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Original Article

Role of Upper Gastrointestinal Endoscopy in Patients of Gallstones with Dyspepsia

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Abstract

Aims and Objectives: The study has examined the use of upper gastrointestinal endoscopy (UGE) as an investigative tool in cholelithiasis patients presenting with chronic dyspepsia.

Materials and Methods: This was a prospective observational study of patients presenting with gallstones with dyspepsia at BLDE (DU)'s Shri B.M. Patil Medical College Hospital and Research Center, Vijayapura. UGE was performed in patients of cholelithiasis with dyspepsia. Patients with significant endoscopic finding were treated accordingly for the same with cholecystectomy.

Results: 80 patients were included in the study with a mean age of 41.50 years with female predominance. Pain in the abdomen with an epigastric burning sensation was the most common presenting symptom. On UGE, 30% of patients had no significant pathology; whereas 27% of patients had gastritis. Most patients with normal UGE and cholecystectomy had relief of symptoms within 2–3 weeks, compared to those with abnormal UGE who were treated with a course of proton-pump inhibitors; relief of symptoms among all patients was seen after 8 weeks.

Conclusion: Clinical presentation of cholelithiasis and other upper gastrointestinal diseases resembles each other. It is difficult to discriminate between upper gastrointestinal symptoms due to cholelithiasis or any other upper gastrointestinal conditions. It is beneficial to do UGE in patients of cholelithiasis with dyspeptic symptoms, and concurrent medical management would further reduce post cholecystectomy symptoms.

Key words: Cholelithiasis, Dyspepsia, Endoscopy

INTRODUCTION

Gallstone disease remains to be one of the most common medical problems leading to surgical intervention. Gallstones are the most common biliary pathology. It is estimated that gallstones affect 5–10% of the population in Asian countries.[1] Studies examining the relief of symptoms after cholecystectomy suggest that approximately one-quarter of patients undergoing cholecystectomy will not experience relief of symptoms and that dyspeptic symptoms are least likely to be cured by cholecystectomy.[1] The symptoms of gallstones are non-specific and may be acute or chronic. Chronic symptoms are generally dyspeptic and are classically referred to as flatulent dyspepsia. In patients with these chronic symptoms, the demonstration of gallstones does not exclude other disorders which may be responsible for these symptoms. It is commonly accepted that the removal of the gallbladder is the best treatment for symptomatic gallstone disease. However, less focus has been given to the patient selection and typical or common symptoms of this disease to understand prevailing symptoms after surgery. This study focuses on the pre-operative upper gastrointestinal endoscopy (UGE) as an investigation modality to diagnose other associated disorders of the upper gastrointestinal (UGI) tract in

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patients with ultrasound-proven gallstones presenting with dyspeptic symptoms.

MATERIALS AND METHODS

This was a prospective observational study of patients presenting with gallstones with dyspepsia at BLDE (D.U)'s Shri B.M. Patil Medical College Hospital and Research Center, Vijayapura. The study was conducted from October 2019 to July 2021 (duration: 20 months). Ethical clearance of the study was obtained from the Institutional Ethical Committee. After obtaining informed consent from the patients, a pretested structural pro forma was used to collect relevant information for each patient selected, which includes detailed history and examination.

Cases were selected as per the inclusion and exclusion criteria. UGI endoscopy was performed for all the patients with dyspeptic symptoms. Cholecystectomy was done if indicated, and those patients with significant endoscopic finding were treated accordingly for the same. Patients were followed up after the procedure for up to 2 months to look for the relief of symptoms.

Aim

The aim of this study was to analyze the use of UGE as a pre-operative investigative tool in gallstone disease patients presenting with chronic dyspepsia.

Objective of the Study

The objective of the study was to look for other causes of dyspepsia in patients with gallstone disease, such as:

- Esophagitis
- Hiatus hernia
- Gastritis
- Duodenitis
- Malignancy.

Inclusion Criteria

Patients with gallbladder stones as demonstrated on ultrasound were with any one of the following dyspeptic symptoms:

- Pain or discomfort in the upper abdomen
- Nausea or vomiting
- Early satiety
- Bloating or fullness of the abdomen
- Belching.

Exclusion Criteria

Patients with acute cholecystitis with or without complications, who were taken for emergency surgery, were excluded.

Sampling

- With an anticipated proportion of endoscopic findings among 72.8% of cholelithiasis patients,[1] the minimum sample size was 76 patients with a 5% level of significance and 10% absolute error.

Statistical Analysis

- Data were represented using mean±SD, percentages, and diagrams
- Association between variables was found using the Chi-square test/Fisher's exact test.

RESULTS

In our study, 80 patients presented with dyspeptic symptoms with cholelithiasis. Most (51.2%) of the patients in our study population were in the age group of the 5th decade with a mean age of 41.50 ± 7.62 years [Table 1]. There was a female (67.5%) preponderance. Pain in the abdomen with epigastric burning sensation was the most common (35%) presenting symptom. On UGE, 30% of patients had no significant pathology; whereas 27% of patients had features of gastritis [Table 2]. All the patients with normal UGE findings (30%) were treated with laparoscopic cholecystectomy alone; whereas 61.3% of patients who had significant endoscopic finding were treated with cholecystectomy with a course of proton-pump inhibitor (PPI) for 2 weeks–2 months and 8.8% of patients who were not willing for cholecystectomy or who were not fit for the procedure were treated with a course of PPI alone [Table 3]. Among the patients who had normal UGE and underwent cholecystectomy, 83.4% of patients had relief of symptoms within 2 weeks; the rest

Table 1: Age distribution

Age (years)	No. of patients	Percentage
<30	5	6.3
30–39	24	30.0
40–49	41	51.2
50+	10	12.5
Total	80	100.0

Table 2: Distribution of patients by UGI endoscopic findings

UGI endoscopy findings	Frequency	Percentage
Esophagitis	11	13.8
Esophagitis+Gastritis	17	21.3
Esophagitis+Hiatus hernia	6	7.5
Gastritis	22	27.5
Normal	24	30.0
Total	80	100.0

UGI: Upper gastrointestinal

16.6% of patients had relief of symptoms in 2–3 weeks. In patients who had abnormal UGE and were treated with cholecystectomy with a course of PPIs, 18.4% of patients experienced relief of symptoms within 3 weeks; whereas complete relief of symptoms among all patients was seen after 8 weeks [Table 4].

DISCUSSION

Cholecystectomy is considered the best treatment for symptomatic gallstone disease and can be curative only in whom the symptoms are due to gallstones and not due to other upper GI pathologies. Symptomatology of UGI diseases can overlap; hence, UGE is important to identify the disease of the esophagus, stomach, and duodenum with direct visualization of the ampulla of Vater.

Incidental gallstones found in the investigation of GI symptoms may be falsely implicated to explain the pathology arising outside the biliary tree. The main focus of the surgeon revolves around treating the gallstones, and further investigations to rule out other pathologies which produce similar symptoms are not considered, and surgery is often performed inappropriately.[1]

Persistent post cholecystectomy pain, also termed "post cholecystectomy syndrome," comprises a group of abdominal symptoms that recur or persist after cholecystectomy and may include biliary and extra-biliary causes, unrelated to cholecystectomy.[1]

In a study conducted by Gupta *et al.*,[2] the mean age of presentation was 38.36 ± 13.60, which is similar to our study, while a maximum number of patients (54%) were in the age group of 31–60 years in the said study.

The sex ratio of the patients included in the study showed a female preponderance with 67.5% of patients included in the study being females. Other similar studies also noted a high number of female patients included in the study with 74.15% in Mozafar *et al.*[3] and 86% in Gupta *et al.*[2]

In our study, a maximum number of patients presented with complaints of pain in the abdomen with epigastric burning sensation among 35% of patients. Another common presenting symptom was pain in the abdomen, which was similar to the study conducted by Narayan *et al.*,[1] where a maximum number (63.7%) of patients presented with complaints of epigastric pain. In a study conducted by Gupta *et al.*,[2] 77% of patients presented with symptom of epigastric burning sensation.

In this study, 30% of patients who presented with cholelithiasis with dyspepsia had no significant pathology on UGE; whereas gastritis was seen among 27.5% of patients. In a study conducted by Narayan *et al.*,[1] had 25% of patients with gastritis, and 27.2 % had normal UGE finding; these results were similar to our results.

Similarly, in a study conducted by Kolla *et al.*,[4] 28.8% of patients had normal UGE finding and 40.67% of patients had features of gastritis.

A statistically significant association was noted between the treatment given and the relief of symptoms ($P < 0.0001$) in our study.

Similar results were observed in the study conducted by Kolla *et al.*;[4] in this study; all 34 patients who had normal UGE and were treated with cholecystectomy alone showed complete relief of symptoms within 1 week of the procedure; whereas those who had significant UGE finding (84 patients) and underwent cholecystectomy with the course of PPIs treatment had gradual relief of symptoms over 6 months.

Table 3: Distribution of patients by different treatments received by the patients

Treatment received by the patients	Frequency	Percentage
Cholecystectomy	24	30.0
Cholecystectomy+PPI	49	61.3
PPI alone	7	8.8
Total	80	100.0

PPI: Proton-pump inhibitor

Table 4: Comparison of treatment received by the patients with relief of symptoms in weeks

Treatment	Follow-up - symptoms relieved after (weeks)					Chi-square test	*P*-value
	<2	2–3	4–5	6+	Total		
Cholecystectomy	20	4	0	0	24	68.442	0.0001*
%	83.4	16.6	0.0	0.0	100.0		
Cholecystectomy+PPI	0	9	11	29	49		
%	0.0	18.4	22.4	59.2	100		
PPIs alone	0	0	2	5	7		
%	0.0	0.0	28.6	71.4	100		
Total	20	13	13	34	80		

*Statistically significant, PPI: Proton-pump inhibitor

This study proves that concurrent medical management of the upper GI pathologies with cholecystectomy reduces the chances of post cholecystectomy syndrome.

A study conducted by Rashid[5] shows the benefit of UGE for patients undergoing laparoscopic cholecystectomy. In this study, one group of patients underwent UGE before surgery and treatment started according to the endoscopy findings. For the other group of patients, endoscopy was not done. The result showed persistence of symptoms in 32.7% of patients in whom UGE was not done, and only 3.3% had persistence of pain in patients who had undergone UGE and were treated accordingly. Similarly, in our study, for all scoped and treated patients, pain resolved almost equally to patients with normal endoscopy.

The study conducted by Diettrich *et al*.[6] shows that 31% of patients had abnormal UGE findings resulting in a change in plan in therapy. Thybusch *et al*.[7] show therapeutic implications of routine UGE before cholecystectomy. In their study, 8.3% of patients' UGE findings influenced management, and surgery was postponed awaiting medical management. Two patients underwent gastrectomy for gastric cancer.[7,8] In our study, although preoperative endoscopy did not change the plan of treatment, it helped for concurrent treatment of other UGI diseases. There was no malignancy detected in our UGE.

The disadvantages with routine UGE for all patients are the cost of the procedure, patient discomfort, and complications due to endoscopy. However, the advantage of this study is by doing routine UGE, we can rule out other upper GI diseases, including malignancy, for all patients.[9-11]

One-third of patients in our study showed normal endoscopy; hence, we cannot also completely recommend UGE for all cholelithiasis patients with symptoms. However, we may recommend UGE for patients with an atypical presentation to rule out other causes of pain to prevent persistent symptoms even after surgery.[12-14]

The main aim of the study was to prove even in confirmed symptomatic cholelithiasis patients, there may be some associated UGI pathologies such as gastritis and reflex esophagitis which need simultaneous treatment to prevent post-surgery symptoms, and both UGI pathology and gallbladder pathology can coexist and one may be predominant to the present symptoms, but we have to treat both if present together.

CONCLUSION

Clinical presentation of cholelithiasis and other upper gastrointestinal diseases resembles each other. It is difficult to discriminate between upper gastrointestinal symptoms due to cholelithiasis or any other upper gastrointestinal conditions. It is beneficial to do UGE in patients of cholelithiasis with dyspeptic symptoms, and concurrent medical management would further reduce post cholecystectomy symptoms.

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