Is It Necessary to Perform Pre Operative Upper Gastrointestinal Endoscopy in Elective Symptomatic Cholelithasis?

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Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Objective: Is it necessary to perform pre operative upper gastrointestinal endoscopy in elective symptomatic cholelithiasis?

Study Design: Prospective observational study.

Place and Duration of Study: This study was conducted at surgical departments of Services Hospital, Ruth PFAHU, Civil Hospital Karachi, Shaheed Benazir Bhutto Medical College, Lyari Karachi and Liaquat University Of Medical and Health Sciences, Jamshoro from July 2018 to December 2019.

Methodology: Study consisted of 382 patients. All patients were subjected to Upper Gastrointestinal Endoscopy 24 to 48 hours before cholecystectomy followed by biopsy were

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obtained for histopathology if required. Those patients not willing for surgery, General anesthesia problem, pregnant ladies due to risk of foetal loss, carcinoma of gall bladder, stone in CBD and obstructive jaundice were excluded.  

**Results:** Out of the 382 patients, 66(17.27%) males and 316(82.72%) females with mean age of study population was 46.10 ± 6.31 years (22 to 65 years). Patients were present typical pain in 146(38.21%) cases and atypical pain in 236(61.78%) cases. Pre operative upper gastrointestinal endoscopy findings revealed Esophagitis in 22(5.75%) cases, GERD in 26(6.80%) cases, gastritis in 88(23.03%), gastric ulcer 49(12.82%), duodenal ulcer in 39(10.20%), polps 21(5.49%) and carcinoma of stomach 9(2.35%). Out of 236(61.78%) cases with atypical pain had persistence of symptoms in 141 (59.74%) cases up to four months.  

**Conclusion:** We conclude that upper gastrointestinal endoscopy preoperatively for gallstone disease should be performed. So that preoperatively atypical symptoms are evaluate and taken care of, and patients is fully informed and also treated for associated conditions.  

**Keywords:** Cholecystectomy; upper gastrointestinal endoscopy; cholelithiasis.

### 1. INTRODUCTION

Gall stones are a common adult problem but only 2-3% of patients turn symptomatic annually [1]. The usual symptoms of gall stone disease include severe mid epigastric pain radiating to the upper right quadrant lasting from 15 minutes to several hours. It may be followed by nausea and vomiting. Gall bladder disease may also present with atypical pain which manifests as abdominal discomfort, dyspepsia, flatulence, nausea, vomiting or loss of appetite [2]. Keeping in mind the risk factors associated with it, when patients present with typical or atypical pain physicians usually order abdominal ultrasound and liver function tests [3]. When gall stones are detected, all emphasis lies on treating gall stones putting behind any need for further investigations [4]. 6-34% of patients don’t get relief in pain after cholecystectomy and present with what is known as post cholecystectomy syndrome [4,5]. This phrase is a misnomer as causes for post cholecystectomy syndrome may be biliary or unrelated to the biliary tract. Biliary causes include common bile duct stones, inflammatory strictures of papilla, lesion of cystic duct stump and organic pancreatobiliary or gastro-intestinal disorders. Pain may be related to psychosomatic or extra-intestinal manifestations [6]. Another cause for persistence of abdominal pain even after successful cholecystectomy may be related to the fact that gallstones might not be the reason of abdominal pain for which causes were evaluated. There may be some other pathology lying behind for which ultrasound was ordered and led to incidental finding of gall stones. Extra-biliary pathologies such as gastritis, oesophagitis, hiatus hernia, duodenitis, gastric and duodenal erosions and ulcers, gastric polyps may be present along with gall stones [7]. They may be responsible for causing epigastric pain but when gall stones are found on ultrasonography, the physician turns his mind on cholecystectomy as the procedure of choice. Laparoscopic cholecystectomy is a very safe and effective procedure with minimal post-operative complications therefore patients consent to surgery very easily. But often the symptoms are not relieved after successful laparoscopic cholecystectomy. Post-cholecystectomy syndrome then haunts the patient as well as the physician requiring further workup to look for its cause. If upper gastro-intestinal endoscopy is added to first line investigations for patient with gall stones this could lead to a better management plan which could be beneficial for the patient clinically and economically.

### 2. MATERIALS AND METHODS

This study was conducted at surgical departments of Services Hospital, Ruth PFAHU, Civil Hospital Karachi, Shaheed Benazir Bhutto Medical College, Lyari Karachi and Liaquat University Of Medical and Health Sciences, Jamshoro from July 2018 to December 2019. Study consisted of 382 patients. All patients diagnosed case of gallstones on the basis of ultrasound abdomen, irrespective of age and sex. Detailed Clinical examination regarding palpable mass, visceromegaly in the right hypochondrium and assessment of murphy’s sign. All patients were subjected to Upper Gastrointestinal Endoscopy 24 to 48 hours before cholecystectomy followed by biopsy were obtained for histopathology if required. Those patients not willing for surgery, General anesthesia problem, pregnant ladies due to risk of foetal loss, carcinoma of gall bladder, stone in CBD and obstructive jaundice were excluded.
Data analyses were using Statistical Package for Social Science (SPSS) software, Version 22.

3. RESULTS

Out of the 382 patients, 66(17.27%) males and 316(82.72%) females with mean age of study population was 46.10 ± 6.31 years (22 to 65 years). Patients were present typical pain in 146(38.21%) cases and atypical pain in 236(61.78%) cases. Ultrasound findings revealed was single stone in 83(21.72%) patients and multiple stones in 299(78.27%) patients, Impacted stone at the neck of gallbladder was found in 68(17.80%) patients, Thick wall gallbladder was seen in 221(57.85%) patients and contracted gallbladder 44(11.51%) patients (Table 1). Pre operative upper gastrointestinal endoscopy findings revealed Esophagitis in 22(5.75%) cases, GERD in 26(6.80%) cases, gastritis in 88(23.03%), gastric ulcer 49(12.82%), duodenal ulcer in 39(10.20%), polps 21(5.49%) and carcinoma of stomach 9(2.35%) (Fig. 1). In all patients with typical pain complete relief of symptoms were observed within 15days post-operatively. Out of 236(61.78%) cases with atypical pain had persistence of symptoms in 141(59.74%) cases upto four months.

| Table 1. Patient’s Characteristic (n-382) |
|------------------------------------------|
| **Variable**                           | **Patients** | **Percentage** |
| **Gender**                             |              |                |
| • Male                                 | 66           | 17.27%         |
| • Female                               | 316          | 82.72%         |
| **Pain**                               |              |                |
| • Typical pain                         | 146          | 38.21%         |
| • Atypical pain                        | 236          | 61.78%         |
| **Ultrasound findings**                |              |                |
| • Single stone                         | 83           | 21.72%         |
| • Multiple stone                       | 299          | 78.27%         |
| • Impacted stone                       | 68           | 17.80%         |
| • Thick wall gallbladder               | 221          | 57.85%         |
| • Contracted gallbladder               | 44           | 11.51%         |
4. DISCUSSION

Our data shows greater number of females having cholelithiasis. This finding corresponds with majority of studies. This is because of increased incidence of risk factors such as obesity, hyperlipidemias, rapid weight loss, drugs and pregnancy in females [6]. Hullery et al. in his study reported that hormonal differences among males and females put females at a much higher risk for development of gall stones. Progesterone inhibits gall bladder contractility where as estrogen stimulates the release of HMG CoA reductase which increases cholesterol synthesis. These two effects contributed in increased incidence of gall stones in females [8].

Upper gastro-intestinal endoscopy is a discomforting procedure and adds to the financial burden therefore majority of patients are reluctant to go for it. However it is proven that routine use of upper gastrointestinal endoscopy can delay laproscopic cholecystectomy with clinical benefits. Thybusch et al reported in his study that management plan was changed in 8.3% of patients who went for endoscopy before laproscopic cholecystectomy [9]. In another study management plan changed in 3.1% of patients [2]. Sasoda et al reported that among 2800 patients who went for endoscopy, surgery was delayed in patients with active ulcer and symptoms totally resolved in 16 patients after medical treatment and cholecystectomy was not done [10].

Abnormal findings on upper gastro-intestinal endoscopy were found in 66.42% of patients in our study while Ibrahim et al reports abnormalities in 47.3% of his patients of his study. He reported gastritis as the most common abnormality found on endoscopy which corresponds with the results for our study [7]. 23.03% of patients from our study had gastritis. Second most common finding in our study was gastric ulcer followed by duodenal ulcer. Other abnormalities of our study include duodenal ulcers (10.2%), GERD (6.8%), esophagitis (5.75%), polyps (5.49%), carcinoma of stomach (2.35%). Surgery during active peptic ulcer can lead to post-operative complications and worsening of ulcer due to influence of stress hormones [10]. Rashid et al reports upper GI abnormalities in in 33% of patients from his study [11].

Patients with atypical pain are most likely to manifest post-cholecystectomy syndrome. Patients from our study who reported with typical pain, none had persistence of pain 15 days after surgery while 59.74% of those with atypical pain had persistence of symptoms. Mozafar et al reported in his study that among patients with atypical pain, 83.14% of patients had abnormal findings on upper gastro-intestinal endoscopy [12]. Kamacharya A et al also reported that patients with atypical pain are more likely to have upper gastro-intestinal abnormalities which could be detected on endoscopy [2].

Gall bladder disease is asymptomatic for a long period of time. 10% of patients will develop symptoms after 5 years of initial diagnosis while 20% will develop symptoms after 20 years of diagnosis [13]. What leads to development of symptoms is still obscure. Females develop symptoms more rapidly then men. Young people are more likely to have symptomatic gall bladder disease because they have small stones which could easily pass out of gall bladder causing obstructive symptoms. Also they have stronger gall bladder contractions [14]. Even if cholelithiasis is asymptomatic, removal of gall bladder is the best treatment modality.

5. CONCLUSION

If endoscopy is added to routine investigations for symptomatic gall stones, this could lead to more clear cause for pain and significantly reduces the chances for postcholecystectomy syndrome. Gastritis and peptic ulcer disease were mostly commonly found on endoscopy and can be easily treated by proton pump inhibitors and H.Pylori eradication therapy bringing improvement in symptoms whereas laproscopic cholecystectomy can be taken place later in time.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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