

Original Research Article

Evaluation of persistent upper abdominal pain by upper gastrointestinal endoscopy

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ABSTRACT

Background: The upper gastrointestinal tract is affected by a spectrum of conditions which span from infectious, idiopathic, inflammatory diseases, polyps, motility disorders and malignancy. Upper gastrointestinal scopy is believed to be the most effective screening modality as it not only allows direct visualization of oesophagus, gastric and duodenal mucosa but to perform biopsies in suspected malignancies. Aim: To evaluate persistent upper abdominal pain by upper gastrointestinal scopy.

Methods: A total of 100 patients presented with complains of persistent upper abdominal pain were subjected to upper gastrointestinal scopy. Biopsies in indicated cases were taken from abnormal areas and sent for histopathology.

Results: Most common finding in patients according to upper gastrointestinal scopy was gastritis (27%), followed by duodenitis (9%), and gastroduodenitis (7%). Rapid urease test in cases of gastritis and duodenitis to determine *H. pylori* infection were positive in 53.8% cases.

Conclusions: Because of its precision and relatively safe technique upper GI endoscopy can be considered in patients above age of 50 years presenting to surgical OPD with complaints of persistent pain in upper abdomen. Investigating helicobacter pylori should be considered in all patients found to have gastric or duodenal lesions on upper GI endoscopy as its association with these lesions ranges from 50 to 80%.

Keywords: Gastritis, *H. pylori*, Upper gastrointestinal scopy

INTRODUCTION

Upper abdominal pain can be a challenging complaint for both primary care and specialist physicians because it is frequently a benign complaint, but it can also herald serious acute pathology. Abdominal pain is present on questioning of 75 percent of otherwise healthy adolescents and in about half of all adults.

Persistent abdominal pain is the main symptom of majority of chronic abdominal conditions. Even though the duration, site, radiation, its character and the relieving factors may point towards the underlying pathology, the evaluation of persistent abdominal pain and its

management has been challenging to physicians and surgeons. Majority of the conditions causing persistent abdominal pain to arise from oesophagus (cardiac sphincter), stomach and small intestine.

Upper gastrointestinal (GI) endoscopy is usually performed to evaluate symptoms of persistent upper abdominal pain, nausea, vomiting and dysphagia upper GI endoscopy is more accurate for detecting inflammation, ulcers or tumours of oesophagus, stomach and duodenum. Endoscopy is the procedure of choice for the diagnostic evaluation of upper gastrointestinal tract (UGI) tract because of its ease, reliability, diagnostic superiority and the ability it gives the endoscopist to

perform biopsies and therapeutic interventions. Hence the need for study of evaluation of persistent upper abdominal pain by upper GI endoscopy.

Flexible endoscopy is more sensitive than conventional radiology in the assessment of majority of gastroduodenal conditions. This is particularly the case with peptic ulceration, gastritis and duodenitis.¹

The American Society of Gastro-intestinal Endoscopy (ASGE) have guidelines regarding the upper GI endoscopy. UGI endoscopy is more accurate than radiology in detecting inflammations, ulcers or tumors of the UGI tract. A variety of instruments can also be passed through the endoscope that allows many abnormalities to be treated directly with little or no discomfort.

METHODS

Type of study was cross-Sectional study. Study was conducted on the patients in the Department of General Surgery at Dr. D.Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune, India. Sample size was 100. Period of study was March 2019 to September 2019.

Ethics and consent

Approval is taken from the Institutional Ethical Committee before commencing the study. Written and Informed Consent shall be obtained from all patients. The patients will be informed regarding the purpose, procedures, risks and benefits of the study. Case report forms and data is maintained for each patient.

Inclusion criteria

Patients of all age groups complaints of persistent upper abdominal pain, patients with history of pain abdomen more than 4 weeks and patients of both genders were included.

Exclusion criteria

Patients pain abdomen confirmed by other investigations (e.g. USG) to have pathologies in other organic systems e.g. renal/ureteric calculus and patients with acute on chronic abdominal pain were excluded.

Cost of investigation was primarily upper gastro-intestinal endoscopy is done free of cost in Dr. D. Y. Patil medical college and hospital, patient undergoing the study would not be charged anything for it. Additional investigations like CT scan, MRI and USG are also provided free of cost for admitted patients

Method of collection of data

Data was collected from a specially designed proforma, case recording proforma (CRF) pertaining to patient’s particulars, proper history, clinical examinations, investigations,

diagnosis. It is then subjected to statistical analysis with the help of biostatistician of institute. All the procedures and investigations will be conducted under direct guidance and supervision of guide. Before start of this study a written/informed consent will be obtained in local vernacular in each patient. The study requires following investigation to be conducted on patients.

All the patients underwent routine investigations such as hemoglobin, urine, fasting blood sugar, blood urea, serum creatinine, total leucocyte count, differential count, INR, BT/CT, HIV testing, Anti-HbsAg, erect X-ray abdomen, USG abdomen and/or CT scan abdomen and upper GI endoscopy and biopsies wherever required.

Among the above-mentioned investigation UGI endoscopy will be the principal procedure. All cases will undergo elective upper gastrointestinal endoscopy. Endoscopy would be done with aseptic measures and xylocaine test dose would be given. Patient would be kept nil per oral for 4 hrs. Patient would be given single dose of tablet domperidone and injection buscopan intramuscular stat.

RESULTS

A hospital based observational study was conducted at Department of of Surgery, Dr. D.Y. Patil Medical College, Hospital and Research Centre, Pimpri, Pune. The aim of the study was to evaluate persistent upper abdominal pain by upper gastrointestinal endoscopy at institute and to evaluate its diagnostic and therapeutic utility for pathologies of large intestine. A total of 100 patients requiring upper GI scopy were included in the study. Following observations were made during the study.

Male predominance was seen in present study with 73% males to 27% females (Table 1).

Table 1: Distribution of patients according to sex.

Sex	No. of patients	Percentage (%)
Male	73	73
Female	27	27

Mean age of the study cases was 44.72 years with 38% of the cases were above 50 years of age (Figure 1).

In this study 53 cases who underwent upper GI scopy came with chief complains of abdominal pain, followed by nausea/vomiting (18) (Figure 2).

Average duration of symptoms 7.3 months, with 73% of patients undergoing upper GI scopy with duration of symptoms between 4 to 8 months (Table 2). Most common finding in patients according to upper GI scopy was gastritis (27%), followed by duodentitis (9%), carcinoma stomach (9%) and gastroduodenitis (7%). Normal study was observed in 22% of patients (Table 3).

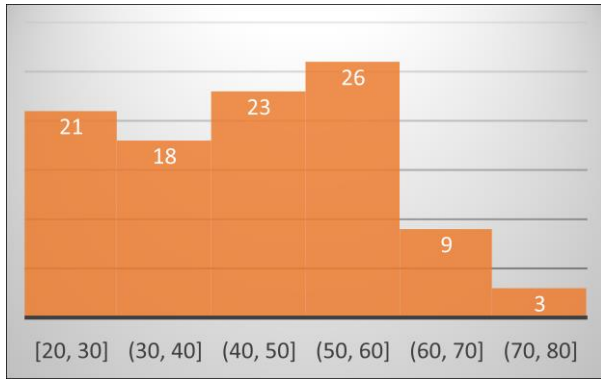


Figure 1: Distribution of patients according to age.

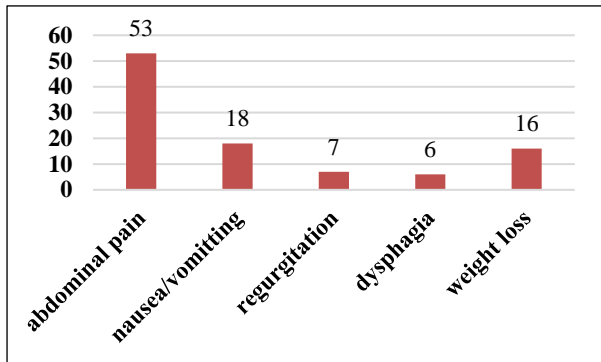


Figure 2: Distribution of cases according to presenting complaints.

Table 2: Distribution of patients according to duration of symptoms.

Duration (in months)	No. of patients	Percentage (%)
4-6	49	49
6-8	24	24
8-10	16	16
10-12	6	6
12-14	0	0
14-16	4	4
16-18	1	1

Table 4: Distribution of benign and malignant lesions of upper GI tract.

Type of lesion	Esophagus	Stomach	Duodenum	Total	Percentage (%)
Benign	12	41	11	64	82.05
Malignant	4	9	1	14	17.94
Total	16	50	12	78	

These patients were started on β - blockers propranolol (Inderal 10mg twice daily). 2 underwent endoscopic polypectomy for diagnosed endoscopic polypectomy in the same sitting. The polyps were sent for histopathological examinations, which revealed it to be benign adenomatous polyps.

Table 3: Distribution of patients according to upper GI scopy findings.

Findings	No. of patients	Percentage (%)
Gastritis	27	27
Gastroduodenitis	7	7
Duodenitis	9	9
Gastric ulcer	5	5
Duodenal ulcer	2	2
Gastric polyp	2	2
Esophageal varices	3	3
Hiatus hernia	7	7
Esophageal stricture	2	2
Normal study	22	22
Ca esophagus	4	4
Ca stomach	9	9
Ca duodenum	1	1

Of 100 cases studied 14 were diagnosed malignant lesions on upper gastrointestinal scopy, of 14 cases studied, 9 were carcinoma stomach, 4 carcinoma esophagus, and 1 carcinoma duodenum. 64 were benign lesions on upper GI scopy (Table 4).

Of 39 cases who underwent rapid urease test in cases of gastritis and duodenitis to determine *H. pylori* infection, 21 were positive to rapid urease test (Table 5).

Of 100 patients who underwent upper GI scopy 73% were conservatively managed. 11% underwent surgical interventions. 9% were started on palliative/adjunct chemo/radiotherapy. 7% underwent endoscopic management (Figure 3).

Of 7 patients who underwent endoscopic management, 2 underwent esophageal dilatation for diagnosed esophageal stricture. 3 patients who had esophageal varices underwent endoscopic esophageal banding on a later date.

Of 11 patients who required surgical management after upper gastrointestinal endoscopic findings, 6 were diagnosed to have hiatus hernia, 4 underwent laparoscopic neissen's fundoplication. 2 underwent laparoscopic Toupey's fundoplication. 4 carcinoma stomach which were resectable, underwent total gastrectomy. Specimen was sent for histopathological examination, resected

specimen margins were free of tumour, following surgery these patients were advised adjuvant chemotherapy.

Table 5: Rapid urease test.

Response	N
Positive	21
Negative	18

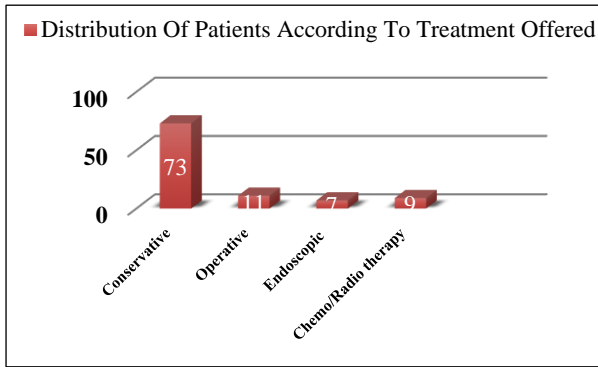


Figure 3: Distribution of patients according to treatment offered.

No iatrogenic upper gastrointestinal bleeding or perforation was encountered.

Of 16 cases with history of weight loss, 14 (87.5%) had malignant growth, 2 (12.5%) had benign esophageal stricture (Table 6).

Table 6: Finding in cases of weight loss.

Finding in cases of weight loss	N	%
Malignant growth	14	87.5
Benign stricture	2	12.5
Total	16	100

DISCUSSION

Upper GI scopy is considered procedure of choice for diagnostic evaluation of pathologies (inflammation, ulcers, tumours) of esophagus, stomach and duodenum. It is because of ease, reliability, and ability to take biopsies and perform therapeutic interventions.

100 cases who fulfilled the inclusion criteria were subjected to upper GI scopy. A cross sectional study was done in Dr. D.Y. Patil Medical College and research centre, Pimpri, Pune, by Department of General Surgery from May 2017 to October 2019.

Demography

In this study majority of cases who underwent Upper GI scopy belong to age 51 and above (38%), with mean age

of 44.72 years. 26% of the cases belong to age group of 51-60 years.

Male predominance was seen in this study, male comprised of 73% and female 27% cases. A similar study conducted by Javali et al role of endoscopy in evaluating upper gastrointestinal tract lesions in rural population.² Male predominance was seen 61.6%. Majority of cases were in 61 and above.

A study conducted by Ainapure et al a clinico-endoscopic study of upper GI disorders in rural population.³ Male predominance was seen 67.66% and majority of cases belonged to age group of 31-50 years.

Similar study done by Chandial et al role of endoscopy in evaluating upper gastrointestinal tract lesions at a tertiary care hospital.⁴ Male comprised of 55.99% cases. Cases were predominantly between age group of 41-50 years (24.9%).

In a study done by Kunar et al role of upper GI endoscopy in the management of benign and malignant condition of stomach.⁵ Male consisted 62% of cases and female 38%. Maximum number of cases belong to the age group of 61 years and above (25%) with 44.33% cases were above age of 51 years.

Demographic results of this study are comparable to studies aforementioned. Difference in the age group dominance can be explained by geographical, cultural, ethnic diversity.

Presenting complains

In this study 53% cases who underwent upper GI scopy came with chief complaints of abdominal pain, followed by nausea/vomiting 18%.

In a study done by Ainapure et al, a clinico-endoscopic study of upper GI disorders in rural population, epigastric pain (49.68%) was the most common presentation followed by dysphagia (14.9%).³

In a study done by Ray et al, trends in endodiagnosis of upper gastrointestinal diseases at a referral railway hospital, most of the patients who underwent upper GI scopy presented with abdominal pain followed by vomiting.⁶

Results of this study regarding presenting complains are comparable to studies of that of Ainapure et al and Ray et al.

Upper GI scopy findings

Gastritis

In this study, most of the patients on upper GI scopy were of chronic gastritis and diffuse gastritis. The incidence of

gastritis in this study is 27%. Incidence of gastritis is predominantly seen in age group of 40 years and above. This can be explained because of heavy alcohol consumption and smoking in the labourer group of people of this area. Alcohol and smoking lower the pyloric pressure. Lower pyloric pressure leads to bile reflux. This bile reflux causes damage to gastric mucosal barrier.

In study done by Javali et al the incidence of gastritis was 26.13%.² Similar study done by Chandial et al, the incidence of gastritis was 21.7%.⁴

In a similar study done by Kunar et al the incidence of gastritis was 30%.⁵ Incidence of gastritis in this study are comparable to study done by Javali et al, Chandial et al and Kunar et al.

Gastric ulcer

Incidence of gastric ulcer in this study was about 1%. A study conducted by Ainapure et al 9.31% of cases were diagnosed to have gastric ulcer.³ Similar study done by Chandial et al the incidence of gastric ulcer was 2.6%.⁴ In a similar study done by Kunar et al the incidence of gastric ulcer was 1.8%.⁵ Low incidence of gastric ulcer in this study compared to that of Ainapure et al (9.31%) can be explained by the widespread use of proton pump inhibitors in the local population, which are prescribed with other drugs (NSAID's and antiplatelet agents). Easy access of proton pump inhibitors over the counter could explain the decline in incidence of gastric ulcer.

Malignant lesions

Incidence of gastric carcinoma in present study was found to be 9%. Prevalence of antral gastric carcinoma was more than that of carcinomatous growth in body and fundus of stomach.

Of 9% of cases who on upper GI scopy findings were suspected to have carcinoma stomach, multiple punch biopsies were taken from the growth, biopsies were sent for histopathological examination.

Biopsy report of all 9% cases were reported as adenocarcinoma of stomach. These cases were further investigated. 5 cases had metastatic disease were advised palliative chemotherapy. 4 cases who were operable underwent total gastrectomy.

In a study performed by Kunar et al, 7.5% of cases had upper GI scopy findings of carcinoma stomach.⁵

The Database Kidwai Memorial Institute of Oncology (KMIO) 2004-2005, Bangalore, State of Karnataka incidence rate of gastric cancer is 9%. The maximum patient in the age group of 51-70 years with an average age of 58.5 years, equivalent to 56 as quoted by the Tata Memorial Hospital and 53, quoted by the Najibullah.⁵

The results of this study are comparable to that of Kunar et al and that of KMIO 2004-2005, Bangalore, State of Karnataka.

Incidence of carcinoma esophagus was 4% in this study. 2 cases had growth in middle 1/3 of esophagus and other 2 had growth in lower 1/3 esophagus. Scope could not be negotiated beyond the growth in all 4 cases. Punch biopsies were taken and were sent for histopathological examination. Biopsies taken from growth at mid esophagus were reported as Squamous cell carcinoma of esophagus, whereas biopsies from growth at lower esophagus were reported as adenocarcinoma of esophagus. These cases were further investigated with radiological investigations.

One case of adenocarcinoma of lower esophagus underwent transhiatal esophagectomy. 3 cases were started on chemotherapy. A similar study conducted by Javali et al carcinoma esophagus was seen in 4.5% of cases.³ Data base of KMIO, Bangalore had incidence of carcinoma esophagus was 6.6%. Results of this study are comparable to that of by Javali et al.²

Normal studies

In this study, of 100 cases who underwent upper GI scopy, 22 cases had no abnormal findings, and had normal upper GI scopy findings. Incidence of normal study is 22%.

In a study done by Javali et al, 14.5% of cases had normal study on UGIE.²

In a study done by Ainapure et al, incidence of normal study was 17.39%.³ In a study performed by Kunar et al. 19.2% of cases had normal upper GI scopy findings.⁵

Higher incidence of normal findings in this study as compared to that of Javali et al (14.5%) and Ainapure et al (17.39%) is mainly because of easy availability of the procedure, increased medical care, and awareness of health among the population.

The incidence of upper GI lesions namely gastroduodenitis and gastric polyp were 7% and 2% respectively. Authors had two cases of stricture esophagus.

No cases of perforation or bleeding was recorded among 100 studied cases. Thus, in present study, no complications were seen during upper GI scopy procedure.

The incidence of complications mainly perforation, in international literature is about 0.5% among upper GI scopy procedures.⁵

This study has shown that *H. pylori* association is significantly high in gastric and duodenal lesions. In this

study 21 out of 39 cases of gastric and duodenal lesions were positive for rapid urease test. That is 53.84%. This is consistent with findings of other research studies done by John et al prevalence of *H. pylori* in peptic ulcer perforation. In study by John et al prevalence was 58.36%.⁷

Thus, to summarize, upper GI scopy is a very safe procedure and has high diagnostic yield. So, it should be considered as the investigation of choice in wide spectrum of pathologies which span from infectious, idiopathic, inflammatory diseases, polyps, motility disorders and esophago-gastric tumors. upper GI scopy also has a therapeutic value which prevents many patients from the pain of undergoing extensive surgeries.

CONCLUSION

Because of its precision and relatively safe technique upper GI endoscopy can be considered in patients above age of 50 years presenting to surgical OPD with complaints of persistent pain in upper abdomen. It not only helps in diagnosing the pathology but also provides an opportunity to do therapeutic interventions. It also helps to delineate the extent of pathology. Investigating helicobacter pylori should be considered in all patients found to have gastric or duodenal lesions on upper GI endoscopy as its association with these lesions ranges from 50 to 80%. Subjecting patients early to endoscopic study many a times helps to detect the malignancies in early stages and has a significant positive impact on their treatment.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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