Clinics in Oncology

Research Article
Published: 13 Feb, 2019

Which to Choose? Surgery or Upper GI Endoscopy in Symptomatic Gallstones

Chandio A[1], Naqvi SA[1], Sabri S[1], Aftab F[2], Abbasi M[3], Shaikh Z[3], Chandio K[4], Soomro F[4] and Memon A[4]*

[1]Department of Surgery, Tameside NHS Foundation Trust Hospital, UK

[2]Department of Surgery, Mallow General Hospital, Co.Cork, Ireland Republic

[3]Department of Surgery, Liaquat University of Medical & Health Sciences, Jamshoro, Pakistan

[4]SDepartment of Surgery, haheed Mohtarama Benazir Bhutto Medical University & Chandka Medical College Larkana, Pakistan

Abstract

Background: Gallstones are common; they do not cause any symptoms in many people. About one in three people with gallstones develop symptoms (symptomatic).There are wide range of gastrointestinal symptoms have been linked to gallstones but causal relationship has not been established yet. It has always been a challenge to differentiate between upper gastrointestinal symptoms due to gall stones or any other causes. There is conflicting evidence that preoperative Gastroscopy is useful in identifying medically treatable diseases in patients undergoing Cholecystectomy.

Aim: To evaluate significance of Upper GI endoscopy as a pre-operative investigative tool in symptomatic gallstones.

Methods: Prospective observational multicentre study of 433 patients undergoing Laparoscopic cholecystectomy from December 2014 to November 2016. All patients diagnosed with gallstones based on ultrasound abdomen, irrespective of age and sex. All patients were subjected to Upper Gastrointestinal Endoscopy 24 hr to 48 hrs before cholecystectomy biopsies were obtained for histopathology if required. Patients decline surgeries, pregnant ladies, CBD stone, obstructive jaundice, carcinoma of gall bladder, were excluded.

Results: During this period, 433 patients. The female to male ratio 3.5:1 (337 vs. 96), and the mean patient age was 45.10 ± 6.31 years (21 to 65 years). 266 (61.78%) Patients were present with atypical pain and 167 (38.21%) typical pain. Ultrasound revealed multiple stones 335(77.36%), single stone 98 (22.63%), impacted stone at the neck of gallbladder was found in 76 (17.55%) patients, Thick wall gallbladder was seen in 247 (57.04%) patients and contracted gallbladder 51 (11.77%) patients. Pre-operative upper gastrointestinal endoscopy findings revealed gastritis in 108 (24.94%), gastric ulcer 55 (12.70%), duodenal ulcer in 44 (10.16%), GERD in 31 (7.15%), Esophagitis in 37 (8.54%) cases, polyps 21 (4.84%) and carcinoma of stomach 9 (2.07%). In all patients with typical pain complete relief of symptoms were observed within 13 days post- operatively. Out of 266 (61.43%) cases with a typical pain had persistence of symptoms in 157 (59.02%) cases up to four months.

Conclusion: We recommend that upper gastrointestinal endoscopy should be performed preoperatively in patients with nonspecific upper abdominal pain and history of peptic ulcer disease.

Keywords: Cholecystectomy; Cholelithiasis; Gastroscopy

OPEN ACCESS

Correspondence:
Chandio A, Department of Surgery, Tameside NHS Foundation Trust Hospital, UK,
E-mail: chandioashfaq@yahoo.com

Received Date: *19 Jan 2019*
Accepted Date: *09 Feb 2019*
Published Date: *13 Feb 2019*

Citation:
Chandio A, Naqvi SA, Sabri S, Aftab F, Abbasi M, Shaikh Z, et al. Which to Choose? Surgery or Upper GI Endoscopy in Symptomatic Gallstones. Clin Oncol. 2019; 4: 1574.

Background

Gallstones are common; they do not cause any symptoms in many people. About one in three people with gallstones develop symptoms (symptomatic). About 70,000 cholecystectomies are performed every year in the UK, with significant costs for the NHS, it is known that some patients do not have any more symptoms after the initial episode of pain and that surgery may not be necessary. There are wide range of gastrointestinal symptoms have been linked to gallstones but causal relationship has not been established yet [1-3]. It has always been a challenge to differentiate between upper gastrointestinal symptoms due to gall stones or any other causes. The persistence of symptoms even after cholecystectomy is extremely discouraging for surgeons. There is uncertainty about the best way of treating gallstone disease. There are a range of endoscopic, surgical and

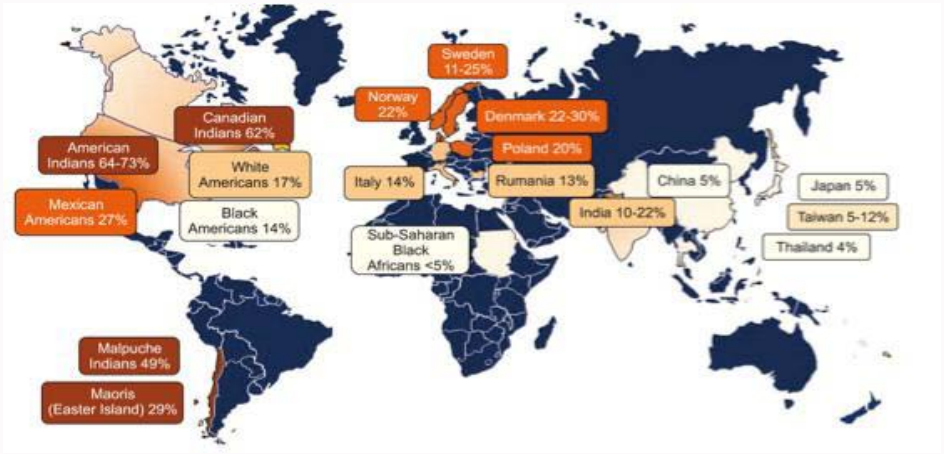

Figure 1:

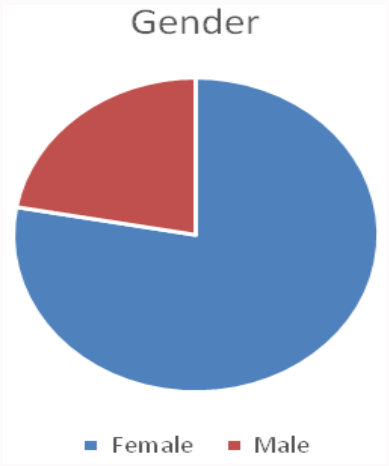

Figure 2:

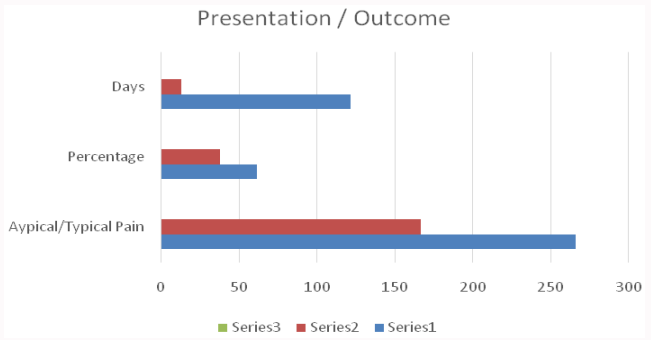

Figure 3:

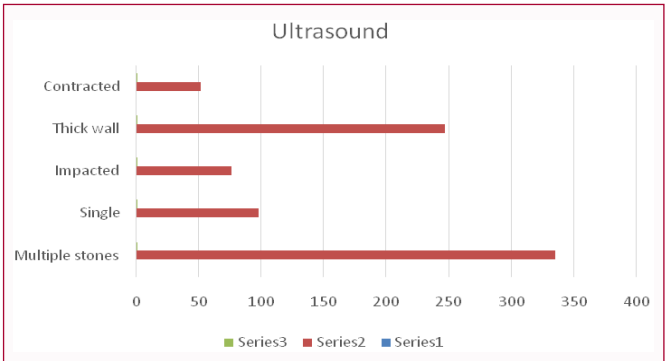

Figure 4:

medical treatments available, but it is unclear which treatments are the most appropriate for which patients. There is also uncertainty about the timing of cholecystectomy, and whether it should take place during the acute presentation of the disease, or if it should be delayed until after the acute symptoms have subsided. An upper GI endoscopy has been recommended in patients with nonspecific upper abdominal pain, history of peptic ulcer disease and persisting pain after laparoscopic cholecystectomy [4]. There is conflicting evidence that preoperative Gastroscopy is useful in identifying medically treatable diseases in patients undergoing Cholecystectomy [5,6].

Methods

Prospective observational multicentre study of 433 patients undergoing Laparoscopic cholecystectomy from December 2014 to November 2016. All patients diagnosed with gallstones based on ultrasound abdomen and typical or atypical abdominal pain, irrespective of age and sex. All patients were subjected to Upper Gastrointestinal Endoscopy 24 to 48 hours before cholecystectomy biopsy were obtained for histopathology if required. The OGD examinations were performed by Gastroenterologists and GI surgeons. Where polyps were found, they were removed and assessed histopathologically. Scheduled cholecystectomy was postponed when there were gastric or duodenal ulcers, gastric polyps, or inflammatory changes of gastric mucous membrane until histopathologic results were obtained and ulcers healed. The decision for cholecystectomy was made by the surgeons. The following preoperative parameters were recorded: age, sex, obesity, previous abdominal surgery, presentation with acute cholecystitis, pancreatitis or obstructive jaundice, ultrasonography detection of gallbladder wall thickening or gallbladder stones, and the presence of Common Bile Duct (CBD) stones. Clinical patterns of patient's pain, endoscopic and pathologic findings as well as related comorbidities were obtained from the patient's case notes. Endoscopic findings divided the problem into four main groups, normal, inflammation, ulcer, and others (polyps, varices etc.) whilst the pathological findings were defined as benign and malignant.

Inclusion criteria

Symptomatic patients willing to participate in the study,

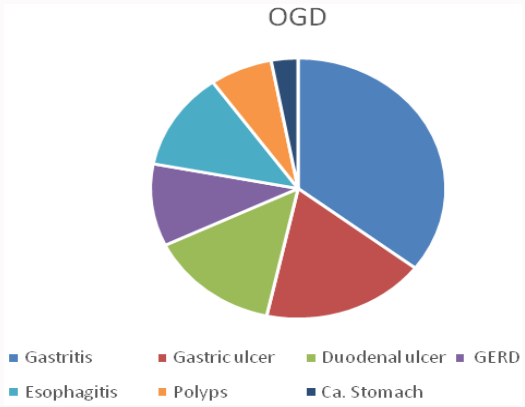

Figure 5:

ultrasound proven gallstones.

Exclusion criteria

Those patients not keen, unfit for surgery, pregnant ladies due to risk of foetal loss, CBD stone, obstructive jaundice, carcinoma of gall bladder and were excluded.

Statistical analysis

Data were analysed using the Statistical Package for Social Sciences (SPSS, version 17). Mean values were compared using the Student t test. Univariate analysis of categorical variables was performed by the chi-square test.

Results

During this period, 433 patients. The female to male ratio 3.5:1 (337 versus 96), and the mean patient age was 45.10 ± 6.31 years (21 to 65 years) (Figure 1,2, Table1). 266 (61.78%) atypical pain and 167 (38.21%) Patients were present with typical pain (Figure 3). Ultrasound revealed multiple stones 335 (77.36%), single stone 98 (22.63%), impacted stone at the neck of gallbladder was found in 76 (17.55%) patients, Thick wall gallbladder was seen in 247 (57.04%) patients and contracted gallbladder 51 (11.77%) patients (Figure 4, Table 2). Pre-operative upper gastrointestinal endoscopy findings revealed gastritis in 108 (24.94%), gastric ulcer 55 (12.70%), duodenal ulcer in 44 (10.16%), GERD in 31 (7.15%), Esophagitis in 37 (8.54%) cases, polyps 21 (4.84%) and carcinoma of stomach 9 (2.07%). (Figure 5, Table 3). In all patients with typical pain complete relief of symptoms were observed within 13 days post- operatively, out of 266 (61.43%) cases with atypical pain had persistence of symptoms in 157 (59.02%) cases up to four months (Table 4).

Table 1:

		Demographics			
Cohort	**Female**	**Male**	**Ratio**	**Mean Age**	**Range**
433	337	96	3.5:1	45.1 Years	21–65 Yrs

Table 2:

Ultrasound Findings	Cases	Percentage
Multiple stones	335	77.36%
Single	98	22.63%
Impacted	76	17.55%
Thick wall	247	57.04%
Contracted	51	11.77%

Table 3:

	Pre-Operative OGD	
Condition	**Number**	**Percentage**
Gastritis	108	24.94
Gastriculcer	55	12.7
Duodenalulcer	44	10.16
GERD	31	7.15
Esophagitis	37	8.54
Polyps	21	4.84
Ca. Stomach	9	2.07

Table 4:

Presentation	Cases	Percentage	Days
Typical pain	167	38.21%	13
Atypical pain	266	61.78%	122

Discussion

Gallstone disease remains one of the most common medical problems leading to surgical intervention. 70% to 85% per cent of people with cholelithiasis are asymptomatic [7] or have nonspecific symptoms such as pain in their abdomen, stomach, back or shoulder, which may be misattributed to other conditions such as dyspepsia or general back ache. In most cases, asymptomatic gallstone is detected incidentally through imaging such as ultrasound or MRI as part of investigations for other conditions. For about 20% of people with cholelithiasis, the condition is symptomatic and can cause morbidity and complications (cholecystitis, cholangitis, obstructive jaundice, pancreatitis) that can be extremely painful and, in some cases, life threatening and needing emergency treatment as well as high costs of medical care. In the United States, Gallstone disease is the second most expensive digestive disease only surpassed by gastroesophageal reflux disease. Every year about 700,000 cholecystectomies are performed in the United States [8], and 190,000 patients with gallstone disease undergo surgery in Germany [9]. About 70,000 cholecystectomies are performed every year in the UK, with significant costs for the NHS. The health care costs of gallstone disease (~6.5 billion dollars/year) increased by 20% over the last three decades in the United States [10]. Gallstones found incidentally in the investigation of gastrointestinal symptoms may become falsely incriminated to explain pathology that arises outside the biliary tree [11]. There is variation within the NHS in how asymptomatic gallbladder stones are managed once they have been diagnosed. Some adults are offered treatment to prevent symptoms and complications developing. Others are offered a watch-and-wait approach, and only have active treatment once the stones begin to cause symptoms. The differential diagnosis between symptomatic gallstones and inflammatory disorders of gastrointestinal tract is difficult due to the similar symptoms. Sosada et al. [12] assayed 2,800 patients who were treated for symptomatic cholelithiasis. 2,325 of them were female and 475 were male patients. In the study about 42% of the patients had pathological changes during their esophagogastroduodenoscopy, in 37.18% an inflammatory component was found [12]. In another retrospective study by Dimitriou et al. [13] data of 766 patients was analysed. The patients underwent a preoperative esophagogastroduodenoscopy independently of their symptoms and they found inflammatory changes of the upper gastrointestinal tract in 43.1% of their patients

13. Sosada et al. [12] also state that some patients still suffered from epigastric pain after a successful surgery, which might be due to an unrecognised inflammatory disease of the upper gastrointestinal tract. The diagnosis of a peptic ulcer led to a cancellation of the cholecystectomy and was replaced by PPI therapy because of the high risk for bleedings or perforation. Only after medical treatment some patients still underwent a cholecystectomy due to persisting epigastric pain. In helicobacter pylori -positive patients an additional treatment with antibiotics was necessary [12]. The study of Dimitriou et al. [13] however did not show any significantly higher necessity to change a surgical treatment to a medical therapy in patients with atypical epigastric pain [13]. There are wide range of gastrointestinal symptoms have been linked to gallstones but causal relationship has not been established yet [14,15] it is commonly accepted that removal of the gallbladder is the best treatment for symptomatic gallstone disease [16]. However, less focus has been on patient selection and typical or common symptoms of this disease to understand prevailing symptoms after surgery. Nevertheless, given the high proportion of non-specific abdominal symptoms in the people with known gallstones may lead to unjustifiable cholecystectomies [14,17]. There are a range of endoscopic, surgical and medical treatments available to treat gallstone disease. Surgery to remove the gallbladder (cholecystectomy) is the most common way to treat biliary pain or cholecystitis caused by gallstones and is one of the most commonly performed surgical procedures in the NHS. An upper GI endoscopy has been recommended in patients with nonspecific upper abdominal pain, history of peptic ulcer disease and persisting pain after laparoscopic cholecystectomy [4]. In our study Pre-operative upper gastrointestinal endoscopy findings revealed normal gastroscopy in 34.03% (130 out of 382 patients) this is in contrast with other studies. Rassek et al. [18] in his study 589 out of 960 patients underwent gastroscopy for elective cholecystectomy, however 56% had normal gastroscopy, 11.3% (113 patients) underwent a change in plan of therapy because of the OGD findings [18] and recommended that investigation of the upper gastrointestinal tract must precede an elective cholecystectomy. Schenk et al., in his study, 1064/1143 (93.1%) patients underwent OGD and 345 patients (30.2%) had pathological findings. Of these, 68.3% were inflammatory in nature 28 patients (2.5%) underwent additional GI surgical procedures along with cholecystectomy and bile duct exploration 19.8% (227 patients) underwent pharmacological treatment of the gastrointestinal disease after their biliary surgery [19] and suggested that owing to the high incidence of concurrent disease in the upper GI tract, preoperative gastroscopy should be performed prior to elective surgical therapy of symptomatic gallstones. Study of Thybusch et al. [20] discuss the value and therapeutic implications of routine OGD before cholecystectomy, in his study 47.3% (160/338) patients undergoing cholecystectomy also had Upper GI endoscopy, amongst those he observed gastritis (25.7%), peptic ulcer disease (6.8%), hiatus hernia (4.7%) polyps (3.2%), oesophagitis (3%), gastric erosions (1.8%) and gastric cancer (6%). Findings on gastroscopy did not necessarily correlate with clinical symptoms. OGD findings influenced management in 8.3% of patients and the surgery was postponed awaiting medical treatment. Further, two patients with gastric cancer underwent Gastrectomy [20]. In studies by Faisal et al. [21] and Mozafar et al. [22] found 77.2% and 83% of patients with atypical pain had abnormal OGD findings [21,22]. This establishes the importance of UGE prior to elective cholecystectomy especially with atypical pain. In our study, the diagnosis of peptic ulcer did not lead to a cancellation or the postponing of the cholecystectomy. They were treated simultaneously with PPI and in cases of helicobacter pylori-positive with triple therapy. The reproducibility of the study would be difficult due to the subjective selection of the results. In the case of more than one existing option, it was not possible to select all diagnoses. This could lead to the impression that some diagnoses are more frequent than others. In the present study, therapeutic approach was changed in [9] (2.35%) who were diagnosed with malignancy in pathological reports.

Prospective design of the study, it was possible to evaluate the symptoms of the participating patients. A potential weakness of study variation in practice in country (Asia and Europe), cost effectiveness of routine OGD for every patient. In author's opinion, it would have been necessary to exclude patients with the clear diagnosis of a cholecystitis with ultrasound abdominal. An acute cholecystitis would almost always require surgical treatment, as it explains the symptoms. Higher incidence of concurrent upper gastrointestinal problems in patients with gall stones and atypical abdominal pain OGD before elective cholecystectomy can highly influence the management which in this group can be clinically helpful regarding postoperative outcomes. It would also have been necessary to follow up the patients subsequently.

Conclusion

We recommend Preoperative Gastroscopy in patients with nonspecific upper abdominal pain and history of peptic ulcer disease.

References

1. Schirmer BD, Winters KL, Edlich RF. Cholelithiasis and cholecystitis. J Long Term Eff Med Implants. 2005;15(3):329-38.
2. Stinton LM, Shaffer EA. Epidemiology of gallbladder disease: cholelithiasis and cancer. Gut Liver. 2012;6(2):172-87.
3. 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.
4. Fahlke J, Ridwelski K, Manger T, Grote R, Lippert H. Diagnostic workup before laparoscopic cholecystectomy–which diagnostic tools should be used? Hepatogastroenterology. 2001;48(37):59-65.
5. Ure BM, Troidl H, Spangenberger W, Lefering R, Dietrich A, Sommer H. Evaluation of routine upper digestive tract endoscopy before laparoscopic cholecystectomy. Br J Surg. 1992;79(11):1174-7.
6. Al-Azawi D, Rayis A, Hehir DJ. Esophagogastroduodenoscopy prior to laparoscopic cholecystectomy. J Laparoendosc Adv Surg Tech A. 2006;16(6):593-7.
7. Sakorafas HG, Milingos D, Peros G. Asymptomatic cholelithiasis: is cholecystectomy really needed? A critical reappraisal 15 years after the introduction of laparoscopic cholecystectomy. Dig Dis Sci. 2007;52(5):1313-25.
8. National Institutes of Health Consensus Development Conference Statement on gallstones and laparoscopic cholecystectomy. Am J Surg. 1993;165(4):390-8.
9. Lammert F, Neubrand MW, Bittner R, Feussner H, Greiner L, Hagenmüller F, et al. S3-guidelines for diagnosis and treatment of gallstones. German Society for Digestive and Metabolic Diseases and German Society for Surgery of the Alimentary Tract. Z Gastroenterol. 2007;45(9):971-1001.
10. Everhart JE, Ruhl CE. Burden of digestive diseases in the United States. Part III: liver, biliary tract and pancreas. Gastroenterology. 2009;136(4):1134-44.
11. Halldestam I, Kullman E, Borch K. Defined indications for elective cholecystectomy for gallstone disease. Br J Surg. 2008;95(5):620-6.

12. Sosada K, Zurawinski W, Piecuch J, Stepien T, Makarska J. Gastroduodenoscopy: a routine examination of 2,800 patients before laparoscopic cholecystectomy. Surg Endosc. 2005;19(8):1103-8.

13. Reckmann B, Nephuth O, Betzler M. Stellenwert der routinemäßigen präoperativen Ösophagogastroduodenoskopie vor elektiver Cholezystektomie. Zentralblatt für Chir. 2010;137(1):38-42.

14. Schirmer BD, Winters KL, Edlich RF. Cholelithiasis and cholecystitis. J Long Term Eff Med Implants. 2005;15(3):329-38.

15. 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.

16. Berger MY, Olde Hartman TC, Bohnen AM. Abdominal symptoms: do they disappear after cholecystectomy? Surg Endosc. 2003;17(11):1723-8.

17. Glambek I, Arnesjo B, Soreide O. Correlation between gallstones and abdominal symptoms in a random population. Results from a screening study. Scand J Gastro- enterol. 1989;24(3):277-81.

18. Rassek D, Osswald J, Stock W. [Routine gastroscopy before cholecystectomy]. Chirurg. 1988;59(5):335-7.

19. Schwenk W, Bohm B, Badke A, Zarras K, Stock W. [Preoperative esophagogas- troduodenoscopy before elective surgical therapy of symptomatic cholelithiasis]. Leber Magen Darm. 1992;22(6):225-9.

20. Thybusch A, Schaube H, Schweizer E, Gollnick D, Grimm H. [Significant value and therapeutic implications of routine gastroscopy before cholecystectomy]. J Chir (Paris). 1996;133(4):171-4.

21. Faisal A, Gadallah AN, Omar SA, Nagy MA. The role of upper Gastrointestinal Endoscopy in Prevention of Post – Cholecystectomy pain prior to the elective surgical therapy of chronic cholecystitis. Med J Cairo Uni. 2013;81(1):289- 93.

22. Mozafer M, Sobhiyeh M, Heiba Tollahi M. Is esophagogastroduodenoscopy essential prior to the elective surgical therapy of symptomatic cholelithiasis? Gastro enteroscopy and Hepatology from bed to Bench. 2010;3(2);77-82.