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## Diagnostic role of endoscopy in upper gastrointestinal diseases

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### Abstract

**Aim:** to understand the full capabilities of endoscopy particularly from the point of view of the general surgeon, with an interest in gastroenterology.

**Material and method:** The patients were given topical 4% lignocaine gargles 15 mins before the procedure. They were given I.V. injection Diazepam 2.5 to 5 mg just prior to introduction of the scope. The I.V. sedation was always kept minimal and altogether omitted in frail, elderly and moribund patients. The pulse, respiration and consciousness were constantly monitored during the procedure and 1/2 hour after the procedure I.V. injection Buscopan 10 mg was given to decrease the gastric and duodenal motility.

**Result:** The incidence of upper gastrointestinal symptoms was maximum in the age group between 51-60 years. It is observed that 67.5% of patients had definite upper G.I. pathology. It is observed that epigastric pain/upper abdominal discomfort was the commonest symptom (20.5%). More than one symptom was seen in 34.5% of cases.

**Conclusion:** Thus the endoscopic examination of the upper gastrointestinal tract is diagnostic with a very few limitations, contraindications and a negligible morbidity and mortality. Clinical examination and endoscopy help in planning the mode of investigation and operative intervention which is most suitable for the patient. It is a valuable asset to the surgeon for the diagnosis of various upper gastrointestinal tract diseases.

**Keywords:** Endoscopy, upper gastrointestinal diseases

### Introduction

The endoscopist and industry are working hand in hand to give us fascinating gadgets to learn, investigate and apply to the benefit of our patients. As endoscopy itself is being transformed from the first fibroscope to the modern CCD Videoendoscope of the 1990's has its influence on how gastroenterology is practiced, taught and perceived<sup>[1, 2]</sup>.

The application of upper GI endoscopy has spanned from adults to the pediatric age group. The indications are being enlarged, complications are being reduced, the concepts of management are being changed. In open access endoscopy, the implications of rapid and easy access to endoscopy evaluation is being studied for diagnosis of common but disturbing disorders like dyspepsia<sup>[3]</sup>.

Identification of candidates likely to bleed from an esophageal varix which helps to initiate therapy has considerably changed the influence of portal hypertension management. Endoscopy has also made the poor surgical risk patients of active hematemesis amenable to therapy<sup>[4]</sup>.

The purpose of this study is to understand the full capabilities of endoscopy particularly from the point of view of the general surgeon, with an interest in gastroenterology.

### Material and method

This study was conducted in Krishna hospital and medical research centre, Karad and 200 patients were examined endoscopically between May 2009 to May 2011. Registration of patients in the endoscopy clinic was according to the open access method. Cases were screened in our surgical OPD's and appointments were given for endoscopy. Similarly referrals from other surgical and medicine units were screened but by and large all were given appointments. A basic proforma was filled for each patient and collected for record keeping. Patients were screened for hepatitis B antigenemia and HIV. Patients were also screened for active tuberculosis initially by taking a chest x-ray. This was done to reduce the possibility of patient to patient transfer of microorganisms. We called our patients NBM from 10 pm the previous night.

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The patients were given topical 4% lignocaine gargles 15 mins before the procedure. They were given I.V. injection Diazepam 2.5 to 5 mg just prior to introduction of the scope. The I.V. sedation was always kept minimal and altogether omitted in frail, elderly and moribund patients. The pulse, respiration and consciousness were constantly monitored during the procedure and 1/2 hour after the procedure I.V. injection Buscopan 10 mg was given to decrease the gastric and duodenal motility.

Upper GIT endoscopy was done according to the procedure of P.B. cotton as given in practical gastrointestinal endoscopy (1990)/ The patient was made to sleep in the left lateral position and a mouth gag placed in the mouth. The scope was passed through the oropharynx and nudged through the cricopharynx under vision with the voluntary swallowing movement of the patient. The scope was rapidly passed through the

oesophagus during a rough screening and leaving the detailed mucosal examination to be done during swallowing.

On entering the stomach the scope was passed along the lesser curvature towards the pylorus catching the right moment in between two peristaltic waves and the scope was negotiated through the duodenum. The duodenum was inflated with air and the bulb scrutinized by with dressing upto the pyloric ridge and doing the upward, downward and tide to tide movements. The second part was observed by peeping into it from above.

The pylorus was screened in detail during with dral and so with the stomach. On returning into the stomach the J manoeuvre was done and the greater curvature, fundus and cardia screened till the scope was seen coming out of the cardio esophageal junction. The scope was then with drawn into the oesophagus and the lower end of oesophagus examined mecosal abnormalities were examined during withdrawal of the scope.

In practice, provided that the equipment is properly cleaned first, a 2-4 min soak in a disinfectant equipment to 2% glutaraldehyde will virtually eliminate all vegetative organisms and viruses other than spores and mycobacteria. However, the disinfection process lasts 5 min to protect healthy patients from cross infection, 5-10 mins for the immunocompromised. Hence a 10 min soak is considered adequate. The following cleaning steps were employed. Manual cleaning- on removal from patient flush the air / water channel for 10-15 sec to eject any refluxed blood or mucus. Aspirate detergent

through biopsy/ suction channel for 10-15 sec. External cleaning - Immerse the instrument in warm water and detergent wash outside with sponges, clean biopsy channel opening and suction port using a cotton bud. 70 Internal cleaning- Flushing each channel with detergent fluid followed by compressed air. Compressed air is meant to expel out all the water and dry the ports. Disinfection – The endoscope and all the internal channels were soaked in 2% glutaraldehyde for 5-10 mins. Then the instrument was rinsed with clear water to remove tracts for disinfectant. Drying was done by using compressed air which assists in reducing bacterial colonization.

## Results

In the present study, 200 cases of upper abdominal discomfort were studied from May 2009 to May 2011. The study includes patients from outpatient department, which includes referrals from doctors in the periphery and indoor patients admitted in the hospital.

**Table 1:** Showing distribution of cases

Department	No. of cases	Percentage
OPD	130	65
IPD	70	35
Total	200	100

In this series the youngest patient to undergo endoscopy was 10 years and the oldest patient was 87 years of age. The incidence of upper gastrointestinal symptoms was maximum in the age group between 51-60 years. It is observed that 67.5% of patients had definite upper G.I. pathology. It is observed that epigastric pain/upper abdominal discomfort was the commonest symptom (20.5%). More than one symptom was seen in 34.5% of cases. It is clear that the incidence of lesions on endoscopy was the highest in the stomach and esophagus and more than one anatomical site was affected in 25.18% of cases. It is observed that varices, acute gastric mucosal lesions and duodenal ulcer are the common causes of upper gastrointestinal bleeding. In one case the cause of bleeding could not be detected.

## Discussion

We subjected 200 patients of upper abdominal discomfort to upper gastrointestinal endoscopy. The patients presented with symptoms of hyperacidity (heartburn, retrosternal burning, waterbrash), dysphagia epigastric pain, upper abdominal discomfort, hematemesis and melena, and persistence of symptoms after surgery. Clinical examination of the patient was done along with appropriate investigations before we subjected the patients to endoscopy [5]. Majority of patients presented with more than one symptom pertaining to the upper gastrointestinal tract and acid peptic disease was the most common clinical diagnosis [6].

Our study of 200 patients, 130 patients (65%) were from the outpatient department and 70 patients (35%) were indoor patients. In this study a Fujinon FG7 end viewing fibreoptic endoscope was used. The patient was asked to remain NBM after 10 pm the previous night. Patients who had undergone barium studies were called after 48 hours of the investigation and a prior stomach wash given to remove any residual barium [7].

The patients were given 4% xylocaine spray, three times with an interval of 10 mins before the scopy. I.V. diazepam 2.5 to 5 mg was used in anxious or distressed patients and kept to minimal. It was avoided in frail, elderly and moribund patients. Injection Buscopan was given to decrease the gastric and duodenal motility and facilitate passage of scope into the duodenum [8].

No difficulty was encountered during endoscopy examination. The gastrointestinal tract was studied during passage of the scope and in detail during withdrawal of the scope. Lack of clear view with the light switched on means the lens is lying against the mucosa or is obscured by fluid or food debris [9]. The lens can be washed by the finger controlled water jet or passing a Teflon tube or biopsy forceps through the channel. Patients usually obey instructions sincerely, therefore presence of large gastric residue is an important sign of gastric outlet obstruction. Examination in the presence of excess fluid or food debris carries risk of regurgitation and pulmonary aspiration [10].

With an end viewing scope the degree of vision is restricted and there are potential blind spots which cannot be studied such as the anterior wall of the stomach, proximal portion of

the duodenal bulb and the upper portion of the second part of the duodenum <sup>[11, 12]</sup>. The present end viewing scopes have a range of 105 degrees 50, overcome by recent scopes whose range of vision is increased. No major complications were encountered during our study and the average time taken per surgery was 20-25 mins. Patient was kept in the recovery room for 1 hour after which he was asked to take liquids orally.

The role of endoscopy in the diagnosis of oesophageal motility disorders is limited. The only role of endoscopy is to rule out distal obstruction. Oesophageal manometry, pH studies, barium swallow and radiography are diagnostic.

In our series the majority of patients presented with more than one symptom of upper abdominal discomfort. 102 patients had history of tobacco addiction, alcoholism or both. Of the 200 patients subjected to endoscopy 34 (25.18%) cases had sign of gastritis. These include edema, congestion, friability, erosion, hypo or hyperugosity, nodularity and visibility of vascular markings <sup>[13]</sup>. it is reported only 5.5% cases and Knutson<sup>56</sup> reported and incidence of 8.1%. The pathogenesis of gastritis is complex with

environmental factors, genetic makeup, cultural factors, dietary habits playing an important role.

Patients with gastric ulcer on endoscopy should be started on H2 receptor antagonist therapy and repeat scopy should be done after 6 weeks to check whether the ulcer has healed <sup>[15]</sup>. If the ulcer does not shown signs of healing then biopsies are obtained from the edge and center of the ulcer. In the present study 7 cases (5.18%) of gastric malignancy were detected. All the cases were proven on histopathology to be adenocarcinoma. Endoscopy enables direct visualization of the lesion, obtaining biopsy and helps in accurate staging of the disease preoperatively. Lymph node involvement can be assessed on endosonography <sup>[14]</sup>.

Endoscopy is used as a screening procedure in high risk patients with atrophic gastritis, Barrett's oesophagus, familial adenomatous polyposis, adenomatous polyps and post operative stomach Endoscopic assessment of the depth of the invasion is difficult to assess in ulcerative or depressed lesions of early gastric cancer <sup>[16]</sup>. Then the tumor has an elevated type of lesion the endoscopic diagnosis tended to be deeper than true depth. Pathomorphological changes at the tips of converging folds were important clues for diagnosing depth.

### Conclusion

Endoscopes with side viewing scopes permit visualization of ampulla, assessment of the pancreatic and common bile duct and therapeutic intervention can be done. Foreign bodies of the upper gastrointestinal tract can also be dealt with. Flexible fibreoptic endoscopy is the most accurate method of diagnosing any upper gastrointestinal disease. The precise cause of upper gastrointestinal bleeding can be diagnosed in more than 80% of cases. No major mortality was associated with endoscopic examination in the present study. Thus the endoscopic examination of the upper gastrointestinal tract is diagnostic with a very few limitations, contraindications and a negligible morbidity and mortality. Clinical examination and endoscopy help in planning the mode of investigation and operative intervention which is most suitable for the patient. It is a valuable asset to the surgeon for the diagnosis of various upper gastrointestinal tract diseases.

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