE findings

Overall 45% patient had h/o over the counter use of NSAIDS. Significantly higher proportion of patients with positive endoscopic findings had a positive history of NSAIDS (67.5%) as compared to those having negative endoscopic findings (30%) ($p<0.001$) and this is statistically significant.

Table 8: Association between Upper GI endoscopic findings and H/o NSAIDs.

H/o NSAIDs	Endoscopic findings			
	Positive (n=40)		Negative (n=60)	
	No.	%	No.	%
Positive	27	67.5	18	30.0
Negative	13	32.5	42	70.0
χ^2=13.636; p<0.001 (S)				

Table 9: Association between upper GI endoscopic findings and H/o NSAIDs.

Endoscopic Findings	H/o NSAIDS					
	Positive (n=45)		Negative (n=55)		Statistical significance	
	No.	%	No.	%	χ^2	P
Oesophagitis	7	100	0	0	6.158	0.013
Gastritis	25	65.8	13	34.2	2.883	0.090
Gastric ulcer	5	83.3	1	16.7	2.070	0.150

Gastritis and gastric ulcer was most common endoscopic finding in patients with h/o over the counter use of NSAIDS. 65.8 gastritis patients had history of NSAIDS, 100% oesophagitis patients had h/o NSAIDS and 83.3 patients of gastric ulcer had h/o NSAIDS. Although only oesophagitis was found to be significantly associated with a significant history of NSAIDs.

DISCUSSION

Since both gallstones and dyspepsia are common in middle-ages, this finding is consistent with the general population (Table 10).

Sex distribution

The difference between male and female prevalence is more in the present study compared to Mozafar[6] series (Table 11).

Table 10: Comparison of age in different studies.

Age	Present Series (%)	Sasoda[3] Study (%)	Al-Obaidi[4] Study (%)	Gaharwar[5] Study (%)
<30 Years	39%	8%	5.88%	15.16%
31-60 Years	54%	60%	64.71%	81.81%
>60 Years	7%	32%	29.41%	3.03%

Table 11: Comparison of sex in different studies.

Sex	Present Study (%)	Mozafar[6] Study (%)	Ure[7] Study (%)	Gaharwar[5] Study (%)
Male	14%	25.87%	25%	91.66%
Female	86%	74.15%	75%	8.33%

Table 12: Comparison of dyspeptic symptom incidence.

Symptoms	Present study (%)	Berger[8] study (%)	Ure[7] study (%)	Rashid[9] study (%)
Epigastric pain	77.0%	89.04%	82.9%	75%
Epigastric burning	21.0%	50.68%	-	13.33%
Belching	31.0%	77.77%	-	-
Postprandial fullness	72.0%	63.01%	71.2%	16.67%
Nausea	69.0%	74.28%	59.5%	-
Vomiting	27.0%	54.92%	35.8%	5%

Table 13: Comparison of incidence of positive EGD findings.

EGD Findings	Present study %	Schwenk[10] study%	Diettrich[11] study%	Thybusch[12] study%
Positive Findings	40.0%	30.2%	31%	47.3%
No Findings	60.0%	69.8%	69%	52.7%

Dyspeptic symptom

In Berger[8] series, pain abdomen was the most common symptom accounting for 9% in congruence with the present study. But, belching (77.77%) and nausea (74.28%) constituted the next most common symptoms. In Ure[7] series and Rashid [9] series, pain abdomen was the most common symptom accounting for 82.9% and 75% respectively (Table 12).

Incidence of positive EGD findings

The incidence of positive findings in the present study is more or less equal to the other series (Table 13).

Upper GI endoscopic finding

The percentage of normal EGD was higher in the present study compared to Ibrahim series. Higher incidence of gastritis could be due to high incidence of Gutkha chewing and intake of NSAIDS for longer duration without any prescription or on prescription by unqualified health provider in our study group. Both the studies show that gastritis is the most common significant EGD finding (Table 14).

Table 14: Upper GI endoscopic findings.

UGIE findings	Present series (%)	Ibrahim[13] series (%)	Bartosz[14] series (%)
Normal	60%	43.5%	29.7%
Positive	40%		
Esophagitis	7.0%	19%	8%
Hiatal hernia	0.0%	9.5%	16.1%
Gastritis	27.0%	35.5%	43.6%
Duodinitis	0.0%	6.5%	17.3%
Duodenal ulcer	0.0%	3.5%	8.3%
Gastric ulcer	6.0%	-	-
Others	0.0%	10%	

Association between upper G.I. endoscopic findings and H/O NSAIDs

NSAID-associated dyspepsia occurs in up to 50% of patients who use these drugs no relationship, however, between NSAID-associated dyspeptic symptoms and the presence of erosions or ulceration established;

- Up to 100% of patients taking nonselective NSAIDs-sub epithelial hemorrhage
- 50% have erosions (small, shallow breaks in the GI mucosa)
- 20% have ulceration (injury extending through the muscular mucosa)

Using the strict definition, based solely on epigastric pain-related symptoms, NSAIDs increased the risk of dyspepsia by 36%.[15]

NSAIDs-induced dyspepsia occurs in 10 to 30% of patients treated with NSAIDs, leading to discontinuation of treatment in 5 to 15%. Symptoms of NSAIDs-induced dyspepsia are poorly correlated with gastroduodenal mucosal damage. Therefore, upper gastrointestinal endoscopy should be performed only if symptom relief is not achieved with the first line empirical treatment and/or if symptoms suggestive of complications, such as bleeding, develop.[16]

Primary care patients with an average risk profile frequently develop dyspeptic symptoms requiring treatment, and ulcers while on NSAIDS.[17] Rural patients usually take, over the counter NSAIDS. Superficial gastritis and gastric ulcers is most common finding in NSAIDS induced dyspepsia.

Table 15: Association between upper GI endoscopic findings and H/O NSAIDs.

H/O NSAIDs	Endoscopic findings			
	Positive (N= 40)		Negative (N=60)	
Positive	27	67.5%	18	30%
Negative	13	32.5%	42	70%

Symptomatic response to cholecystectomy

A study in Pakistan among 197 patient revealed a complete relief of pain, vomiting and flatulence post surgically. However, food intolerance was relieved in only 92.5%.[18] A Scottish study by Luman et al showed out of 97 patients with cholelithiasis, nausea was relieved in 94% and food intolerance in 80%.[19]

CONCLUSION

In our study, it was found that, dyspepsia with gall-stones was commonly seen in females in 30-60 year age group in rural patients. The most common dyspeptic symptom was epigastric pain in rural patients followed by, post prandial fullness, nausea, early satiation, belching, vomiting and epigastric burning in decreasing order. In my study NSAIDS induced dyspepsia also seem to be an important cause of dyspepsia due to over the counter use of NSAIDS. NSAIDS induced dyspepsia should also be kept in mind in patients of gall stone presenting with dyspepsia. On upper GI endoscopy, the most common finding was gastritis, oesophagitis and gastric ulcer in decreasing order. There was no hiatus hernia, duodinitis or duodenal ulcer in our study. Patients presenting with dyspepsia and gall-stones in rural setup should be directly treated surgically. As in our study at three month postoperatively 99% showed no any type of dyspeptic symptom. Routine pre-operative upper GI endoscopy cannot be recommended in all (for our study population

as well) patients with gall-stone disease who present with dyspepsia as at the end of 3 months postoperatively 99% patients were symptom free in our study and also to avoid unnecessary expenditure as for rural patients it is not economical because availability of endoscopy and endoscopist is not an easy affair in rural setups. Also after operating patients were found to rid of at least one important cause of dyspepsia. And even if symptoms persist even after surgery now patient can be considered for upper GI endoscopy to rule out other causes of dyspepsia.

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