INDICATIONS AND ASSOCIATED FINDINGS OF PEDIATRIC GASTROINTESTINAL ENDOSCOPY AT HAYATABAD MEDICAL COMPLEX, PESHAWAR

Ambreen Ahmad[1], Islam Gul Afridi[1], Sher Bahadur[1], Ansaar Hussain[1], Muhammad Idrees[1]

Abstract

Objective: To determine indications and associated findings of pediatric endoscopy at Hayatabad Medical Complex, Peshawar.

Study Design: Cross Sectional Study

Place and Duration of the Study: This study was conducted from 1st October, 2018 to 30th Aril 2019 at Pediatric B Unit, Hayatabad Medical Complex, Peshawar.

Methods: Using consecutive sampling technique a total of 200 cases were selected. All children who underwent endoscopy during the study period in the adult endoscopy unit of this hospital, were included in the study. Data on age, gender, indications and associated findings were extracted from endoscopy record forms of these children and analyzed using SPSS version 20. Results were presented in figures and tables.

Results: 200 pediatric patients with mean age of 7.73±4.1 (ranging from 1-16 years) were studied. Out of these 126 (63%) were male and 74(37%) were female with age categories of <5 years 80 (40%), 6-12 years 91(45.5%) and 13-16 years 29(14.5%). 130 esophagogastroduodenoscopies and 70 colonoscopies were performed giving positive reports in 83.07% and 90% cases respectively. Rectal bleeding was the most frequent indication accounting for 65(32.5%) cases followed by hematemesis 37(18.5%), chronic diarrhea 25(12.5%), vomiting 24(12%) and acid and corrosive ingestion 16(8%), abdominal/epigastric pain 8 (4%), foreign bodies 6(3%), anemia workup 5(2.5%) and melena 2(1%). Esophageal strictures were the most common finding occurring in 34(17%) of patients followed by rectal polyps in 30(15%) and esophageal varices 20(10%) celiac disease 16(8%), reflux esophagitis 12(6%), colonic polyps 10(5%), internal hemorrhoids 10(5%), foreign bodies 7(3.5%), gastric varices 6(3%), rectal ulcers, infective colitis and gastritis 4(2%) each, gastric erosions, duodenal ulcers and Crohn`s disease 3(1.5%) each and achalasia, esophageal web, duodenal erosions and worm infestation 2 (1%) each.

Conclusion: Endoscopy in paediatric patients is a useful diagnostic tool for evaluation of paediatric patients with a variety of gastrointestinal problems even when performed in an adult endoscopy unit.

Key Words: Pediatric, Gastrointestinal, Endoscopy, Indications.

Introduction

Gastrointestinal diseases like recurrent abdominal pain, recurrent vomiting, chronic diarrhea and upper and lower gastrointestinal bleeding and malabsorption syndromes account for a significant proportion of pediatric practice in low resource countries. Pediatric endoscopy facilities are not available in many referral centers in developing countries, although it is an important diagnostic tool in such cases.[1]

Gastrointestinal endoscopy in pediatric patients is, therefore, performed by adult gastroenterologist in many hospitals. However, there is lack of awareness of the use of adult gastrointestinal endoscopy facilities for pediatric patients.[2]

Local studies on gastrointestinal endoscopy in children by adult gastroenterologists are not available. This study was undertaken to determine indications and associated findings so as to increase awareness about the use of

Address for Correspondence:
Islam Gul Afridi
Assistant Professor, Department of Pediatric, Hayatabad Medical Complex, Peshawar.
igafridi4@gmail.com

1. Hayatabad Medical Complex, Peshawar, Pakistan.

this diagnostic tool in the evaluation of pediatric gastrointestinal disorders.

Materials and Methods

This descriptive study was carried at Pediatric B unit, Hayatabad Medical Complex, Peshawar from 1st Oct 2018 to 30th Aril 2019. Consecutive, non- probability sampling technique was used. Patients 18 years old or younger who underwent gastrointestinal endoscopy at Gastroenterology Unit, Hayatabad Medical Complex, Peshawar were included in the study. Data on age, gender, indications and findings were collected from endoscopy reports. Statistical analysis was carried out with descriptive statistics using SPSS version 20. Mean and standard deviation were calculated for age and frequencies and percentages were calculated for gender and indications and findings. Results were presented in tabulated form.

Results

200 pediatric endoscopies were performed at the endoscopy suite of the Gastroenterology Unit, Hayatabad Medical Complex, Peshawar during the study period. Out of these 130 were esophagogastroduodenoscopies and 70 colonoscopies. 108 (83.07%) esophagogastroduodenoscoppies and 63 (90%) colonoscopies were reported positive. The mean age of the patients was 7.73±4.1 years with a range from 1-16 years.Out of them 126 (62%) were male and 74(38%) were female (Table 1) with age categories of 80 (40%) from age group <5 years, 91(45.5%) from age of 6-12 years and 29(14.5%) from 13-16 years of age(Table 2). Rectal bleeding was the most frequent indication accounting for 65 (32.5%) cases followed by hemetemesis 37 (18.5%), chronic diarrhea 25 (12.5 %) and vomiting 24 (12%). Other indications were acid/corrosive ingestion in 16 (8%), dysphagia 12 (6%), abdominal/epigastric pain 8 (4%), foreign body ingestion 6 (3 %), anemia work up 5 (2.5%), melena 2 (1%) (Table 3). Esophageal strictures were the most common finding occurring in 34 (17%) of patients followed by rectal polyps 30 (15%) and esophageal varices 20 (10 %), celiac disease 16 (8%), reflux esophagitis 12 (6%), colonic polyps 10(5%), internal hemorrhoids 10 (5%), foreign bodies 7 (3.5%), gastric varices 6 (3%), rectal ulcers, infective colitis and gastritis 4(2%) each, gastric erosions, duodenal ulcers and Crohn`s disease 3(1.5%) each and achalasia, esophageal web, duodenal erosions and worm infestation 2 (1%) each (Table 4).

Table 1. Distribution of patients by gender

Gender	Frequency	Percentage
Male	**126**	**63%**
Female	**74**	**37%**

Table 2.Distribution of patients by age categories

Age Category	Frequency	Percentage
Less than 5 years	**80**	**40%**
6-12 years	**91**	**45.5%**
13-18 years	**29**	**14,5%**

Table3. Indications for Endoscopy

Indications for Endoscopy	Frequency	Percent
Bleeding PR	65	32.5
Hemetemesis	37	18.5

Chronic Diarrhea	25	12.5
Vomiting	24	12
Acid /Corrosive ingestion	16	8
Dysphagia	12	6
Abdominal Pain/Epigastric Pain	8	4
Foreign Bodies	6	3
Anemia Work Up	5	2.5
Melena	2	1

Table 4. Diagnostic findings of Endoscopy among children

Findings	Number	Percentage
Esophageal Stricture	34	17
Rectal Polyp	30	15
Esophageal Varices	20	10
Normal EGD	19	9.5
Celiac Disease	16	8
Reflux Esophagitis	12	6
Colonic Polyps	10	5
Internal Hemorrhoids	10	5
Normal Colonoscopy	7	3.5
Foreign Body	7	3.5
Gastric Varices	6	3
Solitary Rectal Ulcer	4	2
Infective colitis	4	2
Gastritis	4	2
Gastric Erosions	3	1.5
Duodenal Ulcer	3	1.5
Crohn's Disease	3	1.5
Worm Infestation	2	1
Esophageal Web	2	1
Duodenal Erosions	2	1
Achalasia	2	1
Total	200	100

Discussion

The most common indication for endoscopy in our study was rectal bleeding found in 65 (32.5%) subjects. Other studies report it in 27% and 35%.[3,4] In our study rectal bleeding accounted for 92.8% of total colonoscopies. Out of these 30 (42%) cases were due to rectal polyps, 12 (17.1%) internal hemorrhoids, 10 (14.2%) colonic polyps, 4(5.7%) rectal ulcers, 3(4.2%%) infectious colitis and 3(4.2%%) due to Crohn`s disease. Wajeehuddin et al have reported rectal polyps in 56.25% patients with rectal bleeding and Khushdil et al in 58.75%.[5,6]

Hemetemesis was second most frequent indication in our study occurring in 37 (18.5%) patients. Other studies have reported it in 14.9%, 15% and (27.6%) patients.[3,7,8] Endoscopic findings in these patients included esophageal varices in 19(51.3%), gastric varices 5(13.5%), gastric erosions 5(13.5%), reflux esophagitis 3 (8.1%), and duodenal ulcer, duodenitis and gastric ulcer 1 (2.7%) each.

Chronic diarrhea was found in 25(12.5%) in our study subjects while Lee reported it in 25.7%.[9] Celiac disease was documented in 14(56%) while endoscopy was reported normal in 11(44%). Celiac disease has been reported in 55% in another study.[3]

Vomiting was the indication in 24 (12%) cases with the underlying findings of esophageal

stricture in 11 (45.8%), reflux esophagitis 4 (16.6%),foreign body and duodenal 1 (4.1%) each and normal endoscopy in 7 (29.1%). Vomiting as an indication for endoscopy has been reported in 12% by Khan MR et al and 15% cases by Mudavi et al. [4, 10]

Acid and corrosive ingestion accounted for 15 (7.5%) cases with associated finding of esophageal strictures in all patients. Caustic ingestion by children is considered a global health issue with each type of ingestion associated with significant short and long term complications, so that prevention is the mainstay of tackling this problem because management is expensive and difficult.[11, 12]

Dysphagia was the indication in 12 (6%) cases. Other reports also document similar frequency for this indication.[4] The underlying conditions included esophageal strictures in 7 (53.3%), reflux esophagitis, achalasia, duodenal web in 2 (16.6%) each and duodenal erosion in 1 (8.3%) cases. Dysphagia may have a negative impact on dietary intake and thus impair the growth and development in children. Therefore, accurate diagnosis and appropriate treatment of the underlying condition is imperative.[13]

Foreign Bodies were found in 7(3.5%) of patients in this study with coins in 4 (2%), magnet in 2 (1%)and food bolus in 1 (0.5%) subjects found on endoscopy. Foreign body ingestion in children is very common and majority of these are passed spontaneously without complications, 10%–20% are removed endoscopically. [14]

In 5 (2.5%) subjects endoscopy was requested as part of anemia work up, with 2 (40%) associated with Celiac disease, 2 (40%%) gastric erosions and 1 (20%) normal endoscopy. Khan el documented it 2.1% children undergoing endoscopy.[4] Celiac disease in children with anemia referred for endoscopy has been reported in 26.3%.[15]

Abdominal/epigastric pain occurred in 8(4%) of the subjects with the associated findings of esophageal varices and reflux esophagitis and duodenal erosions 2( ) each Crohn`s disease in 1 (%) each and normal endoscopy in 3 (%) cases. Functional abdominal pain is common, but in children referred to gastroenterologists, the proportion of organic causes including peptic esophagitis, gastritis, gastroduodenitis, peptic ulcer disease, and inflammatory bowel diseases, is higher and with the use of endoscopy in the evaluation of pain, organic causes can be identified in as much as 50% of cases of abdominal pain. [16, 17]

Melena occurred in 2 (1%) patients in this series. The clinical spectrum of gastrointestinal bleeding in children is broad, ranging from subtle laboratory findings to dramatic clinical presentations. [17] Overt upper gastrointestinal bleeding usually presents as melena or hematemesis and endoscopic evaluation can be performed to diagnose and potentially treat the source of bleeding.[18,1920,21]

Conclusion

Endoscopy in pediatric patients is a useful diagnostic tool for evaluation of pediatric patients with a variety of gastrointestinal problems even when performed in an adult endoscopy unit.

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