

HISTOPATHOLOGICAL FINDINGS OF BIOPSY SPECIMEN IN CHILDREN PRESENTING WITH LOWER GASTROINTESTINAL BLEEDING

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ABSTRACT

Objective: The aim of this study was to determine the frequency of different histopathological findings of biopsy specimens obtained through colonoscopy in children presenting with lower gastrointestinal bleeding.

Methodology: It was a descriptive cross sectional study which was carried out at the department of Pediatrics Military Hospital, Rawalpindi, and Armed Forces Institute of Pathology (AFIP) Rawalpindi from June 2010 to 19 February 2012. 80 biopsy specimen obtained through fibre-optic colonoscopy were included in the study and the histopathological findings reported by consultant Pathologist were recorded. Data was analysed using SPSS version 10.

Results: A total of 80 biopsy specimens were included in the study. Out of these, 47 (58.75%) patients had polyps in colon. Histopathological examination revealed juvenile polyp to be the most common finding; all 47 patients revealed juvenile polyps. 13 patients had chronic non specific colitis. 11 cases were found to be normal. Only 03 had evidence of ulcerative colitis while 06 specimens revealed no specific findings.

Conclusion: Histopathologically, juvenile polyp is the major cause of LGIB in children in our set up which is also found in other national and international studies.

Key Words: Lower GI Bleed, Histopathology, Juvenile Polyp, Ulcerative Colitis, Colonoscopy.

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INTRODUCTION

Lower Gastrointestinal Bleeding (LGIB) indicates that the site of bleeding is distal to the origin of ligament of Treitz¹. The incidence of LGIB in children in various Western reports is estimated to be about 20 in 100000 per year^{2,3}. However there are no population based studies showing the exact incidence in Pakistan except a very few done in adult subjects. The diagnostic work up for LGIB includes a thorough history taking and physical examination along with certain investigations including a colonoscopy, if indicated from history and examination².

Lower gastrointestinal bleeding, although common, is usually self limited; so that adequate time is available for diagnosis with careful history and physical examination⁵ along with colonoscopic findings and histopathological confirmation⁶. LGIB is a common cause of visits to the clinics; but its exact epidemiology especially with

reference to histopathology has not been well studied⁷⁻¹¹. Most of the causes are usually benign, and require little or no treatment, for example, anal fissure, juvenile polyps, but sometimes LGIB may be due to a more severe and at times life threatening conditions, like Intussusception, Meckel's diverticulum, midgut volvulus and peptic ulcer disease^{12,13}. Localizing the source of bleeding and confirming the finding on histopathology is important in the management of these children^{8,9}. Juvenile polyps, also called retention polyps because they contain mucin cysts, occur in children less than 10 years of age¹⁴. Juvenile polyps are hamartomas, which are rare in the first year of life and are thus thought to be acquired¹⁵.

Polyps are the most frequent gastrointestinal tumor in the pediatric age group and the most frequent cause of lower gastrointestinal bleeding during childhood while in adults the most frequent causes are non specific colitis and colorectal carcinoma.¹⁷ A recent study done

on Chinese children showed incidence of colonic polyps to be 29%, Crohns disease (CD) 15%, and Ulcerative Colitis (UC) 1.5%¹⁶.

The aim of this study was to determine the frequency of histopathological causes of lower gastrointestinal bleeding in pediatric patients in our set up.

METHODOLOGY

This cross sectional descriptive study was carried out on children presenting to pediatric OPD or admitted in wards at the department of Pediatrics, Military Hospital, Rawalpindi, from June 2010 to February 2012. Total of 80 pediatric patients from 1 to 18 years of age and of both genders presenting with painless LGIB for more than four weeks were included in the study. Patients with history of haematemesis, malena, anal fissure or hemorrhoids established by per rectum exam/proctoscopy and acute infectious bloody diarrhea were excluded from this study. Permission was sought from hospital ethical committee. Every child was assigned a serial number. Detailed history was taken and all the information entered in the patient Performa. Fiberoptic colonoscopy was performed in all children after obtaining informed consent from parents/guardians about the procedure as well as about inclusion of results in research. Biopsy specimen were taken from all suspicious lesions and sent to Armed Forces Institute of Pathology (AFIP) to be reported by a consultant histopathologist. The histopathology reports were also entered in patient Performa. Data was analyzed using SPSS version 10. Descriptive statistics were used to calculate Mean \pm S.D. of numerical data, e.g., age. Categorical data like gender and histopathological findings were analyzed by their frequencies and percentages.

RESULTS

A total of 80 children with age range of 1-18 years (5.83 \pm 2.89 years) with LGIB underwent colonoscopy to obtain biopsy specimen in order to determine the histopathological causes of lower gastrointestinal tract bleeding. There were 53 (66.25%) boys and 27 (33.75%) girls with male: female ratio of 1.96: 1. The majority of children n=54 (67.5%) were between two and six years of age.

The most common colonoscopic finding was polyp. In 47 (58.75%) patients, there was polyp in colon with various sizes and numbers; all were resected, and sent for histopathology findings. Histopathology of all 47 cases revealed juvenile polyps. Polyps were found in all age groups included in the study. The highest frequency of juvenile polyp was observed in those aged four years; 16 (80%) of 20 patients aged four years had

polyp. Thirteen (16.25%) patients had chronic non specific colitis. Only 03 (3.75%) had features of ulcerative colitis on histopathology. 06 (7.5%) patients revealed no specific findings. 11(13.75%) cases were found to be normal.

DISCUSSION

Bleeding per rectum is always an alarming symptom and creates panic in both parents and the patients. It is one of the common reasons for which children are referred to pediatric surgeons and gastroenterologists³To find out the cause of LGIB, a detailed history, a thorough physical examination, including a digital rectal examination and various investigations including a colonoscopy should be carried out¹⁸. Colonoscopy is the common investigations performed in patients presenting with LGIB which should be performed after cessation of acute hemorrhage and adequate bowel preparation¹⁹.

The causes of LGIB are different in children than adults. Most causes of LGIB are usually benign and require little or no treatment e.g., anal fissure or juvenile polyp. Sometimes, these symptoms point to more serious and life-threatening conditions²⁰. After a thorough history and detailed physical examination, one may go for colonoscopy which is the procedure of choice for finding polyps or any other mucosal lesions leading to LGIB. Polyps are the most common cause of painless rectal bleeding²¹. In our study, 80 colonoscopies were done in order to take biopsy specimen to find out the causes of LGIB. In 78.75% of our patients, rectal bleeding was the only symptom. In the study of Motamed et al, it was 87%²⁴. In the study of Arvola, et al,¹⁸ there were 80% presenting with only rectal bleeding. We didn't have any child who has abdominal pain with rectal bleeding probably because our sample size was small. We found juvenile polyp in 58.75% of patients which is quite close to the findings of other studies from Pakistan like Wajeehuddin and Ali Raza Brohi found it to be 56.25%²⁵. However it is quite different from other studies like Motamed, et al study who found polyp in 34.7% of patient²⁴ while Clarke, et al, reported polyp in 10% of their subjects³; in a study on Hong Kong Chinese children polyps were found in 28.04%¹⁶. Our rate was however less than the frequency of 75% reported by Mandhan²⁰. However in all of these studies, the most common cause of LGIB was juvenile polyps and it was also the finding of our study.

The peak age in patients with polyps in our study was four and six years; Wajeehuddin and Brohi found it to be five to ten years²⁵. In study of Motamed et al²⁴ it was four and five years. In Mandhan's study²⁰, it was six years. In another study conducted by Motamed et al in Shiraz²², the mean age was found to be 5.7 years.

Inflammatory bowel disease is global in distribution²³. In our study 13 (16.25 %) specimen had evidence of chronic non specific colitis on histopathology and only 3 cases (3.75 %) had definitive diagnosis of ulcerative colitis. One biopsy specimen showing evidence of non specific colitis on colonoscopy was found to be normal on histopathology. In a study of Saleem, et al it was found to be 16 %⁴ while the study on Hong Kong Chinese children found it to be 15.85 %¹⁶.

Biopsy specimen of 11 (13.75%) patients was normal while 06(7.50%) specimen had no specific findings on histopathology.

CONCLUSION

Etiologies of LGIB are numerous but in painless bleeding, juvenile polyps are on the top of the list followed by IBD. Considering the higher prevalence of polyps in children we suggest that when LGIB occurs in children, colonoscopy should be among one of the first diagnostic procedures to rule out juvenile polyps. Biopsy specimen must be taken in all suspicion lesions to confirm the diagnosis by histopathological examination. Larger studies are required to determine the exact prevalence of the various causes of LGIB using the colonoscopy. This will require more pediatric gastroenterologists doing pediatric colonoscopies which till now is done in very few centers of Pakistan.

RECOMMENDATION

Our research needs to be verified in larger patient groups in other centers of Pakistan in order to document population based statistics for Pakistani children.

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CONTRIBUTORS

AK planned the study and wrote the manuscript. SA carried out colonoscopies. SS, EE and AA helped in data collection and manuscript writing. GAJ helped with the histopathology reports. All authors contributed significantly to the final manuscript.