



A CLINICAL STUDY ON ROLE OF UPPER GASTROINTESTINAL ENDOSCOPY BEFORE LAPAROSCOPIC CHOLECYSTECTOMY IN A SECONDARY CARE CENTRE

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ABSTRACT

Background: Cholelithiasis is one of the most common problems encountered in surgery. It's an immense challenge to discriminate between upper gastrointestinal (UGI) symptoms due to gall stones or any other causes.

This study focuses on the role of upper gastrointestinal endoscopy as an investigative modality to find out other associated disorders of upper gastrointestinal tract in patients with ultra-sonogram proven gallstones presenting with dyspeptic symptoms.

Methods: Patients included in the study were divided into two groups based on symptoms, Group A (typical symptoms) and Group B (atypical symptoms). All patients will be subjected to UGI endoscopy 1 or 2 days prior to operation and the endoscopic findings were noted. The patients who underwent cholecystectomy were followed up postoperatively on 7th, 14th, 30th day to evaluate the presence of any dyspeptic symptoms.

Results: In present study we observed that, out of 92 patients, 37 were in typical group and 55 were in atypical group. All 92 patients underwent endoscopy before cholecystectomy. Out of 37 patients in typical group, 18 (48.60%) have positive findings. Out of 55 patients in atypical group, 42 (76.40%) have positive findings with gastritis being the most common finding in both groups. Out of 92 patients, 5 didn't undergo cholecystectomy and underwent different line of management. Patients were followed up postoperatively at day 7, 14 and 30. The reduction of pain was significant at day 30 with 2 (5.56%) in typical group and 3 (5.89%) in atypical group suffering with pain.

Conclusions: Cholelithiasis can present with a complex combination of clinical symptoms which may resemble the presentation of other gastrointestinal diseases. Hence, the use of routine preoperative investigations like upper GI endoscopy prior to planning surgical treatment of cholelithiasis may help to identify other potentially treatable medical conditions and hence may reduce overall cholecystectomy rates.

KEYWORDS :

Introduction:

Cholelithiasis is one of the most common problems encountered in surgery. It's an immense challenge to discriminate between upper gastrointestinal (UGI) symptoms due to gall stones or any other causes. These gastrointestinal symptoms have been related to gallstones but causal relationship has not been established yet. The persistence of abdominal symptoms even after cholecystectomy is highly discouraging for surgeons. Coexistence of concurrent upper gastrointestinal problems in gallstones disease patients may have attributed to the post cholecystectomy syndrome^{1,3}.

Persistent post cholecystectomy pain has been reported in 20-30% of patients⁴. The presence of such persistent pain is also called "post cholecystectomy syndrome". The relationship between such persistent pain and gallstones is often unclear. Coexistence of concurrent upper gastrointestinal problems with gallstones may have attributed to the post cholecystectomy syndrome.

Post-cholecystectomy syndrome (PCS) consists of a group of abdominal symptoms that recur and/or persist after cholecystectomy^{5,6}. It is defined as early if occurring in the post-operative period and late if it manifests after months or years. Although this term is used widely, it is not completely accurate, as it includes a large number of disorders, both biliary and extra-biliary in origin, that may be unrelated to cholecystectomy^{5,6}.

It has been reported that, 50% of these patients suffer from organic pancreaticobiliary and/or gastrointestinal disorders whereas the remaining patients are affected by psychosomatic or extra-intestinal diseases. Moreover, in 5% of patients who undergo laparoscopic cholecystectomy, the reason for chronic abdominal pain remains unknown.

Diaphragmatic hernia, hiatal hernia, achalasia, bile gastritis, peptic

ulcer disease & gastric cancers as well as complications of cholecystectomy surgery are of the most common causes of post cholecystectomy syndrome⁷.

To identify the cause of right upper quadrant (RUQ) pain, esophagogastroduodenoscopy (EGD) is important to identify the diseases of upper gastrointestinal tract. As it evaluates the mucosa for signs of disease from the oesophagus through the duodenum & allows direct visualization of the ampulla of Vater⁸.

Persistence of original complaints of post cholecystectomy patients is due to deficient preoperative evaluation of other comorbidities that causes the same symptomatology. Many upper G.I.T pathologies associated with cholecystitis such as gastritis, peptic ulcer & hiatus hernia are the causes of persistence of upper abdominal discomfort, dyspepsia & heart-burn in post cholecystectomy patients⁹.

This study focuses on the role of upper gastrointestinal endoscopy as an investigative modality to find out other associated disorders of upper gastrointestinal tract in patients with ultra-sonogram proven gallstones presenting with dyspeptic symptoms. The objective of this study was to analyze the use of upper gastrointestinal endoscopy (UGE) as a pre-operative investigative tool in gallstone disease patients presenting with chronic dyspepsia.

Methods:

A prospective, observational study conducted in the department of surgery, Dr Jeyasekharan hospital, Nagercoil, Tamilnadu from October 2015 to December 2017. Informed consent will be taken from each participant. The data that will be collected from the patients include personal information, presenting signs and symptoms, investigations including ultrasonography, UGE finding,

biopsy reports if present, medications, surgery details, any post-operative complications and findings. Patients included in the study were divided into two groups based on symptomatology, first group in which patient present with typical symptoms of biliary colic and second group in which patients present with atypical symptoms or dyspepsia (abdominal discomfort, nausea, belching, heart burn, food intolerance, flatulence, vomiting, loss of appetite). Patients who lost to follow up or left the hospital against advice will be excluded. Patients included in the study were divided into two groups based on symptoms, Group A (typical symptoms) and Group B (atypical symptoms). All patients will be subjected to UGI endoscopy 1 or 2 days prior to operation and the endoscopic findings were divided as normal, inflammatory, hiatus hernia, ulcers and others. Similar categorizations were applied for histopathological findings as well. The patients were followed up postoperatively on 7th, 14th, 30th day to evaluate the presence of any dyspeptic symptoms.

Results:

In this study total number of patients was 92 with the age range between 28 to 70 years. Number of patients in group I was 37 and number of patients in group II was 55. Among 92 patients 68 (73.9%) were females and 24 (26.1%) were males.

Distribution of symptomatology in group I:

Biliary colic: The patients with biliary colic were typically classified as group I.

Table 1: Distribution of biliary colic.

| | Biliary colic | % |
|-------|---------------|------|
| Yes | 37 | 40.2 |
| No | 55 | 59.8 |
| Total | 92 | 100 |

Distribution of symptomatology in group II (atypical symptoms):

Table 2: Distribution of atypical symptoms.

| Symptoms | Number | % |
|--------------------------|--------|-------|
| Heart burn | 26 | 47.30 |
| Belching | 19 | 34.50 |
| Post prandial fullness | 26 | 47.30 |
| Nausea | 20 | 36.40 |
| Vomiting | 7 | 12.70 |
| Others(loss of appetite) | 4 | 7.30 |

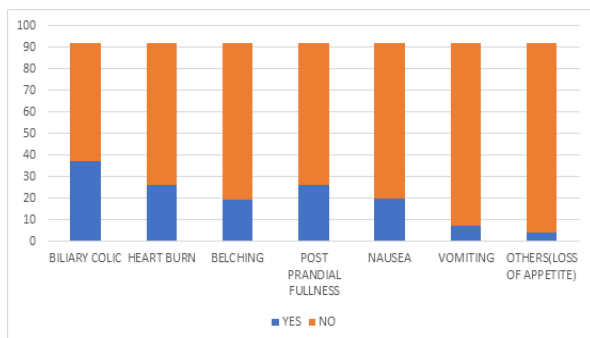


Figure 1: Bar diagram showing distribution of atypical symptoms.

Endoscopy findings:

Table 3: Distribution of endoscopy findings

| Endoscopy findings | Group I | Group II | Total |
|--------------------|---------|----------|-------|
| Positive | 18 | 42 | 60 |
| Negative | 19 | 13 | 32 |
| Total | 37 | 55 | 92 |

Table 4: Distribution of endoscopy findings

| | | N | Typical/Atypical | | Chi square | P value | | |
|------------------------------------|-----|----|------------------|------------|------------|---------|----------|------------------|
| | | | Typical | | | | Atypical | |
| | | | Count | Column N % | | | Count | Column N % |
| Endoscopy findings | No | 92 | 37 | 100.00% | 55 | 100.00% | . | . |
| Normal | No | 60 | 18 | 48.60% | 42 | 76.40% | 7.49 | 0.006 |
| | Yes | 32 | 19 | 51.40% | 13 | 23.60% | | |
| Esophagitis | No | 83 | 34 | 91.90% | 49 | 89.10% | 0.197 | 0.657 |
| | Yes | 9 | 3 | 8.10% | 6 | 10.90% | | |
| Hiatal hernia | No | 72 | 34 | 91.90% | 38 | 69.10% | 6.759 | 0.009 |
| | Yes | 20 | 3 | 8.10% | 17 | 30.90% | | |
| Gastritis | No | 65 | 28 | 75.70% | 37 | 67.30% | 0.753 | 0.385 |
| | Yes | 27 | 9 | 24.30% | 18 | 32.70% | | |
| Gastric ulcer | No | 87 | 36 | 97.30% | 51 | 92.70% | 0.899 | 0.343 |
| | Yes | 5 | 1 | 2.70% | 4 | 7.30% | | |
| Duodenitis | No | 87 | 35 | 94.60% | 52 | 94.50% | 0 | 0.992 |
| | Yes | 5 | 2 | 5.40% | 3 | 5.50% | | |
| Duodenal ulcer | No | 92 | 37 | 100.00% | 55 | 100.00% | . | . |
| Esophageal cancer | No | 92 | 37 | 100.00% | 55 | 100.00% | . | . |
| Gastric cancer (gastric polyp) | No | 92 | 37 | 100.00% | 55 | 100.00% | . | . |
| | No | 89 | 35 | 94.60% | 54 | 98.20% | 0.902 | 0.342 |
| | Yes | 3 | 2 | 5.40% | 1 | 1.80% | | |
| History of attack of cholecystitis | No | 44 | 9 | 24.30% | 35 | 63.60% | 13.7 | <0.001 |
| | Yes | 48 | 28 | 75.70% | 20 | 36.40% | | |
| Underwent cholecystectomy | No | 5 | 1 | 2.70% | 4 | 7.30% | 0.899 | 0.343 |
| | Yes | 87 | 36 | 97.30% | 51 | 92.70% | | |

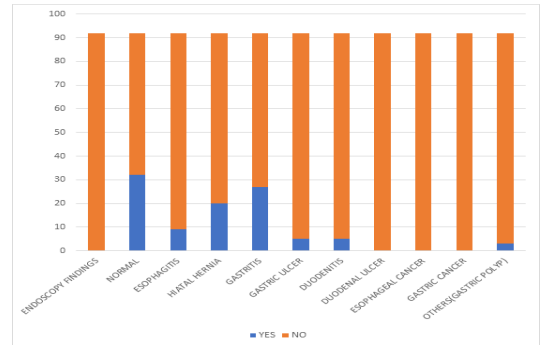


Figure 2: Bar diagram showing distribution of endoscopy findings

Table 5: Distribution of postoperative

| | | N | Typical/Atypical | | | |
|---------------------------|-----|----|------------------|------------|----------|------------|
| | | | Typical | | Atypical | |
| | | | Count | Column N % | Count | Column N % |
| Postoperative pain day 7 | NO | 51 | 23 | 63.88% | 28 | 54.90% |
| | YES | 36 | 13 | 36.12% | 23 | 45.10% |
| Postoperative pain day 14 | NO | 69 | 30 | 83.33% | 39 | 76.47% |
| | YES | 18 | 6 | 16.27% | 12 | 33.53% |
| Postoperative pain day 30 | NO | 82 | 34 | 94.44% | 48 | 94.11% |
| | YES | 5 | 2 | 5.56% | 3 | 5.89% |

Discussion:

An UGI endoscopy has been recommended in patients with nonspecific upper abdominal discomfort or persistent pain after laparoscopic cholecystectomy. Most of the patients presenting to general practitioners with chronic or colicky upper abdominal pain undergo ultrasound examination. With the ultrasound detection of

gallstones the main focus of the attending clinician stays around treating the gallstones and further investigations to rule out other pathologies that may produce similar symptoms are seldom considered¹⁰.

A proportion of patients experience similar pain after laparoscopic cholecystectomy. The cause of this pain may be gastritis, peptic ulcer disease, reflux oesophagitis, hiatus hernia or other diseases. These patients should first have been investigated to rule out gastro duodenal pathology before undergoing operation to remove gallstones. This approach will not only decrease persistence of symptoms but can also be helpful in early detection of gastro duodenal pathologies.

Karmacharya A et al, in his study, out of 96 patients, 53 (55.2%) presented with typical pain and 43 (44.8%) presented with atypical pain. All the patients were subjected to upper gastrointestinal endoscopy (UGE) and 53 (55.2%) had normal findings and 43 (44.8%) had various lesions. Serious pathology resulting to change of the planned treatment was found in three cases (3.12%)¹¹.

Sosada et al. recommend routine pan endoscopy for each patient who qualifies to undergo laparoscopic cholecystectomy. He suggested that in asymptomatic cholelithiasis, pain is because of a peptic ulcer. Out of 2800 treated for cholelithiasis, OGD which was performed 1–4 days prior to surgery, showing pathological changes in the stomach or duodenum in 1187(42%) patients; gastric ulcer in 179 (6.4%), duodenal ulcer in 127 (4.5%), gastritis in 375 (26.3%), polyps in 143 (5.1%) and cancer in 3 (1.1%) patients¹².

Schenk et al. suggested that because of the high incidence of simultaneous disease in the upper GI tract, preoperative OGD should be performed before elective surgical therapy of symptomatic cholelithiasis. In his study, 1064/1143 (93.1%) patients underwent OGD and 30.2% (345 patients) had pathological findings. Of these, 68.3% were inflammatory in nature¹³.

In our study, all patients have gall stones on ultrasound examination. All 92 patients underwent OGD. Out of 92 patients, who underwent OGD, 60 patients have positive findings and 32 patients have negative findings (p=0.006). Esophagitis was found in 3(8.10%) patients of typical group and 6(10.90%) patients of atypical group. Hiatal hernia was found in 3(8.10%) patients of typical group and 17 (30.90) patients of atypical group. Gastritis was found in 9(24.30%) patients of typical group and 18(32.70%) patients of atypical group. Gastric ulcer was found in 1(2.70%) patient of typical group and 4(7.30%) patients of atypical group. Duodenitis was found in 2(5.40%) patients of typical group and 3(5.50%) patients of atypical group. Others (gastric polyp) were found in 2(5.40%) patients of typical group and 1(1.80%) patient of atypical group.

Out of 92 patients, history of attack of cholecystitis was present in 48 patients, of which 28(75.70%) patients were in typical group and 20(36.40%) patients were in atypical group (p<0.001).

Out of 92 patients, 87 patients underwent cholecystectomy. Except 1(2.70%) in typical group and 4(7.30%) in atypical group.

Out of 87 patients who underwent cholecystectomy, 13(36.12%) patients of typical group and 23(45.10%) patients of atypical group had 7th day post-operative pain. 6(16.27%) patients of typical group and 12(33.53%) patients of atypical group had 14th day postoperative pain. 2(5.56%) patients of typical group and 3(5.89%) patients of atypical group had 30th day postoperative pain.

Out of 5 patients with gastric ulcer who didn't undergo cholecystectomy, 3 patients were found to be *Helicobacter pylori* positive and received treatment for the same. 2 patients underwent biopsy and diagnosed to have gastric carcinoma and underwent gastrectomy.

Conclusion:

In present study we observed that, out of 92 patients, 37 were in typical group and 55 were in atypical group. All 92 patients underwent endoscopy before cholecystectomy. Out of 37 patients in typical group, 18 (48.60%) have positive findings. Out of 55 patients in atypical group, 42(76.40%) have positive findings with gastritis being the most common finding in both groups. Out of 92 patients, 5 didn't undergo cholecystectomy and underwent different line of management. Patients were followed up postoperatively at day 7, 14 and 30. The reduction of pain was significant at day 30 with 2(5.56%) in typical group and 3(5.89%) in atypical group suffering with pain.

Cholelithiasis can present with a complex combination of clinical symptoms which may resemble the presentation of other gastrointestinal diseases. Hence, the use of routine preoperative investigations like upper GI endoscopy prior to planning surgical treatment of cholelithiasis may help to identify other potentially treatable medical conditions and hence may reduce overall cholecystectomy rates.

Besides its cost effectiveness, it may potentially help in reducing the incidence of postoperative persistence of symptoms. Thus upper gastrointestinal endoscopy has a vital role in the initial evaluation and investigation of patients with symptomatic gallstone patients and should be done in all relevant cases.

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