International Surgery Journal
Arvind E et al. Int Surg J. 2022 Dec;9(12):2010-2013
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20223164

Original Research Article

Incidence of hiatus hernia among semi-urban population with upper gastrointestinal symptoms: a single cantered study

Arvind E.*, Murugan R., Karthick M. P., Karthick P., Vikraman G.

Department of General Surgery, Trichy SRM Medical College Hospital and Research Centre, SRM Nagar, Irungalur, Thiruchirapalli, Tamil Nadu, India

Received: 23 October 2022
Revised: 14 November 2022
Accepted: 16 November 2022

***Correspondence:**
Dr. Arvind E.,
E-mail: arvinderaavanan@gmail.com

ABSTRACT

Background: Hiatal hernias are a common occurrence in the western population, with an estimated prevalence of 15% to 20%. These hernias may become symptomatic and lead to gastroesophageal reflux disease (GERD), dysphagia, dyspnoea, and may affect cardiac and respiratory function. Being overweight and elderly are the key risk factors in its development. Other known risk factors include: multiple pregnancies, history of oesophageal surgery, partial or full gastrectomy and certain disorders of the skeletal system associated with bone decalcification and degeneration.
Methods: This is a retrospective study done on patients who presented to the surgical outpatient at Trichy SRM Medical College Hospital and Research Centre during the period July 2021 to July 2022.
Results: Total of 97 (19.02%) patients presented with lax hiatus 41 (42.27%) and had it exclusively while 5 (5.16%), 31 (31.96%), 10 (10.31%) and 10 (10.31%) had it associated with antral gastritis, diffuse gastritis, pan gastritis and oesophagitis respectively. These values were statistically significant with a p value <0.001. And lax hiatus was more commonly seen among female 56 (57.73%) compared to male 41 (42.27%) and hiatus hernia observed more in male 21 (58.33%) than female 15 (41.67%), there was no statistical significance observed among both the gender.
Conclusions: Among the patients those who have presented to the surgery outpatient at Trichy SRM with upper gastrointestinal symptoms and in whom upper GI endoscopy were done the incidence of hiatus hernia was observed to be more prevalent among men compared to women in whom lax hiatus were seen to exist.

Keywords: Hiatus hernia, Upper gastrointestinal symptoms, Upper gastrointestinal endoscopy

INTRODUCTION

Hiatus hernia is the protrusion of an abdominal organ into the mediastinum through the diaphragmatic hiatus. There are four main types of hiatus hernia: type 1 ("sliding"), the most common, is the herniation of the esophago-gastric junction (EGJ) above the diaphragm, leaving the stomach in the abdomen; type 2 ("pure paraesophageal") is the thoracic migration of the gastric fundus while the esophagogastric junction remains in the correct position; type 3 ("mixed") is a combination of both type 1 and type 2 components; and, in type 4 ("giant") hiatus hernia, the herniation involves the entire stomach along with other abdominal viscera, including colon, omentum, small bowel, liver and spleen.[5] The oesophageal hiatal orifice is an elliptically shaped opening through the diaphragm with its long axis in the sagittal plane through which the oesophagus and vagus nerves gain access to the abdomen. Although there is some anatomic variability, the most common anatomic pattern is for the hiatus to be formed by elements of the right diaphragmatic crus.[6] Over the past few decades, our understanding on the

relationship between hiatus hernia and gastroesophageal reflux disease (GERD) has evolved, shifting from one extreme to the other. Initially it was considered that the presence of hiatus hernia, an anatomical abnormality, was a sine qua non in the pathogenesis of GERD ever since its association was first emphasized by Allison in 1951.[7] Hiatus hernia is a common disorder and most cases are isolated. Familial cases in more than one generation are rare and were first reported by Myles in 1939.[8] Here in our study, we have observed the incidence of hiatus hernia presenting among patients in a semi-urban population who came to the hospital with various upper gastrointestinal symptoms.

METHODS

This is a randomized control study done in patients who presented to the surgical outpatient at Trichy SRM medical college hospital and research centre during the period July 2021 to July 2022 with complaints of upper gastrointestinal symptoms and then underwent upper gastrointestinal endoscopy at Trichy SRM hospital were the study group. The patients were selected based on the universal sampling method. The patients were kept nil per oral the previous night, informed and written consent from the patient and the attender were obtained as per the guidelines provided by the ethical approval committee. The patient was made to lie in the left lateral position after spraying 10 % Xylocaine in the mouth and pharynx. After about 10-15 minutes once the anaesthetic effect has set in, the flexible fibre optic esophago-gastro-duodenal endoscope was introduced orally and the oesophagus, stomach up to the 2nd part of duodenum was visualized and looked for any herniating contents, laxity of the oesophageal hiatus, ulcers, gastroesophageal reflux. The entire procedure was recorded for documentation and the data collected was analysed using the Microsoft Excel tool.

Inclusion criteria

Inclusion criteria for current study were; patients over 18 years of age; patients who came to the surgery outpatient with complaints of dyspepsia, heartburn, vomiting, haematemesis, excessive belching, epigastric discomfort, regurgitation were included in the study (all cases were inpatients).

Exclusion criteria

Exclusion criteria for current study were; patients below the age of 18; cases with acute and massive upper GI bleeds; priorly diagnosed cases of gastric cancer; corrosive poison intake and anaemia due to medical causes; outpatients were excluded from the study.

RESULTS

Out of the total 510 study patients, majority 169 (33.1%) of the patients belonged to the age group of 46 to 60 years followed by 31 to 45 years 163 (31.9%). Very few people 77 (15.1%) were <30 years old and the least 101 (19.9%) were >60 years old. Equal gender distribution, male 245 (48%) and female 265 (52%) was observed among the patients (Figure 1).

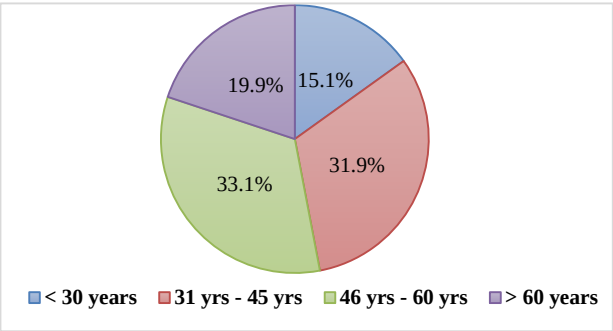

Figure 1: Age distribution among the study patients.

Table 1: Frequency distribution of symptoms among the study population.

Symptoms	N (%)
Dysphagia	69 (13.5)
Loss of appetite	93 (18.23)
Vomiting	82 (16)
Belching	240 (47)
Dyspepsia	316 (61.9)
Epigastric pain	219 (42.9)

Of the total 510 patients the common symptoms with which majority of the patients presented was dyspepsia 316 (61.9%) followed by 240 (47%) belching and 219 (42.9%) epigastric pain (Table 1). Only 71 (13.92%) of the study patients who presented with various complaints showed normal study in upper GI endoscopy. A total of 97 (19.02%) and 36 (7.06%) study patients had lax hiatus and hiatus hernia respectively (Figure 2, Table 2).

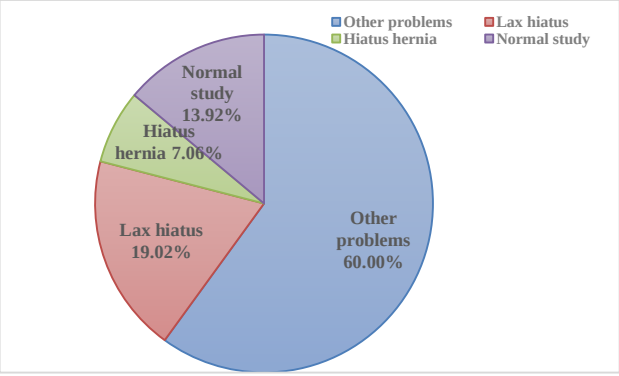

Figure 2: Distribution of Lax hiatus and Hiatus Hernia among the study patients.

Rest of the 306 (60%) patients were diagnosed with other disease. Of all the 97 (19.02%) patients presenting with lax hiatus, 41 (42.27%) had it exclusively while 5 (5.16%), 31 (31.96%), 10 (10.31%), 10 (10.31%) had it

associated with antral gastritis, diffuse gastritis, pan gastritis and oesophagitis respectively. 31 of 36 patients (86.11%) with hiatus hernia had diffuse gastritis too. These values were statistically significant with a p<0.001 (Table 3). Though lax hiatus was more commonly seen among female 56 (57.73%) compared to male 41 (42.27%) and hiatus hernia observed more in male 21 (58.33%) than female 15 (41.67%), there was no statistical significance observed among both the gender (Figure 3).

Table 2: Association between the symptoms presented and diagnosis among the study patients.

Symptoms		Lax hiatus frequency (%) N=97	Hiatus hernia frequency (%) N=36	P value
Dysphagia	Present	5 (5.15)	0 (0)	0.256
	Absent	92 (94.85)	36 (100)	
Loss of appetite	Present	5 (5.15)	0 (0)	0.110
	Absent	92 (94.85)	36 (100)	
Vomiting	Present	5 (5.15)	5 (13.88)	0.347
	Absent	92 (94.85)	31 (86.12)	
Belching	Present	72 (74.22)	30 (83.33)	0.002
	Absent	25 (25.78)	6 (16.67)	
Dyspepsia	Present	51 (52.58)	31 (86.12)	0.304
	Absent	46 (47.42)	5 (13.88)	
Epigastric pain	Present	61 (62.88)	15 (41.66)	0.138
	Absent	36 (36.84)	21 (58.34)	

p value <0.05 is considered to be significant

Table 3: Distribution of lax hiatus and hiatus hernia among different age groups.

Age (years)	Diagnosis; frequency (%)		P value
	Lax hiatus (N=97)	Hiatus hernia (N= 36)	
<30	10 (10.30)	5 (13.89)	0.632
31-45	31 (31.96)	21 (58.33)	
46-60	41 (42.27)	10 (27.78)	
>61	15 (15.47)	(0)	

p value <0.05 is considered to be significant

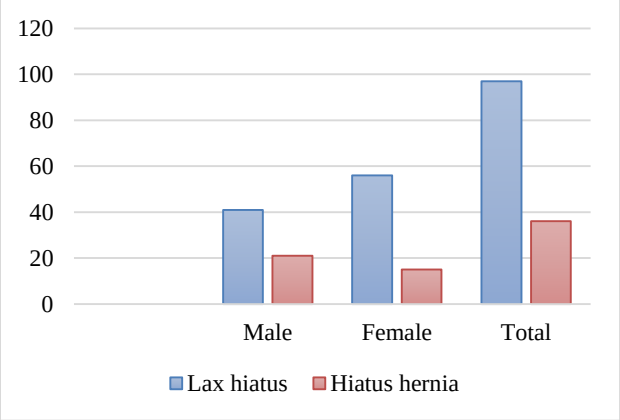

Figure 3: Association between gender and hiatus hernia.

DISCUSSION

Hiatus hernia is a condition in which parts of the abdominal contents, mainly the gastro oesophageal junction and the stomach, are proximally displaced above the diaphragm through the oesophageal hiatus into the mediastinum.[9]

Table 4: Frequency of distribution of disease among study patients.

Disease	N (%)
Lax hiatus	97 (19.02)
Hiatus hernia	36 (7.06)
Antral gastritis	102 (20)
Diffuse gastritis	87 (17.05)
Pan gastritis	98 (19.21)
Erosive diffuse gastritis	10 (1.96)
Oesophagitis	21 (4.11)
Stricture oesophagitis	7 (1.37)
Ulcero proliferative growth	26 (5.09)
Antro pyloric growth	6 (1.17)
Grade 1 oesophageal varices	11 (2.15)
Grade 4 oesophageal varices	7 (1.37)
Barret's oesophagus	5 (0.98)
D1 ulcer	8 (1.56)
D1 diverticulum	5 (0.98)
Blue rubber naevus	1 (0.19)
Cricoid growth	2 (0.39)

A complete history and physical exam is mandatory, as they may reveal symptoms that were not previously apparent. Barium swallow radiography gives valuable information about the size of the herniated stomach and

the location of the gastroesophageal junction.[10] Most studies agree that barium swallow still remains essential in the diagnosis of hiatus hernia.[11] Upper gastrointestinal (GI) endoscopy now assumes a prominent role in the diagnosis and therapy of upper GI diseases.[12] Though we were able to observe various conditions among the patients at our institution, this being a single centred study is a limiting factor to further probe into details.

CONCLUSION

The incidence of hiatus hernia in this study has shown to be significantly lower compared to the overall sample size of 510 patients. Incidentally, most of the patients belonged to the age group of 46-60 years presenting with dyspepsia as the major complaint. A multi-cantered sampling with a more detailed history on the food habits, lifestyle, geography would be more informative to assess the factors that influence the incidence of hiatus hernia.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Kahrilas PJ, Kim HC, Pandolfino JE. Approaches to the diagnosis and grading of hiatal hernia. Best Pract Res Clin Gastroenterol 2008;22:601-16.
2. Marchand P. The anatomy of esophageal hiatus of the diaphragm and the pathogenesis of hiatus herniation. Thorac Surg. 1959;37:81-92.
3. Allison PR. Reflux esophagitis, sliding hiatal hernia, and the anatomy of repair. Surg Gynecol Obstet. 1951;92:419-31.
4. Myles RB. Familial short oesophagus. Br J Radiol. 1939;12:645-7.
5. Marchand P. The anatomy of esophageal hiatus of the diaphragm and the pathogenesis of hiatus herniation. J Thorac Surg. 1959;37:81-92.
6. Andolfi C, Jalilvand A, Plana A, Fisichella PM. Surgical Treatment of Paraesophageal Hernias: A Review. J Laparoendosc Adv Surg Tech A. 2016;26: 778-83.
7. Lebenthal A, Waterford SD, Fisichella PM. Treatment and controversies in paraesophageal hernia repair. Front Surg. 2015;2:13.
8. Ugiagbe RA, Omuemu CE. Diagnostic indications for upper gastrointestinal endoscopy. Ann Biomed Sci. 2012;11(2):65-70.
9. Marchand P. The anatomy of esophageal hiatus of the diaphragm and the pathogenesis of hiatus herniation. J Thorac Surg. 1959;37:81-92.
10. Plana A, Fisichella PM. Surgical treatment of paraesophageal hernias: a review. J Laparoendosc Adv Surg Tech A. 2016;26:778-83.
11. Fisichella PM. Treatment and controversies in paraesophageal hernia repair. Front Surg. 2015;2:13.
12. Ugiagbe RA, Omuemu CE. Diagnostic indications for upper gastrointestinal endoscopy. Ann Biomed Sci. 2012;11(2):65-70.

Cite this article as: Arvind E, Murugan R, Karthick MP, Karthick P, Vikraman G. Incidence of hiatus hernia among semi-urban population with upper gastrointestinal symptoms: a single cantered study. Int Surg J 2022;9:2010-3.