



ROLE OF UPPER GASTROINTESTINAL ENDOSCOPY (UGE) IN ALL ULTRASONOGRAPHICALLY PROVEN CHOLELITHIASIS PATIENTS UNDERGOING ELECTIVE LAPAROSCOPIC CHOLECYSTECTOMY AND EVALUATING THE POST-OPERATIVE SYMPTOMATIC RELIEF.

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ABSTRACT

Upper abdominal pain can be secondary to either cholelithiasis or gastro duodenal diseases. Because of the ease of access to sonography, the diagnosis of cholelithiasis has increased. The sonographic finding of cholelithiasis may be incidental and acid peptic disease may be the true cause of pain. Because of this overlap in the symptomology of biliary and gastroduodenal pathologies there are a percentage of patients with no symptomatic relief. Thus, this study aims at evaluating the efficacy of upper gastrointestinal endoscopy (UGE) in all USG proven cholelithiasis patients undergoing elective laparoscopic cholecystectomy and evaluating the post-operative symptomatic relief. **Objective-** To evaluate the value of UGI endoscopy as a routine investigative tool in patients undergoing elective laparoscopic cholecystectomy and to find post-operative symptomatic relief in the groups. **Methodology** -This prospective observational study was done in 105 patients of age group 18-80 years and of both genders diagnosed with cholelithiasis on USG , pre operatively endoscopy was done for all the patients. A two week and two months post-operative follow up was taken for all the patients. SPSS version 25 was used for statistical analysis. Results - On postoperative day 14, among 105 study subjects, 77 patients whose symptoms were relieved out of which 23 had normal endoscopy and 54 had pathology on endoscopy. While the 28 patients with persistent symptoms all had of pathology on endoscopy. 2 months postoperatively, among 105 study patients, 85 patients whose symptoms were relieved out of which 23 patients were those with normal endoscopy, 62 patients had presence of pathology on endoscopy. While 20 patients with persistence of symptoms were those who had of pathology on endoscopy. Conclusion-To manage patients preoperatively, improve postoperative outcomes and patient counseling, it is important to do preoperative endoscopy in patients undergoing elective laparoscopic cholecystectomy.

KEYWORDS : gall bladder stone disease, upper gastrointestinal endoscopy, cholecystectomy, acid peptic disease.

INTRODUCTION

The gall stone disease has been one of the most common conditions in surgical practice. 80% of patients with cholelithiasis are asymptomatic⁽¹⁻³⁾. Ease of access to ultrasound abdomen has helped to diagnose asymptomatic gallstone disease early⁽⁴⁻⁵⁾. Symptoms of gall stone diseases include abdominal pain, abdominal discomfort, dyspepsia, nausea, vomiting, belching, heart burn, food intolerance, flatulence, and loss of appetite. Upper abdominal symptoms are common in both gallstone disease and inflammatory disorders of gastroduodenum⁽⁶⁾ as both of these arise in foregut during embryological development. Differentiating these conditions are important because although both present with similar symptoms but their treatment modalities differ. Underlying correlation between cholelithiasis and upper gastrointestinal symptoms has not been established yet⁽⁷⁾. the subgroup of patients, who presented with cholelithiasis and non specific upper abdominal symptoms, have their post operative symptoms attributed to post cholecystectomy syndrome. Post cholecystectomy syndrome (PCS)⁽⁸⁻¹⁰⁾ consists of group of symptoms that either persist or recur or develop after cholecystectomy and includes a number of disorders, both biliary and non-biliary in origin, which includes esophagitis, gastritis, peptic ulcer disease, hiatus hernia and maybe unrelated to cholecystectomy. It is prudent that while evaluating patients having abdominal pain, identifying whether cholelithiasis is the source of the symptoms or an incidental finding. The persistence of abdominal symptoms after laparoscopic cholecystectomy due to inadequate preoperative evaluation of other conditions causes the same symptoms to persist after surgery. So we aim to find contribution of UGI endoscopy as routine preoperative investigation and the importance of UGI endoscopy to evaluate the association between gastrointestinal symptoms with gallstones and reduce the prevalence of post cholecystectomy pain and other symptoms.

MATERIALS AND METHODS

This prospective study was carried out in department of General Surgery at Tertiary Care Hospital over 24 months. All

patients in the age group 18-80 years with USG proven diagnosis of cholelithiasis were included. Patients who were are willing to participate in the study and willing to undergo upper gastrointestinal endoscopy and cholecystectomy. Patients with other hepatobiliary disease, obstructive esophageal pathology, acute cholecystitis , patient who refused to participate and lost to follow up were excluded. Detailed information regarding the patients demographics and blood investigation (CBC ,LFT), USG findings ,endoscopy findings, histopathology reports and post operative symptomatic relief was noted in all patients.

RESULTS

Table 1 - Sex profile in study subjects (N= 105)

Sex	Female	Frequency	Pathology on endoscopy		Total
			Absent	Present	
		19	56		75
		82.6%	68.3%		71.4%
	Male	4	26		30
		17.4%	31.7%		28.6%
Total		23	82		105
		100.0%	100.0%		100.0%

Table 1 summarizes the sex profile of 105 study subjects in relation to presence of pathology on endoscopy. Among females, 68.3% have presence of pathology on endoscopy, while 82.6% do not. For males, 31.7% have presence of pathology on endoscopy, and 17.4% do not. Overall, females represent 71.4% of the total participants, 55 and males 28.6%.

Table 2 Endoscopy findings in study subjects (N= 105)

Endoscopy	Frequency	Percent
Antral Gastritis	19	18.1
Gastritis	1	1.0
Growth Over Lesser Curvature Of Stomach	1	1.0

Lax Hiatus	8	7.6
Mild Gastritis	25	23.8
Normal	23	21.9
Pangastritis	27	25.7
Severe Erosive Gastritis, Lax Hiatus,	1	1.0
No Varices		
Total	105	100.0

Table 2 presents endoscopy findings like pangastritis (25.7%), normal findings in 21.9%.

Table 3 - Post-operative day 14 symptom relief and no relief in study subjects (N = 105)

		Pathology on endoscopy	Total		
			Absent	Present	
Symptoms relief on post-operative day 14	Symptomatic relief after surgery	Frequency	23	54	77
		Percent	100.0%	65.9%	73.3%
	No symptomatic relief after surgery	Frequency	0	28	28
		Percent	0.0%	34.1%	26.7%
Total		Frequency	23	82	105
		Percent	100.0%	100.0%	100.0%

$\chi^2 = 10.710$ $p < 0.001$

Table 3 shows symptoms relief on postoperative day 14 among 105 study subjects. Of the 77 subjects whose symptoms were relieved, 23 were those with normal endoscopy. In contrast, 28 subjects still had symptoms; all were those with pathology one endoscopy. The difference is statistically significant ($\chi^2 = 10.710$, $p < 0.001$), indicating that symptoms are more likely to persist in patients with presence of pathology on endoscopy.

Table 4 - Symptomatic relief and no relief- 2 months post operatively in study subjects (N = 105)

	Normal endoscopy	Positive Pathology present on preoperative UGIE
No symptomatic relief post operatively	0	20
Symptomatic relief post operatively	23	62

Table 4 shows symptoms persistence 2 months postoperatively among 105 study subjects. Out of 23 patients with normal endoscopy all were symptom free. Out of total 82 patients with presence of pathology on endoscopy, only 20 patients had persistence of symptoms 2 months postoperatively. The difference is statistically significant ($\chi^2 = 10.710$, $p < 0.001$), indicating that symptoms are more likely to persist in patients with presence of pathology on endoscopy.

DISCUSSION:

82.6% females and 17.4 % had normal endoscopy. Overall, females represent 71.4% of the total participants, and males 28.6%. The difference in sex distribution regarding presence of pathology on endoscopy is not statistically significant ($\chi^2 = 1.804$, $p = 0.179$). Sharma et al. (2020) explored the relationship between gender and UGIE findings in patients with gall bladder stone disease. They reported that females had a higher prevalence of presence of pathology on endoscopy (67%) compared to males (33%), similar to present study. Like present study, they found no significant sex-based

difference in the distribution of presence of pathology on endoscopy, with a p-value greater than 0.05, suggesting that gender may not be a key determinant in the development of pathology on endoscopy in these patients.

Endoscopy findings -include pangastritis (25.7%) and normal findings in 21.9%. Singh et al. (2023) emphasized that the presence of pathology, including pangastritis and mild gastritis, can significantly impact surgical outcomes. Their study showed that identifying and managing these conditions preoperatively helps in addressing potential sources of gastrointestinal discomfort or bleeding, which could complicate the cholecystectomy or affect postoperative recovery.

Symptomatic relief on post operative day 14 -In the present study of the 77 subjects whose symptoms were relieved, 23 were those with normal endoscopy findings and 54 had pathology on endoscopy. In contrast, 28 subjects still had symptoms, all of whom had pathology on endoscopy. The difference is statistically significant ($\chi^2 = 10.710$, $p < 0.001$), indicating that symptoms are more likely to persist in patients with presence of pathology on endoscopy. Kumar et al (2021) examined the persistence of symptoms following cholecystectomy in patients with gall bladder stones. Their study revealed that those with endoscopic evidence of pathology had a significantly higher likelihood of continued gastrointestinal complaints post-surgery, while patients with normal endoscopy were more likely to experience relief. The significant association between presence of pathology on endoscopy and symptom persistence in their study ($p < 0.001$) is consistent with our findings.

Symptoms persistence 2 months post operatively- In the present study of the 85 subjects whose symptoms were relieved, 23 were those with normal endoscopy findings and 62 had pathology on endoscopy. In contrast, 20 subjects still had symptoms, all of whom had pathology on endoscopy. The difference is statistically significant ($p < 0.001$), indicating that symptoms are more likely to persist in patients with pathology on endoscopy. Patients with normal endoscopy were more likely to have symptom resolution, while those with pathology on endoscopy experienced persistent dyspeptic symptoms, with a statistically significant association ($p < 0.001$). This underscores the importance of addressing pathology on endoscopy in managing long-term symptom relief in gall bladder stone patients and counseling.

CONCLUSIONS

Presence of pathology on endoscopy was strongly linked to symptom persistence postoperatively. Findings on endoscopy underscore the impact on symptom resolution and the importance of managing upper GI pathologies to manage patients preoperatively, improve postoperative outcomes and patient counseling; hence pre operative upper gastrointestinal endoscopy is desirable in patients undergoing elective laparoscopic cholecystectomy.

REFERENCES:

- Berger MY, Hartman TC, Vander VJIM, Bohnen A. Is biliary pain exclusively related to gall bladder stone.? A controlled prospective study. Br J Gen Pract. 2004;54(303):574-9.
- Schirmer BD, Winters KL, Edlich RF Cholelithiasis and cholecystitis. J Long Term Eff Med Implants. 2005;15(3):329-38.
- Conte D, Fraquelli M, Giunta M, Conti CB. Gall stones and Liver disease; an overview. J Gastrointestin Liver Dis. 2011;20:9-11.
- T. H. Pham and J. G. Hnuter, "Gall bladder and the extra hepatic biliary system," Schwartz's Principles of Surgery, McGraw Hill Professional, New York, NY, USA, 10th edition, 2009.
- D. Al-Azawi, A. Rayis, and D. J. Hehir, "Esophagogastroduodenoscopy prior to laparoscopic cholecystectomy," Journal of Laparoendoscopic & Advanced Surgical Techniques, vol. 16, no. 6, pp. 593-597, 2006.
- J. E. Everhart and C. E. Ruhl, "Burden of digestive diseases in the United States. Part III: liver, biliary tract and pancreas," Gastroenterology, vol. 136, pp. 1134-1144, 2009.
- Kraag N, Thijs C, Knipschild P Dyspepsia-how noisy are gallstones? A meta-analysis of epidemiologic studies of biliary pain, dyspeptic symptoms, and

- food intolerance. *Scand J Gastroenterol.* 1995;30(5):411-21.8. Girometti R, Brondani G, Cereser L, Como G, Del Pin M, Bazzocchi M, Zuiani C. Post-cholecystectomy syndrome: spectrum of biliary findings at magnetic resonance cholangiopancreatography. *British J Radiol.* 2010;83(988):351-61.9. ASGE Guidelines. Patient preparation for gastrointestinal endoscopy. *GastrointestEndosc.* 1998;48(6):691-694.
10. Oddsdottir M, Hunter JG. Gallbladder and the extra-hepatic biliary system. In F. Charles Brunicaud Schwartz's Principles of surgery 8th Ed. McGraw-Hill. New Delhi; 2005:1190-1095.
 11. Sharma S, Walia BS, Randhawa M, Sharma A, Dugg P, Pannu JS. Histopathological changes in gall bladder mucosa in relation to the number, and size of gallstones, and analysis of the findings in the context of age distribution of the patients: A perspective. *Ann Hepatobiliary Pancreat Surg.* 2020 Aug 31;27(3):277- 286. doi: 10.14701/ahbps.23-010. Epub 2023 Aug 7. PMID: 37547937; PMCID: PMC10472125.
 12. Singh, Vikram & Singla, Sonal & Singh, Harjeet & Sharma, Vishal & Das, Ashim. (2019). Massive hematemesis in a case of gastric amyloidosis masquerading as gastric carcinoma. *Autopsy and Case Reports.* 9. 10.4322/acr.2018.074
 13. Kumar RS et al. *Int Surg J.* 2021 Sep;8(9):2699-2706 Is endoscopy a must before laparoscopic cholecystectomy? DOI: <https://dx.doi.org/10.18203/2349-2902.isj20213599> pISSN 2349-3305 | eISSN 2349-2902