Original Research Article

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Oesophagogastroduodenoscopy in patients with incidental cholelithiasis, its significance and therapeutic value: an observational study

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ABSTRACT

Background: Cholelithiasis along with other causes of upper abdominal pain, have a similar mode of presentation. Often the cholelithiasis is an incidental finding not causative. Aims and objectives of this study was to determine the role of oesophagogastroduodenoscopy (OGDscopy) in patients presenting with upper abdominal pain and sonographically documented cholelithiasis being considered for cholecystectomy and to eliminate the confounding causes of pain and avoiding cholecystectomy in incidental cholelithiasis.

Methods: 200 patients with upper abdominal pain (typical/atypical) and sonographically documented gallstones underwent OGDscopy. Patients with normal OGDscopy underwent cholecystectomy while it was deferred in those with positive OGDs copy findings. These patients were appropriately managed and followed up with a repeat OGDscopy at 6 weeks. All patients were re-assessed for resolution of symptoms at 6 weeks and those with persistence of symptoms in spite of a normal OGDscopy on reassessment were then subjected to cholecystectomy. Pearson's chi-square test was applied to study association between type of pain (typical/atypical) and OGDscopy findings and type of pain (typical/atypical) and requirement for cholecystectomy.

Results: Of the 200 patients, 120 presented with typical and 80 with atypical pain. Among those with atypical pain (n = 80), a significant 95% (76/80) had positive findings on OGDscopy while none of those with typical pain had positive finding on OGDscopy (p<0.005). Cholecystectomy to relieve pain was needed in all 120 patients with typical pain while only 17.5% (14/80) of those with atypical pain required cholecystectomy (p<0.005).

Conclusions: The study shows that OGDscopy in patients with cholelithiasis can suggest alternative management plan particularly in those with atypical pain.

Keywords: Atypical pain, Cholecystectomy, Cholelithiasis, Oesophagogastroduodenoscopy

INTRODUCTION

Medical advice is frequently sought for upper abdominal pain. The site and nature of pain can often rule out the pathological conditions requiring immediate surgery, but multiple causes of pain may coexist, causing a diagnostic dilemma as to the exact etiology of the pain. The two common surgical causes of upper abdominal pain are gallstone disease and peptic ulcer disease. Gallstones are common biliary pathology with prevalence ranging from 10-17% in western population to 4% in India. India.

However, it has been observed that, on occasion the epigastric pain persists in spite of surgery (cholecystectomy), thereby warranting a renewed search for other causes of the pain.⁴

In a developing country as India with scarce resources requiring appropriate allocation of available resources and the increasing availability of ultrasonography (USG) as a diagnostic technique (increased diagnosis of cholelithiasis in the population, both causative and incidental for the pain in abdomen), routine use of

Oesophagogastroduodeno scopy (OGDscopy) can result in early detection of co-existing pathologies in a subset of patients with cholelithiasis. Atypical pain can serve as an indication for OGDscopy in patients with co-existing cholelithiasis with very high probability of finding an upper gastrointestinal mucosal pathology.

Several authors have advocated routine use of preoperative upper gastrointestinal endoscopy for patients undergoing chlolecystectomy. They observed that unrecognized gastric and duodenal peptic ulcer was a common cause of epigastric pains for patients with cholelithiasis qualified for laparoscopic cholecystectomy. Undiagnosed gastric or duodenal ulcer may be the cause of persistent pains after cholecystectomy. OGDscopy can prevent the need for cholecystectomy in patients with positive mucosal pathologies and thus avoid persistence of symptoms post cholecystectomy and also avoid complications of cholecystectomy. Patients with atypical pain may routinely be subjected to OGDscopy to actively look for confounding causes of pain.

Our study aims to incorporate OGDscopy as a method to rule out confounding causes of pain and restricting cholecystectomy to those patients with symptomatic and not incidental cholelithiasis. We aimed to identify the role of OGDscopy prior to cholecystectomy for asymptomatic/incidental cholelithiasis, to rule out other causes of upper abdominal pain and to restrict cholecystectomy as treatment for symptomatic cholelithiasis and avoid post cholecystectomy complications.

METHODS

Study was conducted at B. Y. L. Nair Charitable Hospital, Mumbai, India over a period of three and a half years from November 2012 to May 2016, 200 patients with upper abdominal pain with USG documented gallstones were included. The approval of the institutional ethics committee was taken and a written informed consent was taken from all the patients in the study. All these patients were subjected to OGDscopy. A follow up of these patients was maintained over the next 6 weeks.

Aims and objectives of this study were to determine the role of oesophagogastroduodenoscopy (OGDscopy) in patients presenting with upper abdominal pain and sonographically documented cholelithiasis being considered for cholecystectomy and to eliminate the confounding causes of pain and avoiding cholecystectomy in incidental cholelithiasis.

Patients included in the study were above the age of 18 years, presenting with upper abdominal pain (typical for cholelithiasis/atypical) and having USG features of uncomplicated gall bladder calculi. Patients below the age of 18 years, having USG features of complications of gall bladder pathology (e.g. perforated gall bladder),

choledocholithiasis, other gall bladder pathologies like polyps, those having concurrent hepato-biliary pathology with suspicious/risk for malignancy, porcelain gallbladder, patients with large >3 cm stones, transplant patients and patients with chronic hemolytic conditions were excluded from the study.⁵

Pain was evaluated for localization, radiation, severity, intensity alleviating and aggravating factors. The USG findings, endoscopic findings, and histopathology of the patients with gastric/duodenal biopsies findings were evaluated to decide a treatment plan for the patients.

Typical pain of cholelithiasis has been described as pain in epigastrium, right hypochondrium radiating to right scapula and back, recurrent sudden onset, rapidly increasing in severity commonly after a fatty meal, which plateaus off after steadily progressing for an hour. It then gradually declines over the next several hours. The pain is unrelated to bowel movements and urination. Any pain not fitting the above criteria was defined as atypical pain.

OGDscopy was performed with an Olympus GIF, type 150 gastroduodenoscope. Biopsies were taken from the antrum and body of the stomach. Apart from the specific ulcers and masses seen on OGDscopy. The biopsy were subjected to evaluation by H and E method which is cost effective, easy to perform, reproducible and easily available for the detection of *H. pylori* with a sensitivity of 93% and specificity of 87%. 8

It also allowed the evaluation for other concurrent mucosal pathologies like malignancy. The patients having normal OGDscopy finding underwent routine elective cholecystectomy as planned. Cholecystectomy was not performed for the patients with positive OGDscopy findings (mild antral gastritis excluded) and these patients were subjected to medical/ alternate surgical treatment based on their histopathological reports. Anti H pylori regime was started for those patients with H pylori on biopsy for duration of 2 weeks.

The rest of the patients with atypical pain were treated with proton pump inhibitors for 4 weeks. These patients were re-evaluated with OGDscopy after 6 weeks to look for resolution of symptoms and OGDscopy findings. The patients with persistence of symptoms inspite of adequate medical treatment and no evidence of new pathologies on repeat OGDscopy were now posted for cholecystectomy.

Statistical analysis was done with the help of SPSS Software version 15 and Sigmaplot Version 11. Quantitative data was presented with the help of mean, standard deviation, and median. Qualitative data was presented with the help of Frequency and Percentage table. Association among study group was assessed with the help of Chi-Square test. The level of significance is considered as p <0.05.

RESULTS

Of the 200 patients evaluated for this study 120 (60%) presented with typical pain whiles the remaining 80 (40%) complained of pain of the atypical nature. Out of the 200 patients subjected to OGDscopy, 38 had significant findings (Table 1). Cholecystectomy was deferred for the patients with positive OGDscopy findings and plan of management was based on the histopathology reports of the biopsies taken from the antrum, body routinely and specific ulcers when observed on OGDscopy. Histopathology of the biopsied mucosa in patients with positive OGDscopy findings were obtained (Table 2). The biopsy for *H. pylori* came positive in 60 (treated with anti H. pylori regimen) of the cases and negative in the remaining 12 (treated with a regimen of proton pump inhibitors). Routine observation was planned for the patient with Barrett's esophagus while one patient with carcinoma stomach was operated upon at the earliest.

Table 1: Gross OGDscopy findings and their distribution.

OGD scopy findings	Frequency	Percentage
Normal	124	62
Antral gastritis	40	20
Pangastritis	16	8
Duodenal ulcer	12	6
Gastric ulcer	6	3
Barretts oesophagus	2	1

Table 2: Distribution of the histopathology reports of the mucosal biopsies taken on OGDscopy.

Mucosa	Frequency	Percentage
Normal	124	62
Gastritis	72	36
Barretts oesophagus	2	1
Carcinoma stomach	2	1

Of the 200 patients in our study 190 were symptom free at the end of 6 weeks. This included 124 patients who were operated upon initially (120 with typical pain and normal OGDscopy and 4 with atypical pain but normal OGDscopy and biopsy initially) while the remaining 66 were the patients receiving medical line of management in view of the OGDscopy findings. Thereafter the remaining 10 patients with persistence of symptoms clinically but with normal OGDscopy on reassessment at 6 weeks were now operated upon (cholecystectomy) as the pain now was attributed to the gallstones.

Of the 76 patients with positive findings on previous OGDscopy, repeat OGDscopy was performed for 74 patients, 2 having been operated for carcinoma stomach with successful immediate post-operative period.

Of the patients who underwent repeat scopies after 6 weeks, 62 were symptom free and hence the pain was attributed to the co-existence of stomach/duodenal mucosal pathology. Thus cholecystectomy was avoided in this subset of patients. However 10 patients had persistent symptoms with a normal follow OGDscopy and hence the pain was attributed to the gall bladder calculi. These patients were subjected to a post reassessment cholecystectomy.

Of the 80 patients with atypical pain positive findings were found in 76 patients on OGDscopy while in the 120 patients with typical pain positive findings were not found in any of the patients. Applying the Pearson's Chi Square test, p-value was less than 0.05 and hence significant. Of the 120 patients with typical pain all underwent cholecystectomy, while among 80 patients with atypical pain only 14 were subjected to cholecystectomy. On applying the Pearson's Chi-Square test p-value of less than 0.005 gave a significant association between the two.

DISCUSSION

Endoscopic abnormalities detectable on upper OGDScopy can co-exist with gall bladder calculi in upto 44 % of the patients with gallstones. 9,10 However there exists a common constellation of symptoms common to stomach/duodenal mucosal pathologies and gall stones, which can make it difficult to decide the primary symptomatic pathology. The attribution of the upper gastrointestinal symptoms to findings of OGDscopies can help prevent cholecystectomies performed for asymptomatic or incidental gallstones and the chance of persistence of symptoms even after cholecystectomies.

In our study OGDscopies were found to yield positive finding in 38% of patients with gastritis, gastric ulcer and duodenal ulcers forming the bulk of the findings. In the absence of OGDscopy the finding of gastric and duodenal pathologies would have been missed leading to persistence of symptoms even after cholecystectomy.

The repeat OGDscopies performed at 6 weeks interval help reassess the effectiveness of the medical line of management that has been advocated to the patients with positive OGDscopy findings on the first scopy.

In our study at 6 weeks of reassessment of the 80 patients with previous positive OGDscopy findings 72 were now found to have normal OGDscopy findings. Thus it was safely concluded that the symptoms of the patient were predominantly due to the upper gastrointestinal mucosal pathology and not due to gall stones primarily. Similarly 10 patients had persistence of symptoms in spite of the adequate medical line of management, and hence subjected to cholecystectomy. Hence cholecystectomy was avoided in 33% of the patients.

Our study showed that of the 200 patients presenting with ultrasonography documented gall bladder calculi 60 percent had typical pain while 40 percent had atypical pain. Of the 40 percent with atypical pain 36 were found to have positive OGDscopy findings as against none among the 60 percent with typical pain. This statistically significant difference leads us to believe that presence of atypical symptoms can be due to co-existing upper gastrointestinal mucosal pathologies and thus the pathology can adequately diagnosed on OGDscopy be safely targeted with therapy, reassessed and the need for cholecystectomy re-evaluated. In a similar study by Mozafar et al involving 360 patients, 178 patients (49.4 %) experienced atypical abdominal pain, the other 182 patients (50.6 %) presented with typical abdominal pain. From those with typical pattern of pain, only one had positive findings in OGD (0.54 %) while among the 178 patients with atypical pain, 148 (83 %) had abnormal findings in OGD (p <0.001). 11 In another such study by Rassek et al, of the 589 patients who underwent gastroscopy prior to cholecystectomy, although 56% had normal gastroscopy, 11.3 % (113 patients) underwent a change in plan of therapy because of the OGD findings. 12 Schenk et al also recommended prior OGDscopy in patients being considered for elective surgical therapy of symptomatic cholelithiasis. This was based on their observation of 1064 patients who underwent preoperative OGDscopy prior to cholecystectomy, of which 30.2% were detected to have pathologic findings. 13

Azawi A et al. found that esophagogastroduodenoscopy prior to laparoscopic cholecystectomy does not have an impact on postoperative residual abdominal pain; however, it can disclose other gastroesophageal disorders with similar symptoms to gallstones and may change the course of the planned surgery in chronic cholecystitis. 14

OGDscopy also provides an opportunity to diagnose *H. pylori* infection and targeted treatment for the same. The patients with gastritis with biopsy negative for *H.pylori* can be treated with proton pump inhibitors. It also provides an opportunity to detect early signs of malignancy. In our study 2 patients was found to have Barretts esophagus and two with histopathology proven gastric carcinoma detected at an early stage and amenable to curative surgery. *H. pylori* were found to be positive in 30% of the patients and after a 2 week course of targeted therapy the symptoms resolved in all the patients. Previous studies report very wide prevalence rates varying from 31.6% to 86.34%. ¹⁵⁻¹⁸ This may be likely due to population studied and technique employed for detection of *H. Pylori*.

CONCLUSION

Routine use of OGDscopy can result in early detection of co-existing pathologies in a subset of patients with cholelithiasis and prevent the need for cholecystectomy in patients with positive mucosal pathologies and thus avoid persistence of symptoms post cholecystectomy.

Atypical pain can serve as an indication for OGDscopy in patients with co-existing cholelithiasis with very high probability of finding an upper gastrointestinal mucosal pathology.

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