



A STUDY ON UPPER GASTROINTESTINAL ENDOSCOPY FINDINGS IN SYMPTOMATIC GALLSTONE DISEASE

General Surgery

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ABSTRACT

Background: The incidence of gallstone disease has risen significantly, largely due to changes in lifestyle and improved diagnostic imaging techniques. Patients with symptomatic gallstones often present with chronic dyspeptic symptoms, which may persist even after cholecystectomy, indicating possible coexisting upper gastrointestinal (GI) pathologies. **Aim:** To determine the significant findings from upper GI endoscopy in patients with ultrasound-confirmed gallstone disease presenting with chronic dyspeptic symptoms. **Methods:** A prospective observational study was conducted in the Department of General Surgery at Akash Institute of Medical Sciences between April 2023 and July 2024. Fifty-five patients with symptomatic gallstone disease underwent preoperative upper GI endoscopy. Data were analyzed to assess the prevalence and types of upper GI pathologies. **Results:** Of the 55 patients, 72.7% were female, and 52.7% were aged between 21-40 years. Endoscopic findings included gastritis (48.2%), duodenitis (25.9%), reflux esophagitis (11.6%), and hiatus hernia (9.8%). Normal endoscopy findings were noted in 26.8% of cases. **Conclusion:** Preoperative upper GI endoscopy reveals significant upper gastrointestinal lesions in patients with symptomatic gallstone disease. Routine endoscopy can identify coexisting conditions, potentially refining surgical decision-making and improving patient outcomes.

KEYWORDS

Gallstone Disease, Upper GI Endoscopy, Chronic Dyspepsia, Gastritis, Cholelithiasis, Preoperative Assessment

INTRODUCTION

Gallstone disease continues to be a frequent indication for surgical intervention across the world [1]. Its incidence has increased notably over the past decade, fueled by the rising prevalence of obesity and the use of advanced imaging modalities that enhance detection of asymptomatic gallstones [1][2]. Despite extensive research, the clinical presentation of gallbladder stone disease remains multifaceted and sometimes poorly defined [1].

Evidence suggests that approximately one-quarter to one-third of patients who undergo surgery for symptomatic gallstones may not achieve complete symptom relief, especially those with dyspeptic complaints [3][4]. Symptoms that persist or recur after cholecystectomy are commonly grouped under Post-Cholecystectomy Syndrome (PCS), encompassing gastrointestinal symptoms such as abdominal pain, bloating, nausea, dyspepsia, and food intolerance [3][4]. Reflux esophagitis, bile gastritis, hiatus hernia, gastric erosions, and duodenal ulcers are commonly identified underlying causes [3].

Gallstones represent the most prevalent biliary disorder, affecting approximately 5-10% of individuals in Asia and up to 16.6% in Western countries [5][6]. According to NHANES III, gallstone disease affects nearly 6.3 million men and 14.2 million women in the United States [6]. Silent gallstones are frequently discovered incidentally during abdominal imaging performed for other reasons [7]. When symptomatic, gallstones typically produce right upper quadrant or epigastric pain radiating to the back or scapular region, particularly after fatty meals [5].

Importantly, gallstones do not necessarily exclude the presence of other gastrointestinal conditions capable of producing similar symptoms [7][8]. Thus, some patients may undergo unwarranted cholecystectomy when gallstones are incidental rather than causative [8][9][10]. A significant number of patients with non-specific upper abdominal symptoms and incidental gallstones may receive inappropriate surgical treatment [9][10].

Upper gastrointestinal endoscopy (UGE) serves as an accessible and valuable investigation to detect associated gastrointestinal conditions in patients presenting with dyspeptic symptoms [11]. Routine use of UGE in gallstone patients with chronic symptoms could minimize unnecessary surgeries by identifying alternate pathologies [11].

Previous studies report that nearly one-third of patients continue to experience abdominal symptoms even after undergoing laparoscopic cholecystectomy, highlighting the need for careful preoperative evaluation through EGD [12].

Laparoscopic cholecystectomy remains the gold standard for treating symptomatic gallstone disease [13]. Nonetheless, enhancing patient selection through clinical judgment and supplementary investigations like UGE can improve surgical outcomes and overall patient satisfaction [8][9][12][14].

This study aims to evaluate the upper gastrointestinal endoscopic findings in patients presenting with symptomatic gallstone disease and chronic dyspeptic symptoms, emphasizing the significance of thorough preoperative assessment.

Aims And Objectives

- To determine significant findings from upper gastrointestinal endoscopy in patients with ultrasound-confirmed gallstone disease presenting with chronic dyspeptic symptoms.
- To identify the coexistence of gallstones with different upper GI pathologies.
- To study the age and sex distribution in symptomatic gallstone patients.
- To emphasize the importance of routine upper GI endoscopy as part of the preoperative evaluation.

MATERIALS AND METHODS

Study Design: Prospective observational study

Study Setting: Department of General Surgery, Akash Institute of Medical Sciences

Study Period: April 2023 to July 2024

Sample Size: 55 patients

Inclusion Criteria: Patients over 18 years with ultrasound-proven gallstones and chronic dyspeptic symptoms

Exclusion Criteria: Patients aged <18 years, acute abdomen, or unfit for endoscopy

Methodology: Patients underwent upper GI endoscopy using a 120 cm forward-viewing endoscope. Findings were recorded and analyzed.

RESULTS

Table.1. Distribution Of Study Population According To Age Group

Age	Number of Cases (n)	Percentage (%)
18-20 yrs	1	1.8%
21-40 yrs	29	52.7%
41-60 yrs	18	32.7%
>60 yrs	7	12.7%
Total	55	100%

Out of 55 patients, majority of them belonged to the age group of 21-40 yrs (n=29, 52.7%), followed by 41-60 yrs (n=18, 32.7%), >60 yrs (n=7,12.7%) and 18-20 yrs (n=1,1.8%)

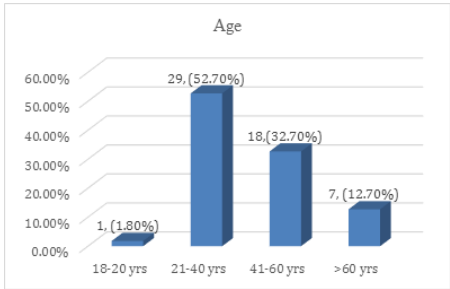


Figure 1. Distribution of study population according to Age

Table 2. Distribution of study population according to Gender

Gender	Number of Cases (n)	Percentage (%)
Female	40	72.7%
Male	15	27.2%
Total	55	100%

Out of 55 patients, majority of the patients were females (n=40, 72.7%) and remaining 15 patients (27.2%) were males.

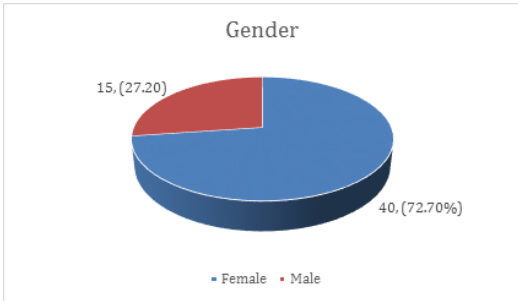


Figure 2. Distribution of study population according to Gender

Table 3. Distribution Of Study Population According To Endoscopic Findings

	Endoscopic findings	Number of cases (n=55)	Percentage (%)
Normal study	Yes	15	26.8%
	No	40	73.2%
Gastritis	Yes	27	48.2%
	No	28	51.8%
Gastric ulcer	Yes	1	1.8%
	No	54	98.2%
Duodenitis	Yes	14	25.8%
	No	41	74.2%
Duodenal ulcer	Yes	1	1.8%
	No	54	98.2%
Reflux esophagitis	Yes	6	11.6%
	No	49	88.4%
Hiatus hernia	Yes	5	9.8%
	No	50	90.2%
Total		55	100%

Note: Percentages exceed 100% because some patients had multiple endoscopic findings.

Out of 55 study participants, majority of the patients had gastritis (n=27, 48.2%) followed by normal study (n=15, 26.8%), duodenitis (n=14, 25.8%), reflux esophagitis (n=6, 11.6%), hiatus hernia (n=5, 9.8%), gastric ulcer (n=1, 1.8%) and duodenal ulcer (n=1, 1.8%)

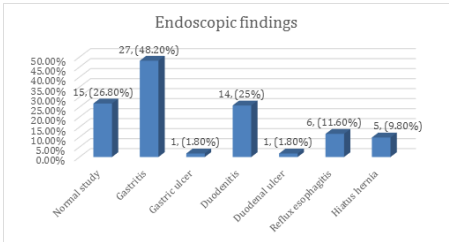


Figure 3. Distribution of study population according to Endoscopic findings. Multiple findings were observed in some patients; hence, percentages may exceed 100%.

DISCUSSION

This study evaluated the prevalence of upper gastrointestinal (GI) lesions in patients presenting with symptomatic gallstone disease. Among the 55 patients enrolled, the majority were young to middle-aged adults of 21–40 yrs age group (n=29, 52.7%) and predominantly females (n=40, 72.7%). These demographic findings align with global epidemiological patterns, where gallstones show a female predominance attributed to hormonal factors such as estrogen exposure, pregnancy, and oral contraceptive use [5].

Upper GI endoscopic evaluation revealed that 73.2% of patients had significant endoscopic abnormalities, supporting the notion that many patients with gallstones also harbor concurrent upper GI pathologies. The most common finding was gastritis (n=27, 48.2%), which corroborates prior studies identifying gastritis as a frequent comorbidity in gallstone patients [1,3]. Chronic gastritis may exacerbate dyspeptic symptoms and contribute to the persistence of upper abdominal discomfort even after cholecystectomy.

Duodenitis was observed in 25.8% (n=14) of patients, reflecting mucosal irritation possibly secondary to bile reflux or Helicobacter pylori infection. Reflux esophagitis (n=6, 11.6%) and hiatus hernia (n=5, 9.8%) were also notable findings, indicating that gastroesophageal reflux disease (GERD) may coexist with gallstone-related symptoms, potentially complicating the clinical picture. A small percentage of patients had gastric ulcer (n=1, 1.8%) and duodenal ulcer (n=1, 1.8%), both conditions capable of mimicking biliary colic or dyspeptic symptoms [4,11].

Importantly, 26.8% (n=15) of patients had normal endoscopic findings, emphasizing that gallstones could be the primary cause of symptoms in a significant proportion, but it also highlights the necessity for clinical judgment in interpreting imaging findings in symptomatic patients.

Our findings support the routine use of preoperative upper GI endoscopy in gallstone patients with chronic dyspeptic symptoms. Identifying concurrent upper GI disorders can guide appropriate medical therapy alongside or instead of surgery, minimizing the risk of persistent symptoms post-cholecystectomy (Post-Cholecystectomy Syndrome). Previous studies have similarly emphasized that undiagnosed upper GI pathologies can contribute to unsatisfactory outcomes if not addressed before surgery [3,4].

Furthermore, recognizing and treating conditions like reflux esophagitis or gastritis preoperatively can improve overall patient satisfaction, reduce postoperative morbidity, and prevent unnecessary surgeries in cases where gallstones are incidental rather than causative [8,9].

In view of the high prevalence of coexisting lesions found in our study, we suggest integrating routine upper GI endoscopy into the preoperative assessment protocol for symptomatic gallstone disease, especially in patients presenting with chronic or atypical symptoms.

Limitations

- 1) Less sample size
- 2) Single center study

CONCLUSION

Preoperative upper gastrointestinal endoscopy plays a crucial role in evaluating patients with symptomatic gallstone disease. Routine use of endoscopy can reveal coexisting conditions that contribute to symptoms and guide optimal management strategies.

REFERENCES

1. Mullaiventhan M, Vallipriya V, Raja R, Vasantha Kumari. Study on Upper Gastrointestinal Endoscopy Findings in Symptomatic Gallstone Patients: A Descriptive Study.
2. Shaffer EA. Gallstone disease: Epidemiology of gallbladder stone disease. *Best Pract Res Clin Gastroenterol.* 2006;20(6):981-996.
3. Lamberts MP, et al. Value of EGD in patients referred for cholecystectomy: a systematic review and meta-analysis. *Gastrointest Endosc.* 2015;82(1):24-31.
4. Karmacharya A, Malla BR, Joshi HN, Gurung RB, Rajbhandari M. The predictive value of pre-operative symptoms including upper gastrointestinal endoscopy before laparoscopic cholecystectomy. *Kathmandu Univ Med J.* 2013;11(44):300-4.
5. Shaffer EA. Gallstone disease: symptomatology, pathophysiology, and management. *J Gastroenterol Hepatol.* 2005;20(9):1353-1361.
6. National Health and Nutrition Examination Survey III (NHANES III).
7. Gurusamy KS, Davidson BR. Gallstones. *BMJ Clin Evid.* 2014;2014:0416.
8. Halldestam I, Enell EL, Kullman E, Borch K. Development of symptoms and complications in individuals with asymptomatic gallstones. *Br J Surg.* 2004;91(6):734-738.
9. Kiewiet JJ, Durian MF, Schoots IG, et al. Diagnostic accuracy of imaging modalities in gallstone disease. *Scand J Gastroenterol.* 2017;52(8):825-831.
10. Shea JA, Berlin JA, Bachwich DR, et al. Indications for and outcomes of cholecystectomy: pre- and post-laparoscopic eras. *Ann Surg.* 1998;227(3):343-350.
11. Khedkar I, Prasad D, Datta A. Diagnostic value of upper GI endoscopy prior to elective laparoscopic cholecystectomy. *Int Surg J.* 2017;5(1):105-109.
12. Lamberts MP, Broeders IA, van Santvoort HC, et al. Persistent abdominal complaints after laparoscopic cholecystectomy: a diagnostic evaluation study. *Ann Surg.* 2013;257(4):640-645.
13. Strasberg SM. Clinical practice. Acute calculous cholecystitis. *N Engl J Med.* 2008;358(26):2804-2811.
14. McSherry CK, et al. Natural history of diagnosed gallstone disease. *Ann Surg.* 1985;202(1):59-63.