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Research Article

Upper Gastrointestinal Disease Symptoms and Endoscopic Findings – A Comparative Analysis

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Abstract

This will improve the early detection and treatment of upper digestive tract diseases and improve the quality of care provided. The development of similar research in different geographic regions with different methodological approaches will enable full comprehension of the topic. Limitations, such as obtaining study sample from a single centre and lack of follow-up of the study's participants were noted. Our evaluation relied on self-reporting. Finally, recall bias may have occurred because symptoms were investigated that occurred within the past

Keywords: general surgery; hiatal hernia; gastrointestinal surgery

Introduction

Digestive symptoms are among the most common complaints from patients who seek primary healthcare services. Dyspepsia, defined as pain or recurrent discomfort in the upper abdomen, is one of the most common symptoms of gastrointestinal disease. It includes several symptoms, epigastric pain, retrosternal pain or heartburn, post prandial fullness and regurgitation, atypical symptoms being hoarseness, dysphagia & vomiting. [1,2].

Symptoms can be associated with different gastrointestinal diseases such as esophagitis, gastritis, peptic ulcer, and gastric cancer, which are the main causes of gastrointestinal morbidity and mortality worldwide.[3]. Western endoscopy societies, [4,5]. as well as Asian recommendations, [6]. recommend investigation of these symptoms through upper gastrointestinal endoscopy, also known as esophagogastroduodenoscopy (EGD) to detect organic diseases that cause the patient's symptoms and to exclude malignancies.

EGD is the most common endoscopic procedures used for the investigation of digestive symptoms and provides information for the diagnosis and treatment of gastrointestinal disorders. [5,7]. The indications for EGD include patients aged above 40 years with warning signs (symptoms of dysphagia, unintentional weight loss, odynophagia, anaemia, digestive tract haemorrhage, nausea, persistent vomiting, or family history of cancer). It is recommended to conduct EGD immediately in the presence of warning signs. [8].

EGD has proven to be a relatively safe procedure that can be performed in large healthcare centres, small rural hospitals or even private practices. Socioeconomic factors, lifestyle habits, diet, genetic and environmental factors, infectious diseases are involved in the appearance of symptoms which can vary throughout the world. [10]. Consequently, the timely performance of EGD to investigate the patient's symptoms leads to more efficient treatment of diseases and a decrease in their morbidity and mortality rates. [9].

Patients and Methods

This study was undertaken after Ethical committee approval and after obtaining informed written consent from the patients involved.

Source of data: Patients visiting the outpatient and in-patient department of Department of General Surgery at a Tertiary Care Centre in Southern Rajasthan for a period of 1 year.

Type of study: Case series analysis on accrual patients.

Inclusion criteria: Patients presenting with upper gastrointestinal symptoms for at least 1 month, including those on medications for the same, more than 15 years of age and willing to provide informed consent before participation.

Exclusion criteria: Patient having undergone any previous upper gastrointestinal surgery or those with upper gastrointestinal obstructive symptoms, hematemesis or pregnant or lactating females.

Methodology:

All the patients underwent routine blood workup and were subjected to EGD. The patients were asked to fast for 6 hours prior to the procedure.

Lignocaine gel was given orally for local anaesthesia following which mouthpiece was placed. Patient was made to lie on his/her left side and endoscope inserted. The instrument is advanced under direct vision, with the tip kept central. Esophagus was looked for inflammation, growth. The gastro-oesophageal junction was identified by the colour difference between oesophageal and gastric mucosa, and observed if closed or patulous. On entering the stomach, the anterior and posterior walls of the body were viewed along with the lesser and greater curvature. The proximal part of the curvatures were examined using the J manoeuvre. Stomach was observed for inflammation, ulcer, growth. Prepyloric and pyloric ring was observed directly. When the pylorus yields, complete assessment of the duodenum was done up to second part following which scope is removed. The patient was kept under observation.

The findings were categorised as oesophageal (esophagitis, hiatal hernia, others, normal), gastric (gastritis, gastric ulcer, malignancy, others, normal) and duodenal (duodenal ulcer, duodenitis, others, normal). The symptoms were correlated with these endoscopic findings.

Data processing and statistical analysis were performed using Microsoft Excel Spreadsheet and Openepi. Chi-square test was calculated and p value derived. A p-value <0.05 was considered statistically significant because it provides sound evidence against the null hypothesis.

Results

Out of 68 patients, there were 42 (61.8%) males, 26 (38.2%) females, age ranging from 15 years to 75 years. The mean (SD) age of the patients in this study was 42 years (16.6).

Based on the sex of the patients:

The most common upper gastrointestinal symptom was epigastric pain, seen in 54 (79.4%) patients, followed by heartburn in 41 (60.3%) patients, post-prandial fullness in 23 (33.8%) patients and lastly regurgitation in 20 (29.4%) patients. Participants presented with ≥ 1 of these typical upper gastrointestinal symptoms. (Table I)

Symptoms	Male, n= 42 n(%)	Female, n=26 n(%)	Total, n= 68 n(%)
Heartburn	26 (61.9)	15 (57.7)	41 (60.3)
Regurgitation	11 (26.2)	9 (34.6)	20 (29.4)
Epigastric pain	30 (71.4)	24 (92.3)	54 (79.4)
Post prandial fullness	16 (38.1)	7 (26.9)	23 (33.8)

Table 1: Gender wise distribution of Upper Gastrointestinal symptoms among participants (138 symptoms in 68 participants).

Male patients were more likely to have symptoms of epigastric pain (p = 0.04). (Table II)

Symptoms	Total, n = 68, n (%)	Sex		*p*-value	Chi^2 value
		Male, n = 42, n (%)	Female, n = 26, n (%)		
Heartburn					
Yes	41 (60.3)	26(61.9)	15(57.7)	0.73	0.119
No	27 (39.7)	16(38.1)	11(42.3)		
Regurgitation					
Yes	20 (29.4)	11(26.2)	9(34.6)	0.46	0.549
No	48 (70.6)	31 (73.8)	17 (65.4)		
Epigastric pain					
Yes	54 (79.4)	30(71.4)	24(92.3)	**0.04**	4.281
No	14 (20.6)	12 (28.6)	2 (7.7)		
Post-prandial fullness					
Yes	23 (33.8)	16(38.1)	7(26.9)	0.34	0.895
No	45 (66.2)	26 (61.9)	19 (73.1)		

Table 2: Association between digestive symptoms and sex of patients.

Analysis of various diseases on endoscopy showed that the most common pathology was inflammatory lesions seen in 46 (67.7%) of patients, of which 31(73.8%) were male patients and 15(57.7%) were female patients, followed by ulcers and erosions 11 (16.2%) of which 5 (11.9%) were male and 6 (23.1%) females. Hiatal hernia and GERD were seen in 10 (14.7%) of which 6 (14.3%) males and 4 (15.4%) females. Malignancy seen in 3 (4.4%) of which, 2 were males (4.8%) and 1 female (3.9%). (Table III)

Sl. No.	Endoscopic finding	Male n= 42 n(%)	Female n= 26 n(%)	Total n= 68 n(%)
1	Normal	4 (9.5)	5 (19.2)	9 (13.2)
2	Hiatus hernia/GERD	6 (14.3)	4 (15.4)	10 (14.7)

3	Inflammatory lesions	31 (73.8)	15 (57.7)	46 (67.7)
4	Malignancy	2 (4.8)	1 (3.9)	3 (4.4)
5	Ulcer/Erosions	5 (11.9)	6 (23.1)	11 (16.2)

Table 3: Gender wise distribution of various diseases on endoscopy.

There was no statistically significant association between upper gastrointestinal endoscopy findings and sex of the participants. (Table IV)

UGI Endoscopic findings	Total, n = 68, n (%)	Sex		*p*-value	Chi^2 value
		Male, n = 42, n (%)	Female, n = 26, n (%)		
Normal					
Yes	9 (13.2)	4(9.5)	5(19.2)	0.25	1.318
No	59 (86.8)	38(90.5)	21(80.8)		
Hiatus hernia/ GERD					
Yes	10 (14.7)	6(14.3)	4(15.4)	0.90	0.015
No	58 (85.3)	36(85.7)	22(84.6)		
Inflammatory lesions					
Yes	46 (67.6)	31(73.8)	15(57.7)	0.17	1.906
No	22 (32.4)	11(26.2)	11(42.3)		
Malignancy					
Yes	3 (4.4)	2(4.8)	1(3.9)	0.86	0.031
No	65 (95.6)	40(95.2)	25(96.1)		
Ulcer					
Yes	11 (16.2)	5(11.9)	6(23.1)	0.22	1.478
No	57 (83.8)	37(88.1)	20(76.9)		

Table 4: Gender association with various endoscopic findings.

Based on the age of the patients:

All patients were subdivided into different age groups. Most commonly, clinically significant endoscopic findings were seen in age group between 26-35 years (n=18, 26.5%). (Table V)

Age Groups	Number of Cases n= 68, n(%)
15-25	14 (20.6)
26-35	18 (26.5)
36-45	9 (13.2)
46-55	8 (11.8)
56-65	10 (14.7)
66-75	9 (13.2)

Table 5: Age wise description of participants recruited for the study.

Participants presented with ≥ 1 of these typical upper gastrointestinal symptoms. The most common upper gastrointestinal symptom was epigastric pain, seen in 54 (79.4%) patients commonly in 26-35 year old participants, followed by heartburn in 41 (60.3%) patients in the same age group, post-prandial fullness in 23 (33.8%) patients under the age of 35 years and lastly regurgitation in 20 (29.4%) patients mostly falling in 26-35 year age group. (Table VI)

Age groups	Heartburn n=41 (60.3%)	Regurgitation n=20 (29.4%)	Epigastric pain n=54 (79.4%)	Post prandial fullness n=23 (79.4%)	Total n=68 (%)
15-25	10	3	13	6	32 (47.1)
26-35	12	6	14	6	38 (55.9)
36-45	3	2	8	1	14 (20.6)
46-55	4	4	4	1	13 (19.1)

56-65	7	2	9	4	22 (32.4)
66-75	5	3	6	5	19 (27.9)

Table 6: Age wise distribution of various upper gastrointestinal symptoms (138 symptoms in 68 participants).

There was no statistically significant association between symptoms of upper gastrointestinal disease and age group. (Table VII)

Symptoms	15-25 yrs **n=14**		26-35 yrs **n=18**		36-45 yrs **n=9**		46-55 yrs **n=8**		56-65 yrs **n=10**		66-75 yrs **n=9**	
	n (%)	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**
Heartburn												
Yes	10 (71.4)	0.33 0.91	12 (66.7)	0.52 0.41	3 (33.3)	0.07 3.15	4 (50)	0.52 0.40	7 (70)	0.46 0.49	5 (55.6)	0.75 0.09
No	4 (28.6)		6 (33.3)		6 (66.7)		4 (50)		3(30)		4 (44.4)	
Regurgitation												
Yes	3 (21.4)	0.46 0.54	6 (33.3)	0.67 0.18	2 (22.2)	0.61 0.25	4 (50)	0.17 1.85	2 (20)	0.47 0.50	3 (33.3)	0.78 0.07
No	11 (78.6)		12 (66.7)		7 (77.8)		4 (50)		8 (80)		6 (66.7)	
Epigastric pain												
Yes	13 (92.9)	0.16 1.95	14 (77.8)	0.84 0.03	8 (88.9)	0.45 0.56	4 (50)	0.03 4.79	9 (90)	0.36 0.80	6 (66.7)	0.31 1.03
No	1 (7.1)		4 (22.2)		1 (11.1)		4 (50)		1 (10)		3 (33.3)	
Post-prandial fullness												
Yes	6 (42.9)	0.42 0.64	6 (33.3)	0.95 0.002	1 (11.1)	0.12 2.39	1 (12.5)	0.17 1.84	4 (40)	0.65 0.19	5 (55.6)	0.13 2.18
No	8 (57.1)		12 (66.7)		8 (88.9)		7 (87.5)		6 (60)		4 (44.4)	

Table 7: Association of digestive symptoms with age in patients.

Hiatus hernia/GERD and Inflammatory lesions (gastritis, esophagitis, duodenitis) were commonly seen in the age group between 26-35 years. Ulcer/erosions were commonly seen bimodally in the age groups between 56-65 and 26-35 years. Malignant lesions were seen in patients aged more than 26 years. (Table VIII)

Age group (years)	**Normal n=9 (13.2%)**	**Hiatus hernia/GERD n=10 (14.7%)**	**Inflammatory lesions n=46 (67.7%)**	**Malignancy n=3 (4.4%)**	**Ulcer/erosions n=11 (16.2%)**	**Total n=68 (%)**
15-25	3	2	9	0	1	15 (22.1)
26-35	1	3	14	1	3	22 (32.4)
36-45	2	0	5	0	2	9 (13.2)
46-55	0	1	7	1	1	10 (14.7)
56-65	2	2	5	1	3	13 (19.1)
66-75	1	2	6	0	1	10 (14.7)

Table 8: Age wise distribution of various diseases on upper gastrointestinal endoscopy.

There was no statistically significant association between upper gastrointestinal endoscopy findings and age group. (Table IX)

Endoscopy findings	15-25 yrs n=14		26-35 yrs n=18		36-45 yrs n=9		46-55 yrs n=8		56-65 yrs n=10		66-75 yrs n=9	
	n (%)	*p*-value, Chi^2 value	n (%)	*p*-value, Chi^2 value	n (%)	*p*-value, Chi^2 value	n (%)	*p*-value, Chi^2 value	n (%)	*p*-value, Chi^2 value	n (%)	*p*-value, Chi^2 value
Normal												
Yes	3 (21.4)	0.31 1.03	1 (5.6)	0.26 1.25	2 (22.2)	0.39 0.72	0 (0)	0.24 1.38	2 (20)	0.49 0.47	1	0.84 0.04
No	11 (78.6)		17 (94.4)		7 (77.8)		8(100)		8 (80)		8	
Hiatus hernia/ GERD												
Yes	2 (14.3)	0.96 0.002	3 (16.7)	0.78 0.07	0 (0)	0.18 1.79	1 (12.5)	0.85 0.04	2 (20)	0.61 0.26	2 (22.2)	0.49 0.47
No	12 (85.7)		15 (83.3)		9 (100)		7 (87.5)		8 (80)		7 (77.8)	
Inflammatory lesions												
Yes	9 (64.3)	0.76 0.09	14 (77.8)	0.28 1.15	5 (55.6)	0.41 0.69	7 (87.5)	0.20 1.63	5 (50)	0.19 1.67	6 (66.7)	0.95 0.005
No	5 (35.7)		4 (22.2)		4 (44.4)		1 (12.5)		5 (50)		3 (33.3)	
Malignancy												
Yes	0 (0)	0.37 0.81	1 (5.6)	0.78 0.08	0 (0)	0.49 0.48	1 (12.5)	0.24 1.41	1 (10)	0.35 0.87	0 (0)	0.49 0.48
No	14 (100)		17 (94.4)		9 (100)		7 (87.5)		9 (90)		9 (100)	
Ulcer												
Yes	1 (7.1)	0.31 1.06	3 (16.7)	0.95 0.004	2 (22.2)	0.60 0.28	1 (12.5)	0.76 0.09	3 (30)	0.20 1.65	1 (11.1)	0.66 0.20
No	13 (92.9)		15 (83.3)		7 (77.8)		7 (87.5)		7 (70)		8 (88.9)	

Table 9: Association of digestive symptoms with age of participants.

Out of 59 patients with clinically significant endoscopic findings, most common pathology was seen in stomach with 49 (62.8%) patients followed by 21 (26.9%) patients having oesophageal pathologies and 8 patients (10.3%) having pathologies in the duodenum. (Table X) Multiple sites may be involved in a single participant.

Site of lesions	Cases
Oesophagus	21 (26.9%)
Stomach	49 (62.8%)
Duodenum	8 (10.3%)

Table 10: Distribution of clinically significant endoscopic finding according to the site of lesions (78 sites involved in 68 participants).

The most frequent abnormalities detected by endoscopy in the studied sample were inflammatory conditions (oesophagitis, gastritis, duodenitis) (n=46). Heartburn was found to be a significant symptom for all conditions. Regurgitation was a significant symptom in largely normal endoscopic findings (0.019). Participants with epigastric pain significantly had either hiatus hernia/GERD (p=0.005) or Inflammatory conditions (p=0.009). Post-prandial fullness was significantly associated with inflammatory conditions (p=0.042). (Table XI, XII)

Symptoms	Normal	Hiatus hernia/GERD	Inflammatory lesions	Malignancy	Ulcer/erosions	Total
Heartburn	2	7	41	1	3	54
Regurgitation	0	5	18	2	4	29
Epigastric pain	9	6	44	2	8	69
Post prandial fullness	3	2	23	0	4	32
Total	14	20	126	5	19	184

Table 11: Association between upper gastrointestinal symptoms and endoscopic findings.

Symptoms	Normal, n=9		Hiatus/Gerd, n=10		Inflammatory, n=46		Malignancy, n=3		Ulcer, n=11	
	n (%)	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**	**n (%)**	***p*-value, Chi² value**
Heartburn										
Yes	2 (22.2)	**0.0015** 9.9	7 (70)	**0.014** 0.90	41(89.1)	**0.000002** 21.97	1 (33.3)	0.18 1.77	3 (27.2)	**0.0016** 9.97
No	7 (77.8)		3 (30)		5 (10.9)		2 (66.7)		8 (72.7)	
Regurgitation										
Yes	0 (0)	**0.015** 5.81	5 (50)	0.35 0.87	18(39.1)	0.6 0.28	2 (66.7)	0.27 1.2	4 (36.4)	0.98 0.0007
No	9 (100)		5 (50)		28(60.9)		1 (33.3)		7 (63.6)	
Epigastric pain										
Yes	9 (100)	0.23 1.47	6 (60)	**0.005** 7.74	44(95.7)	**0.009** 6.88	2 (66.7)	0.27 1.20	8 (72.7)	0.11 2.46
No	0 (0)		4 (40)		2 (4.3)		1 (33.3)		3 (27.2)	
Post-prandial fullness										
Yes	3 (33.3)	0.64 0.21	2 (20)	0.15 1.99	23 (50)	**0.042** 4.12	0 (0)	0.15 2.12	4 (36.4)	0.76 0.09
No	6 (66.7)		8 (80)		23 (50)		3 (100)		7 (63.6)	

Table 12: Association between digestive symptoms and abnormalities detected by endoscopy in patients.

Discussion

The most prevalent upper gastrointestinal digestive symptoms were epigastric pain, followed by heartburn and post-prandial fullness. These data suggest that the intensity of the pain and gastric discomfort combined with the fear of serious diseases are the main reasons for seeking a clinical opinion. [11]

Comparison of clinical presentations:

Out of 68 patients, 54 (79.4%) had epigastric pain and discomfort as their chief complaint. The other complaints were heart burn 41(60.3%), post prandial fullness 23(33.8%), regurgitation 20(29.4%). A study conducted in the southeast region of Brazil on patients with dyspepsia showed that epigastric pain was reported in 10%, post-prandial plenitude in 6.7%, and heartburn in 52.8% of patients. [12] In the United States, research involving patients with dyspepsia showed a prevalence of 51% for epigastric pain and 47% for post-prandial discomfort. The prevalence of heartburn was approximately 35.3% among the patients who had this symptom at least once a month, [13] which agrees with our study's data. Similar study was conducted by Thomson A B R et al [46], in which the common presenting complaints were upper abdominal pain (34.3%), heart burn (24.5%) and acid regurgitation (13.3%), the observations were comparable with that of the present study. In a population study conducted in Asia, the authors found that the prevalence of epigastric pain was 20.2% and that of heartburn was 2.1%. The variation of symptoms observed in different countries suggests a difference in the pattern of development of digestive symptoms between western and oriental cultures, in addition to differences in the diagnostic instruments used. [14,15]

Comparison of gender distribution:

In this study 61.8% were males, 38.2% were females with men more likely than women to have gastrointestinal symptoms. However, the p-value was insignificant suggestive of equivocal distribution among both genders. The male to female ratio in the studies conducted by Khan N et al – 2.3:1, Tidake et al – 1.08:1, Du et al- 1.3:1 respectively. In these studies, the majority of patients were males as observed in our study. [16,17,18] In a population-based study in Australia, females significantly outnumbered males in most functional gastrointestinal disorders includes functional dyspepsia. The higher frequency of digestive symptoms in women was also observed in other studies. [12,19,20] (Table XIII)

Sl. No.	Name of Study	Male:Female ratio
1	Khan N et al	2.3:1
2	Tidake et al	1.08:1
3	Du et al	1.3:1
4	Almeida AM et al	0.7:1
5	Rodríguez-García JL et al	1:1
6	Present study	1.6:1

Table 13: Comparison of gender distribution between various studies.

The differences between gastrointestinal symptoms in men and women may be related to differences in the production of gastric hormones between the sexes that are responsible for the higher motility of the gastrointestinal tract, such as ghrelin, in addition to psychosocial factors, alcoholism, smoking and lifestyle choices. [21,22,23] A study in South Korea evaluating differences between the sexes in the production of ghrelin, psychological factors, and quality of life in patients with dyspepsia demonstrated that men produced a lower amount of ghrelin,

and women had a higher score of anxiety and depression, whereas the anxiety score was associated with epigastric pain only in female patients. [22]

Comparison of age:

Most of the patients in this study were in the age group of 26-55 years constituting 51.5% of total cases with a mean age of 42 years. Even similar studies like Tidake et al. and Wang et al. showed an incidence of 50% and 70%, respectively, among similar age group of 30-60 years. [17,24]

Comparison of endoscopic findings:

In the present study, clinically significant endoscopic findings were observed in 59 patients accounting for 86.8%. Gastritis was the most common finding (55.9%), while esophagitis was found in 16.2%. The next common findings were gastric ulcer, duodenitis, GERD. The percentage of cases with gastritis in this study was higher than that observed in studies by Sarwar et al and Ziauddin. The percentage of patients GERD was nearly equal to that observed by Ziauddin et al. (Table XIV)

Sl. No.	Name of the study	Gastritis	Reflux esophagitis/GERD
1	Sarwar et al. [27]	13%	20%
2	Ziauddin	18%	14%
3	Present study	55.9%	16.2%

Table 14: Comparison of endoscopic findings between various studies.

Comparison of incidence of gastric malignancies: The incidence of gastric malignancy in various studies is comparable with those observed in the present study. (Table XV

Sl. No.	NAME OF STUDY	GASTRIC MALIGNANCIES (%)
1	Choomsri P et al. [28]	1%
2	Khan N et al. [16]	3%
3	Ziauddin	4%
4	Present study	4.4%

Table 15: Comparison of incidence of gastric malignancies between various studies.

The current study revealed that there was some significant association between digestive symptoms and abnormalities detected by endoscopy. The most frequent abnormality detected by endoscopy were inflammatory lesions. Dyspepsia occurs frequently in the population at large and have significant overlapping of symptoms; therefore, knowledge of the underlying clinical cause of these symptoms could help perfect the management of upper gastrointestinal diseases. [25,26]

Therefore, we need to investigate the factors that contribute to the appearance of digestive symptoms through a personalised and multi-professional approach. This will improve the early detection and treatment of upper digestive tract diseases and improve the quality of care provided. The development of similar research in different geographic regions with different methodological approaches will enable full comprehension of the topic.

Limitations:

Limitations, such as obtaining study sample from a single centre and lack of follow-up of the study's participants were noted. Our evaluation relied on self-reporting. Finally, recall bias may have occurred because symptoms were investigated that occurred within the past.

Conclusion

From the present study, on endoscopic examination, gastritis accounted for the majority of the cases. Incidence of malignancy in the present study was observed to be 4.4%. Clinically significant endoscopic findings were observed in 86.8% of patients with dyspepsia. In our study, endoscopic findings correlated well with signs and symptoms of majority of patients. Most patients presented with a complex of two or more dyspeptic symptoms and the symptom profile was occasionally predictive of the endoscopic findings. Prevalence of large number of inflammatory lesions as a result of increased acid production, with a low incidence of malignancy in the study group suggests that the un-investigated patients with dyspepsia may be initially managed medically with acid suppressive therapy. Endoscopy may be undertaken in patients with recurrent symptoms or in whom drug therapy fails. Upper gastro-intestinal endoscopy therefore is a simple, safe, reliable and valuable tool with an easy learning curve. It enables direct visualization of the upper GI tract and when combined with histopathological examination helps in diagnosing as well as for therapeutic interventions for patients with various pathologies. Upper GI endoscopy will remain as the initial investigation of choice for the patients presenting with upper GI symptoms.

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