Original Article

Epidemiology and Pattern of Colonic Diverticulosis in Patients Undergoing Lower Gastrointestinal Endoscopy : A Descriptive Study at Hayatabad Medical Complex Peshawar

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ABSTRACT

Objective: To find out the epidemiology and pattern of colonic diverticular disease in patients undergoing lower Gastrointestinal (GI) Endoscopy.

Study Design: Descriptive observational study

Place and Duration of Study: This study was conducted at the Department of Gastroenterology at Hayatabad Medical Complex Peshawar from 12th December 2022 till 25th March 2023.

Materials and Methods: The study was carried out after approval from the hospital's ethical committee. Informed consent was obtained from all patients who were included in the study. Patients undergoing screening, diagnostic and therapeutic colonoscopy aged 40 to 80 years were enrolled. Diverticular disease was confirmed by the presence of out-pouching of colonic mucosa through its wall, forming a sac-like structure. The number and location of the diverticula were noted.

Results: A total of 184 patients were enrolled. Diverticular disease was observed in 28 patients (15.2%). The mean age of the patients was 59.23±11.873 years. Male to female ratio was 1.7:1. Sixty-six participants (35.9%) were 61-70 years old. A statistically significant association was observed between age and diverticulosis. The likelihood of the disease increases with advancing age. The total number of male participants was 116 (63.0%), of which 23 patients (19.8%) had the disease. Left-sided was most affected in 13 patients (46.2%). Multiple diverticula were found in 19 patients (67.8%).

Conclusion: The current study demonstrates that colonic diverticulosis is less frequent (15.2%) in our setup. Among patients with diverticulosis in our setup, it is more prevalent in elderly males, and multiple diverticula affecting the left-sided colon is the most frequent colonoscopic finding in such cases.

Key Words: Colonic Diverticulosis, Epidemiology, Lower GI Endoscopy

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INTRODUCTION

Colonic diverticulosis is a common gastrointestinal disorder characterized by the presence of diverticula, which are sac-like protrusions of the colon's wall.[1]

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Despite being generally asymptomatic, it represents a significant public health burden, possibly due to its consequences, such as diverticulitis or diverticular bleed that may necessitate surgical intervention[2].

Diverticula formation is believed to originate from confined fragility in the colon's wall. The disease is usually at the point of blood vessel entry which is a potentially weak point. Underlying medical conditions leading to elevated intraluminal pressure, such as old age, low fiber and high-fat diet, genetic predisposition, inappropriate colonic movement, obesity, physical inactivity, and variations in colonic anatomy are thought to give the final blow[3,4] .

Diverticulosis varies with region and race. It is frequent in the Western population, with rates ranging from 5% to 45%, although its prevalence is expanding globally, most likely due to lifestyle changes. It develops mainly in the sigmoid colon in around 95% of patients, and diverticula detected in the left section of the colon are

frequently mistaken[5]. The frequency varies from 13% to 25% in Asia, with the right side of the colon being more typically afflicted[6]. Furthermore, the frequency varies with age, ranging from 5% in people aged 40 to 50 to 70% in those aged 80[7].

Diverticulosis is frequently asymptomatic in 70% to 80% of patients and is discovered through testing conducted for other reasons[8]. It may be clinically evident as a result of diverticular bleeding (5%-15%), which frequently results in painless bleeding per rectum, or diverticulitis (4%), which presents with pain, fever, or complications such as perforation, abscess development, fistula, peritonitis, and sepsis[9]. We did this study due to the significant morbidity and mortality associated with diverticulosis and the lack of local studies exploring illness prevalence. As a result, the goals of our study were to: figure out the prevalence of illness, • Assess challenges caused by diverticula, and • Investigate the relationship between the location of diverticula and difficulties.

MATERIALS AND METHODS

Setting: This observational study was carried out at the Department of Gastroenterology at Hayatabad Medical Complex, Peshawar. Participants were enrolled during the period from 12th December 2022 till 25th March 2023.

Participants: Both male and female patients aged 40 to 80 years undergoing colonoscopy for screening, diagnostic or therapeutic purposes were recruited. Patients with poor bowel preparation (Boston Score less than 6), incomplete colon examination, and hemodynamically compromised patients were excluded. Informed consent was taken from all enrolled participants.

Data collection: A detailed history and physical examination was performed, and an indication for colonoscopy was noted. Bowel preparation was carried out as per standard protocol with a split-dose polyethylene glycol regimen. Colonoscopy was performed with a standard white light colonoscope by an experienced endoscopist. Adequate analgesia and sedation were administered to the patient and positioned in the left lateral. Colonoscope was introduced and advanced till the terminal ileum. The presence of diverticula, number, and location was noted during the scope withdrawal. Diverticula was diagnosed by the presence of outpouching of colonic mucosa through its wall, creating a sac-like appearance.

Data analysis: Data analysis was performed using the statistical analysis program IBM SPSS version 23. For quantitative variables, mean and standard deviation were computed while categorical variables were presented as frequencies and percentages. Effect modifiers were controlled through stratifications. Post-stratification chi-square test at a 5% level of significance was applied. P-value ≤0.05 was considered statistically significant.

RESULTS

A total of 184 patients were enrolled. Diverticulosis was observed in 28 patients (15.2%). Out of the 184 patients, 116 were male (63.0%). Among them, 23 patients (19.8%) had diverticulosis compared to 5 female patients (7.3%). This relation of diverticulosis with respect to gender was statistically significant (p-value <0.05), with disease occurring more frequently in men. Age of the patients ranged from 40 to 80 years. The mean age of the patients was 59.23±11.873 years. Age-wise distribution of patients was such that the majority of the patients belonged to the age group 61-70 years, comprising 66 patients (35.9%), followed by the 51-60 years age group that spanned over 59 patients (32.1%), 43 patients (23.4%) had age 41-50 years while the remaining 16 patients (8.7%) had age 71-80 years as shown in table 1. The association of age with respect to the presence of diverticulosis was statistically significant (p <0.05).

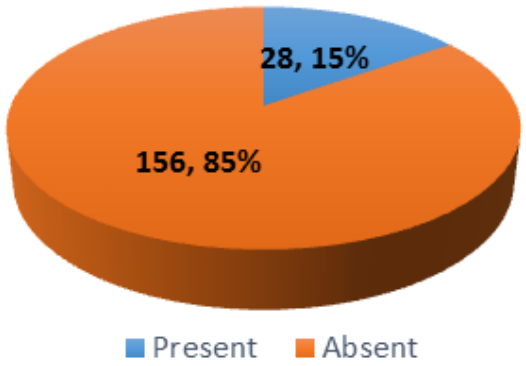

Figure No. 1: Shows the frequency of diverticulosis

Table No. 1: Distribution of patients according to various groups

Age groups	Frequency and %age
41-50 years	43 (23.4%)
51-60 years	59 (32.1%)
61-70 years	66 (35.9%)
71-80 years	16 (8.7%)

Alternating bowel habit was the most common indication recorded in our study which was observed in 73 (39.7%) patients . Pain abdomen was dominant complaint in 61 patients (33.2%), 39 patients (21.1%) were complaining of bleeding per rectum and the remaining 11 patients (6%) were grouped into miscellaneous causes which comprised of screening for tuberculosis or non-specific colonic or ileocecal thickening on imaging. No statistically significant association was observed between presenting complaint and presence of diverticulosis (p >0.05).

With respect to anatomical distribution, 13 patients (46.2%) had left sided diverticulosis while 07 patients

(25.0%) had right sided diverticulosis and the remaining 08 patients (28.6%) had involvement of both sides of the colon. The number of diverticula varied widely. Multiple diverticulae were more prevalent and observed in 19 patients (67.8%) patients while 02 diverticula were observed in 05 patients (17.8%) and remaining 04 patients (14.3%) had single diverticula.

DISCUSSION

Diverticular disease is a substantial cause of morbidity and medical expenses, therefore identifying trends and controllable variables that cause illness could enhance the result.[10]

The key results were revealed in this investigation. The occurrence of diverticulosis in our setup was uncommon, which might be attributed to culture and eating patterns. About two thirds of the patients with diverticulosis were males, with the majority of them being elderly to old age, which could be connected with inherent sex hormones, in which ovarian steroid hormones can minimize the likelihood of diverticulosis through favorable impacts on collagen and elastin. Moreover, with increasing age the structure of underlying connective tissue in the colon is compromised.[11] The most common reasons for a colonoscopy were change in bowel pattern, GI discomfort, and bleeding per rectum, and some patients had additional other reasons.

In contrast to the results of the previous studies, the disease was more frequent on the left side of the colon with sigmoid colon being the most affected.[12] Moreover, multiple diverticulae was a common finding compared to two or less than two diverticula. This pattern is prevalent in Asian patients, which may be explained by differences in humoral or neural system and fundamental variation of the colon.[13] Finally, diverticular bleeding was the most common consequence of diverticular disease, and it was related to disease site. These findings are consistent with earlier research.[14]

In a study performed on European population, it was documented that the prevalence rate of diverticulosis illness is 27% and increases dramatically with age with no significant difference based on gender. Polyps were more common in diverticula patients.[15] These results are in coherence with the results of this study. Much lower prevalence was reported through a study carried out on sub-continental population with overall prevalence of 9.9% and predominantly affecting elderly men. However, similar to our results the disease mostly affected the left side of the colon.[16] Another research carried out in Saudi Arabia determined that the frequency of diverticulosis was 7.4%, rising with age and in men. The colon's left side was the most affected site.[17]

They discovered that the prevalence of diverticulosis is 20% in Japan, and that it rises with age and in men. The right side of the colon was the most impacted, and 1.5% of patients experienced diverticular haemorrhage.[18] Authors found that the prevalence of diverticulosis was 7.5% in Sudan and that it increased with age and in men. The left side of the colon was the most affected, and the most common abnormalities seen by colonoscopy were fistula and polyps.[19,20]

CONCLUSION

Colonic diverticulosis is less frequent (15.2%) in our population and mainly affects elderly males. It most commonly involves the left side of the colon in our population. Early identification of colonic diverticulosis is critical to minimize the associated morbidity and other potentially fatal complications like diverticular bleeding and diverticulitis, particularly in the presence of risk factors such as obesity.

Author's Contribution:
Concept & Design of Study:
Drafting:
Data Analysis:
Revisiting Critically:
Final Approval of version:

Conflict of Interest: The study has no conflict of interest to declare by any author.

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