

# Role of endoscopy in evaluating upper gastrointestinal tract lesions in rural population

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## Abstract

**Background and Objectives:** Before the advent of endoscopy direct access to the lesion for the confirmation of the diagnosis was difficult, this posed difficulty in contemplating adequate and appropriate surgery. Endoscopy as a diagnostic and therapeutic tool has grown in recent years. Upper gastrointestinal (GI) endoscopy is one of the most fascinating branch which serves not only as a means of resolving or amplifying the diagnosis made clinically or by X-ray, but also a primary diagnostic procedure for conditions not otherwise diagnosable on unoperated case. Fiber optic upper GI endoscopy has already become firmly established as a reliable, quick and inexpensive tool. This study was done to detect the upper gastrointestinal lesions in rural population of Kolar District, the distribution pattern of various upper GI lesions in patients presenting with upper GI symptoms and to follow the endoscopic diagnosis for medical and surgical management. **Materials and Methods:** The study group includes patients reporting to outpatient department and also the inpatients in wards of General Surgery and other departments, who have upper GI symptoms, were advised endoscopy at R. L. JALAPPA Hospital and Research Centre, Kolar, from a period of December 2011 to August 2013. **Results:** Of the 600 cases, 370 were males, and 230 were females. Disease incidence was highest in 51–70 years age group, that is, 21.6%. Pain abdomen was the most common symptom. Epigastric tenderness was the most common sign among the patients clinically. Reflux esophagitis and diffuse gastritis formed most common cases (307 cases). The incidence of duodenitis - 7.83%, peptic ulcer -3.3%, esophageal varices - 1.5%, the incidence of carcinoma esophagus and carcinoma stomach was approximately same that is, 4.5% and 4.6% respectively. The incidence of esophageal candidiasis was 4.16%. The majority of the patients had a normal study that is, 14.5%. **Conclusion:** Upper GI lesions were more common in males. The incidence of diseases was highest among the elderly age group. Most of the benign mucosal lesions were mainly due to spicy food and habit of tobacco consumption. The incidence of malignancy was mostly among older age group above 50 years. The incidence of the normal study was high owing to increased medical care, easy availability of the procedure and increased medical awareness among patients. In all these cases, upper GI endoscopy not only helped in diagnosing the disease but also helped to get information about pathology, extent of disease and complications that have occurred. This study highlights the importance of diagnostic and therapeutic uses, recording of the various gastroenterological diseases we come across in rural population.

## Key words

Complications, endoscopy, extent of disease, pathology

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## Introduction

What is endoscopy is it an instrument or technique or it is a “Revolution or Evolution”? Many have come to understand the meaning of endoscopy as merely that of technology or instrumentation. Diagnosis and localization of its afflictions relied for many decades on barium radiology, which provides indirect data in black and white. The situation has changed dramatically since the late 1960s with the introduction of fully flexible and maneuverable endoscopes. Upper gastrointestinal (GI) lesions include patients presenting with symptoms of acid-peptic disease recurrent vomiting, dysphagia, hematemesis, etc., The prevalence of gastro-esophageal reflux diseases is more in western countries compared to Asia. The complications such as duodenal ulcers and strictures, Barrett esophagus and esophageal adenocarcinoma, can be greatly reduced if early diagnosis and screening are done by endoscopy.<sup>[1]</sup>

Peptic ulcer (duodenal and gastric ulcer) is common in men and prevalence is increased with age with a peak prevalence of 28.8% in 5<sup>th</sup> decade of life.<sup>[2]</sup> The role of endoscopy in bleeding peptic ulcer disease is significant. It is an effective tool in diagnosis, prognostication, and therapy of bleeding peptic ulcer.

The studies have shown that endoscopic intervention has led to a reduction in a blood transfusion, shortened Intensive Care Unit and hospital stays. It has decreased the need for surgery and lowered the mortality rate.<sup>[3,4]</sup>

In this rural population of Kolar, we routinely encounter patients with upper GI symptoms. Hence, the need for the study is early detection of upper GI lesions by endoscopy and later evaluating the disease for appropriate management.

## Materials and Methods

This study entitled “Role of endoscopy in evaluating upper GI tract lesions in rural population” was conducted in 600 cases at R. L. Jalappa and Research Center Kolar during the year December 2011 to September 2013.

In all the cases, the endoscope used was the fiberoptic OLYMPUS endoscope connected to DELL LCD monitor 21” PC.

Patients were selected at random for the study and fell into two categories:

- Inpatients-referred and emergency
- Outpatients received through OPD.

In some of the cases, the radiological examination was done prior to endoscopy. In both the categories, the cases which presented with the history and clinical findings suggestive of upper GI tract disorders were accepted for endoscopic examinations.

## Symptoms

- Upper abdominal pain vomiting
- Hematemesis/malaena
- Dysphagia
- Lump in abdomen
- Anorexia/weight loss
- Sensation of fullness after meals
- Weakness and tiredness
- Retrosternal burning with regurgitation.

## Signs

- Epigastric tenderness
- Supraclavicular lymphnodes
- Lump in upper abdomen
- Visible upper abdominal peristalsis
- Ascites
- Jaundice.

## Investigations

Following investigations were routinely done before endoscopic examination:

- Hemoglobin
- Stool for occult blood
- LFT in jaundice.

Barium examination (if necessary). The examination was carried out under local anesthetic solution using lignocaine viscus 2% spray, sprayed 5 min before the procedure.

Since fiberoptic endoscopy is simple and safe, we did not encounter any complications. Inadequate or improper explanation makes patient apprehensive, this is true especially with children and elderly. It is most important to have patient’s co-operation to complete the procedure safely. Both safety of the patients and instrument are important for the endoscopist. Positioning of the patient is also equally important for better orientation during visualization of the interior, apart from passing the scope. Mild sedation definitely helps in apprehensive patients, but sometimes it may make the patient more uncooperative under sedation. Good anaesthetization (local) is very essential, as this procedure may irritate pharynx and cause severe bouts of cough in some patients.

Endoscopic methods of biopsy (wherever necessary) used in our series were multiple quadrant biopsy with a biopsy forceps (especially in cases of suspected carcinoma of the stomach, esophagus, etc.

Photographic studies and video recording were done in cases of any positive and diagnostic findings.

Out of these 600 cases, which were randomly selected, few could be followed up during their course of treatment in the hospital and after discharge for a period varying from 2 months to more than a year.

## Results

Of the 600 patients studied, the maximum number of patients belonged to the age group of 61 years and above (25.1%). The minimum number of patients studied belonged to the age group of 11–20 years constituting 18 cases (3%).

Of the 600 patients studied, 370 patients were males (61.6%) and 230 were females (28.4%). Of the 600 cases studied, it has been observed that the maximum number of GI lesions was in the stomach followed by esophagus and duodenum. Benign lesion in esophagus, stomach and duodenum was seen in 108 cases, 241 cases and 81 cases respectively. Malignant lesions of stomach and esophagus were seen in 28 and 27 cases respectively. Only two cases of carcinoma duodenum were seen in our study.

### Distribution of malignant lesions of the upper gastrointestinal tract

Of the 600 cases studied 57 cases were diagnosed on endoscopy as malignant lesions. Of the 57 cases studied 28 cases were carcinoma stomach, of which 20 were seen in males, eight were seen in females.

Of the 57 cases studied 27 cases were carcinoma esophagus, of which 15 were seen in males, 12 were seen in females.

**Table 1: Distribution of patients according to age**

Age group	Number of Patients	Percentage %
11-20	18	3
21-30	97	16.1
31-40	98	16.33
41-50	129	21.5
51-60	108	18.00
61- above	151	25.1
<b>Total</b>	<b>600</b>	<b>100.00</b>

**Table 2: Distribution of patients according to sex**

Sex	Number of patients	Percentage
Male	370	61.6
Female	230	28.4
<b>Total</b>	<b>600</b>	<b>100</b>

**Table 3: Distribution of patients according to etiology**

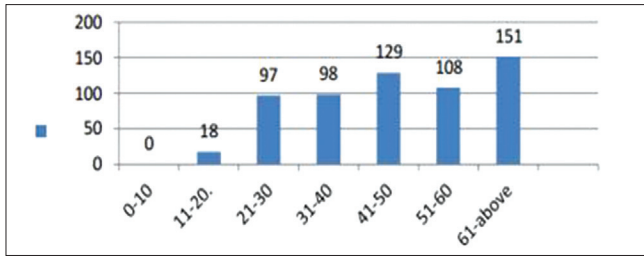
Aetiology	Number of Patients	Percentage
Reflux oesophagitis	41	6.8
Reflux oesophagitis with gastritis	30	5.9
Oesophageal varices	09	1.5
O. Candidiasis	25	4.16
Stricture oesophagus	02	0.33
Carcinoma oesophagus.	27	4.5
Acute diffuse gastritis	74	12.33
Chronic gastritis	75	13.8
Atrophic gastritis	04	0.6
Reflux bile gastritis	36	6
Erosive gastritis	43	7.16
Pyloric stenosis	04	0.6
Chronic gastric ulcer	05	0.8
Duodenal ulcer	15	2.5
Carcinoma stomach	28	4.6
Foreign body stomach	04	0.66
Duodenitis	37	6.16
Gastroduodenitis	20	0.6
Duodenal polyp	06	1
Worm infestation	10	0.6
Carcinoma duodenum	03	0.5
Duodenal diverticula	03	0.5
Oesophageal polyp	01	0.16
Normal study	88	14.5
Recurrence	02	0.33
Pt not prepared well	02	0.33
Un co-operative pt's.	02	0.33
Indentation of stomach.	02	0.33
Indentation of oesophagus	02	0.33
<b>Total</b>	<b>600</b>	<b>100</b>

**Table 4: distribution of benign and malignant lesions of gastrointestinal tract**

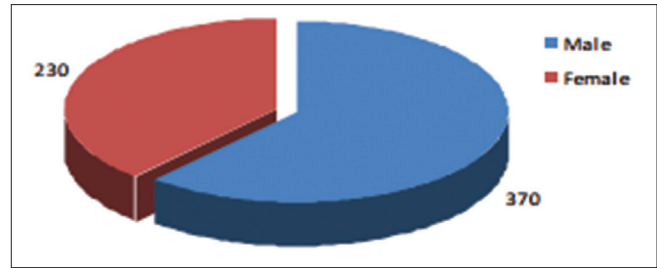
Type of Lesion	Oesophagus	Stomach	Duodenum	Total
Benign	108	241	81	430
Malignant	27	28	2	57
<b>Total</b>	<b>135</b>	<b>269</b>	<b>83</b>	<b>487</b>

**Table 5: Distribution of malignant lesions of upper gastrointestinal tract**

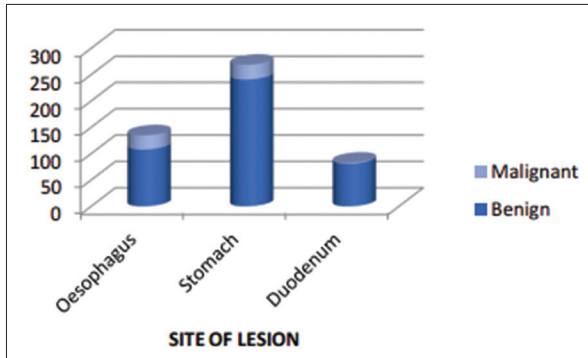
Type and site	Male	Female	Total	%
Carcinoma of Stomach	20	8	28	4.6
Carcinoma of Oesophagus.	15	12	27	4.5
Carcinoma Duodenum.	02	0	02	0.33
<b>Total</b>	<b>37</b>	<b>20</b>	<b>57</b>	<b>9.5</b>



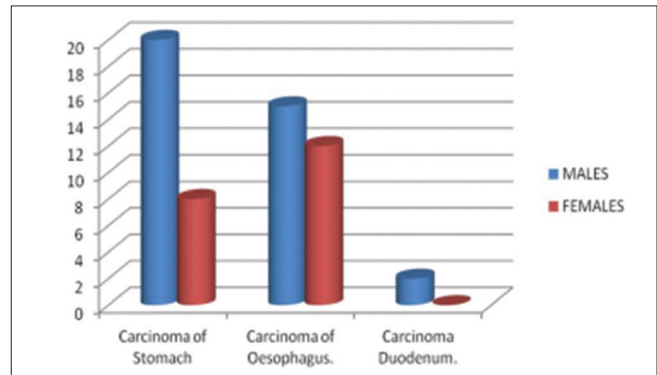
Graph 1: Age distribution



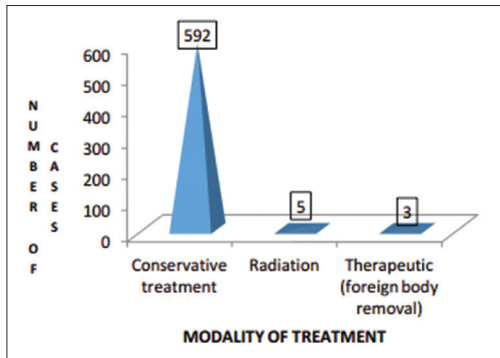
Graph 2: Distribution of patients according to sex



Graph 3: Distribution of benign and malignant lesions in gastrointestinal tract



Graph 4: Distribution of malignant lesions of the upper gastrointestinal tract



Graph 5: Distribution of patients according to treatment offered

Upper gastrointestinal endoscopy [Figures 1-8]



Figure 1: Antral carcinoma

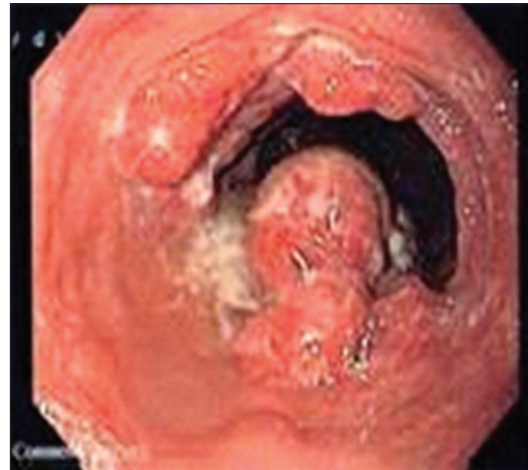


Figure 2: Ca oesophagus Lower 1/3<sup>rd</sup>

Of the 57 cases studied two cases were carcinoma duodenum seen in males.

Out of 600 cases studied, 592 (98.6%) patients were managed conservatively, 5 (0.83%) patients received radiation, and 3 (0.3%) had endoscopic treatment of foreign body removal [Tables 1-5 and Graphs 1-5].

Discussion

This is a prospective study conducted in Department of General Surgery from December 2011 to September 2013 at



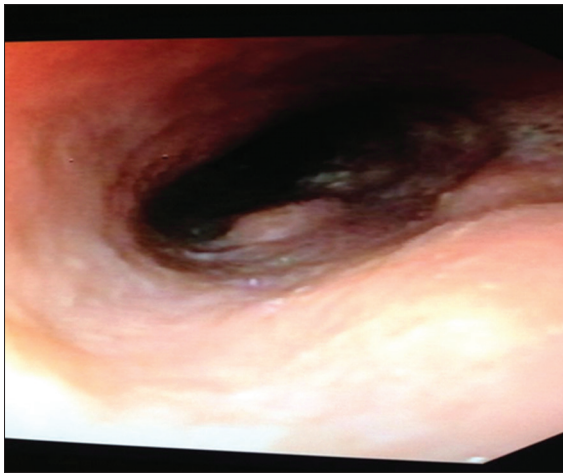


Figure 3: Ca esophagus middle 1/3<sup>rd</sup>

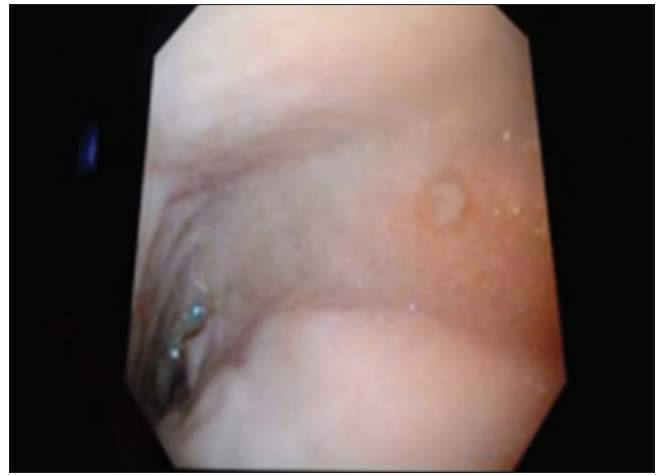


Figure 4: Duodenal ulcer

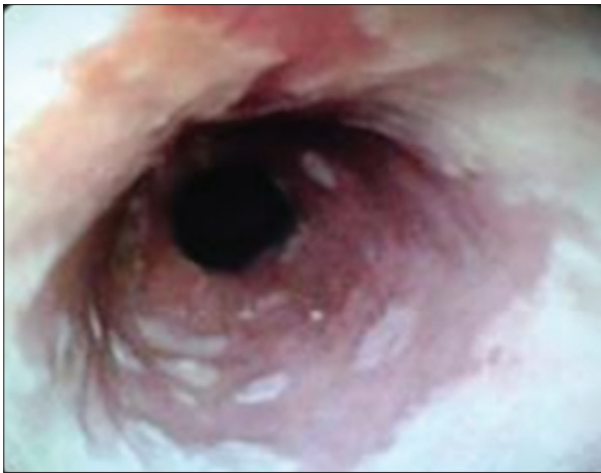


Figure 5: Esophageal candidiasis

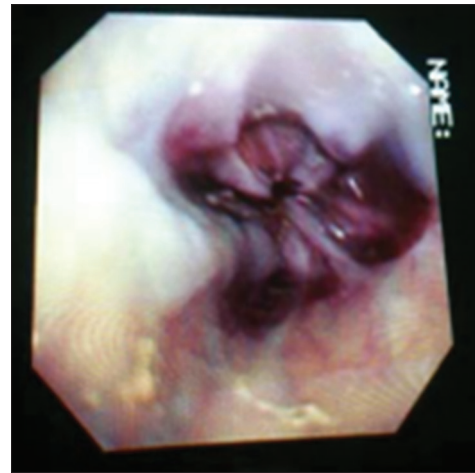


Figure 6: Esophageal varices

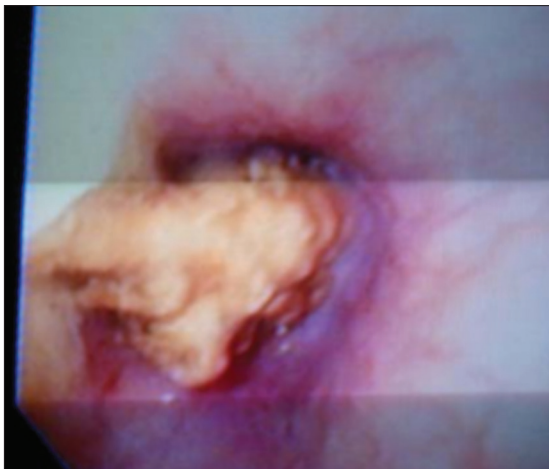


Figure 7: Foreign body esophagus



Figure 8: Foreign body removed with snare

Sri Devaraj Urs Academy of Higher Education And Centre, R.L. Jalappa Hospital, Tamaka, Kolar. 600 cases who fulfilled the inclusion criteria were included in the study and were subjected to endoscopy.

In the present study, maximum number of cases subjected to fiber optic endoscopy belonged to the age group of 61 years and above (25.1%) and 51–60 years (21.5%). In a similar study by Ray and Pal done at Referral Railway

Hospital, Kolkata, the mean age group of the study was 51–60 years.<sup>[5]</sup> In Kuwait series maximum number of patients were in 21–30 years of age group (67/211) adult age group, that is, 21.6% was affected more than any other age groups.<sup>[6]</sup>

In the present study, the maximum patients subjected to endoscopy were males (61.6%). In the study by naniwadekar and Kuwait series maximum number of patients subjected to endoscopy were males (72.5% and 62% respectively). The results were similar to our study.<sup>[6,7]</sup>

In the present study, most of the patients presented with pain abdomen followed by vomiting. In the study by Ray and Pal 9398 cases were studied, and most of the patients presented with the similar complaints of pain abdomen.<sup>[5]</sup> Similarly in a study of Kuwait series most of the patients presented with pain abdomen.

In this study, most of the patients on upper GI endoscopy were found to have chronic gastritis and acute diffuse gastritis.

The incidence of esophagitis and gastritis was 11.8% and 39.33% respectively, our results are comparable to study done by Ray and Pal and Shennak *et al.* In esophagitis group most of the patients were in the age group of 21–30 years, the incidence of gastritis was in the age group of 60 years and above. This can be explained because of heavy alcohol and smoking consumption in the laborer group of people in this area. Alcohol and smoking lowers the pyloric pressure, and that leads to reflux of bile leading to the damage of gastric mucosal barrier.

Gastric ulcer incidence was low about 0.8% compared to other studies by Al-Nakib and Al-Liddawi and Ray and Pal which was 5.9% and 4.9%. In this rural population incidence of gastric ulcer and duodenal ulcer (2.5%) was very low, and seen in elderly age group people. This may be attributed to the widespread use of proton pump inhibitors in the elder age group people as PPI are co-prescribed with NSAID'S and antiplatelet agents used for cardiovascular, cerebrovascular and rheumatological diseases. Also, the PPI are available easily over the counter without cost.

The incidence of gastric carcinoma in our study was found to be 4.6%. The M: F ratio was 2.5:1. The incidence of gastric carcinoma was 6.5% in a study by Ray and Pal.<sup>[5]</sup> The ratio of affection of male: female was 3:1 in a study at Tata Memorial Hospital, Bombay. Database of Kidwai Memorial Institute of Oncology (KMIO) 2004–2005, Bangalore, Karnataka the incidence of gastric cancer was 9%. The maximum patients affected were in the age group of 51–70 years Mean age was 58.5 years comparable to 56 years quoted by Tata Memorial Hospital and with 53 years quoted by Nakib. Antral gastric

carcinoma was more predominant compared to carcinoma of the stomach in body and fundus.

The incidence of carcinoma esophagus was 4.5% in our series. Incidence pattern is comparable to KMIO, Bangalore with the incidence of 6.6% and Ray and Pal with the incidence of 4.6%.<sup>[5]</sup> Out of the total 27 cases, 15 were Males and 12 were Females. In males, the maximum patients affected were in the age group of 60 years and above.

Esophageal Candidiasis in the present study, Incidence was 4.16%, that is, 25/600. It was seen more common among the male of the age group 50-60 years of the affected individuals only 6 of them were sero-positive for HIV. Candidiasis also affected other individuals (who were not sero-positive for HIV), this may be attributed to the advanced age, diabetes mellitus, alcoholism, inhaled gluco-corticoid use in asthmatics and acid suppressive therapy for patients with chronic gastritis.<sup>[8,9]</sup> It was interesting that not all patients were symptomatic, and our study supports a prevalence of esophageal candidiasis in 20% of normal healthy individuals.<sup>[8,9]</sup> All patients were followed and given a course of treatment with oral flucanazole 200 mg on 1<sup>st</sup> day, followed by 100 mg once daily for at least 2 weeks. Total number of normal study cases were 88 and incidence was 14.5%. Incidence was more in females compared with males. The normal study were more compared to all previous studies.<sup>[6,7,10]</sup> The increase in normal studies of endoscopy on recent years is mainly because of increased medical care, easy availability of the procedure and increase awareness of health among the population.

The incidence of upper GI lesions namely gastroduodenitis, duodenal polyp were 3.33% and 0.5% respectively. We had two cases of stricture esophagus following corrosive acid consumption. And foreign body stomach constituted to around 0.66% (3 cases).

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Nil.

#### Conflict of interest

There are no conflict of interest.

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