SCIENTIFIC ARTICLE

North Colombo diverticular disease snap shot audit (VISTA study): a collaborative research initiative

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Abstract

Introduction

Diverticulosis and diverticular disease (DD) is a common occurrence in clinical practice in the local setting with a lack of documented literature. A snapshot audit was conducted at North Colombo Teaching Hospital (NCTH) to ascertain the disease burden in clinical practice as a pilot study to assess feasibility and response rate for a nation wide snapshot audit.

Methodology

All surgical and gastroenterology units at NCTH were requested to enter the data between 1st January 2022 to 30th of June 2022 on all patients presenting with DD or those detected with diverticulosis during screening colonoscopy. Prospective data collection was done using RedCap© data capturing platform.

Results

Out of the 8 units invited (general surgery – 5, GI surgery – 1, gastroenterology – 2), 5 units participated (general surgery – 2, GI surgery – 1, gastroenterology – 2); response rate is 62%. A total of 46 patient records (median age- 68 years; range 29-86; female 51%) were received within 6 months. Of the total 54.3% had symptomatic uncomplicated diverticular disease (SUDD) while 33% were detected with diverticulosis at screening. Only 13% (n=6) required inward care (bleeding – 3, diverticulitis – 2, perforation – 1) and detected using colonoscopy in 4 and CT scan in 2. In the DD group, 20% (6/31) had complicated DD while 80% had Symptomatic Uncomplicated Diverticular Disease (SUDD).

Conclusion

In this pilot study, a majority of the patients with DD presented with SUDD while around 20% came with complicated DD. The response rate from collaborators was satisfactory. The secure online database usage is feasible and will be used for a national level study in the future to assess the disease burden in the healthcare setting in Sri Lanka.

Introduction

Diverticulosis and diverticular disease (DD) is increasing in prevalence globally and is seen now commonly among the Asian populations as well . The exact pathophysiology of the disease is not well understood, but is believed to be out-pouchings of the colonic mucosa caused by an increased intraluminal pressure . The disease prevalence is known to increase with age where around 60% of individuals above 80 years have been reported in western literature (6). However an increase of diverticula amongst younger population has been reported lately (4).

Nomenclature related to colonic diverticula has caused confusion amongst clinicians for some time. There have ben several recent attempts at consensus on diverticula related conditions . Most patients with diverticula are asymptomatic and are diagnosed at screening colonoscopies. This condition is termed diverticulosis. The term diverticular disease is used to describe symptoms due to diverticula such as abdominal pain, diarrhea or when complications such as bleeding and inflammation occur. Complications occur when a diverticulum gets obstructed with a faecolith and a blood vessel is damaged or bacterial overgrowth occurs . The disease can cause complications varying from lower gastrointestinal bleeding, inflammation leading to perforation and abscess formation or fecal peritonitis . Colovesical or colo-enteric fistula formation is a rare complication. Complicated DD can result in significant morbidity, loss of time from work and multiple surgeries or permanent colostomy due to emergency Hartmann's procedure. The DAMASCUS study was a recently conducted global collaborative to ascertain the prevalence of diverticulitis across continents which is yet to be published .

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There is a lack of data with regards to the prevalence or complications of diverticulosis and divertulitis in Sri Lanka. Personal communications from practicing clinicians revel an increase of the disease in the clinical setting. DD burden is increasing in the healthcare setting globally. The disease was once regarded as an entity common only in the western populations and at present there is an increasing trend in communities including that of Asians. Traditional belief was that diverticula of the right colon was common in the Asian populations and was of congenital origin as opposed to the left sided diverticula seen in the west acquired due to dietary habits.

DD can cause morbidity due to bleeding, inflammation, perforation, fistulation or stricture (8, 13, 14). The treatment modality will vary based on the severity of illness form oral antibiotic treatment in uncomplicated diverticulitis to colonic resection with stoma formation in complicated acute or chronic diverticulitis (8, 15).

In an Italian study comparing surgical versus conservative strategies the authors reported a better quality of life amongst those who underwent surgery (16). The Dutch DIRECT trial also reported similar result while Justin and colleagues reported better quality of life for patients undergoing surgery for recurrent uncomplicated diverticulitis (17-19). This would indicate that an increase in DD in the population would necessitate more surgical intervention as the disease is progressive in nature and is likely to give rise to recurrent attacks.

Only few isolated reports presented at local forums from Sri Lanka are available and no formal assessment has been done on the prevalence or management strategies. The aim of the study was to assess the burden of all colonic diverticula related events in clinical practice at the North Colombo Teaching Hospital. This study was intended as a pilot study to assess the feasibility and the infrastructure for a much wider nationwide snapshot-audit.

Methodology

VISTA was s a collaborative, prospective observational study (snap-shot audit), recruiting patients from general surgical, gastroenterological and gastrointestinal units at the North Colombo Teaching Hospital over a 6-month period. All encounters with diverticulosis and DD viz; asymptomatic patients with multiple diverticula detected at colonoscopy, symptomatic patients detected at colonoscopy, those presenting with symptoms or complications diagnosed with colonoscopy or imaging (Computer tomography) were included. The secure online platform REDCap was used for data capturing. All 8 units were invited to register for the study via REDCap access links.

All patient contacts were reported from the 1st of January 2022 to 30th June 2022. Demographic data, presentation, method of diagnosis, mode of management and discharge details were captured. All descriptive data are reported in percentages and numbers. Ethical clearance was granted by the ERC at the Faculty of Medicine, University of Kelaniya (P/145/10/2021).

Results

The response rate for the invite was 62% (5 out of 8 units). The 5 units encountered a total of 46 cases of diverticulosis and DD during the 6-month study period. The median age of presentation was 68 years (Range: 27-86) and 51.1% were female (Table 1). Of the total 33 % (n=15) had diverticulosis (asymptomatic individuals detected at screening colonoscopy) and 67% had DD. Of the patients with DD, 54.3% (n=25) were detected at colonoscopy performed due to symptoms and 13% (n=6) were treated as in-ward patients for symptoms or complications. Abdominal pain (40%) and rectal bleeding (24%) were the commonest indications for colonoscopy (Figure 1). Diverticular disease of the right colon was observed in 46%, while 30% had right-sided disease and 24% had a pan-colic distribution. From the patients treated in-ward, 50% (n=3) were admitted with bleeding, 33% (n=2) with uncomplicated diverticulitis and 16.7% (n=1) was due to diverticulitis with perforation. Out of the total cases, the complicated diverticulitis rate was 2.1%. Two out of the three patients with bleeding received blood transfusion while those with diverticulitis were managed with intravenous and oral antibiotics equally. The patient with perforation and abscess formation was managed with open drainage. Stool softeners were used in the management of 25 patients (54%), anti-spasmodics in 6 patients (13%) and probiotics in only 4 patients (8.6%).

Discussion

Diverticulosis and DD is a less well-studied disease entity in Sri Lanka and in the South Asian region. Earlier thought to be a disease of the west, it is now being increasingly encountered in clinical practice both as an incidental finding and symptomatic disease. A study from Italy has reported an increase of hospital admissions due to complicated DD in patients between 18 and 45 years of age (2). Several Asian studies have also reported an increase in the prevalence of DD and diverticulosis in the population during the past decade (10, 11). In the current study, the age range is from 18 to 86 while 10% (n=5) are 50 years or less (Figure 2). Evidence suggest that a majority of the patients with diverticula are

asymptomatic and only about 10-15% will present with symptoms (12).). In the absence of a widespread structured colon cancer-screening programme Sri Lanka, detection of asymptomatic patients will be less. In the current study 25 patients (54 %) out of the 46 were detected due to symptoms that falls under the category of symptomatic uncomplicated diverticular disease (SUDD) . Right-sided diverticula were observed in 46% of this cohort. Similar preponderance for right-sided DD in Asian populations has been reported previously .

Kamalesh et al has reported a 9.9% prevalence of diverticulosis in an Indian cohort based on retrospective analysis of colonoscopic findings (3). Rajendra et al reported a similar prevalence amongst an Indian population from Malaysia . Apart from this, recent data on prevalence of DD in the South Asian region is lacking. However, these figures are derived from cohorts that had colonscopy hence the true prevalence will not be reflected. True prevalence of diverticulosis is unlikely to be ascertained, as it will entail performing colonoscopy or imaging for the general population. A comprehensive snapshot audit would allow recognizing the disease burden in the health care setting. CT imaging is regarded as more sensitive to detect the presence of diverticula in the colon . However CT is performed for patients suspected of diverticulitis and not as routine for symptoms related to diverticula. Both colonsocopically and image detected patients were included in this study in order to capture both diverticulosis and DD.

The VISTA study was conducted as a pilot and an initiative for collaborative research in the local setting. Multi centre collaborative studies have become the trend in producing useful real-life data in the recent past. The large number of observations achieved during a short period of time has lead to producing practice changing evidence at a faster rate. Use of online data capturing platforms such as REDCap has made such studies feasible while ensuring maximum data protection . The response rate of 62% from the participants for this study is high considering the reported response rates for multicenter studies in literature . Based on the feasibility assessment of the current study, a national level snapshot audit has been launched (National VISTA). This stage expects to recruit a majority of surgeons and gastroenterologists from around Sri Lanka to contribute in a multicenter audit. This will enable the investigators to ascertain the disease prevalence, complication rates and management practice at a national level.

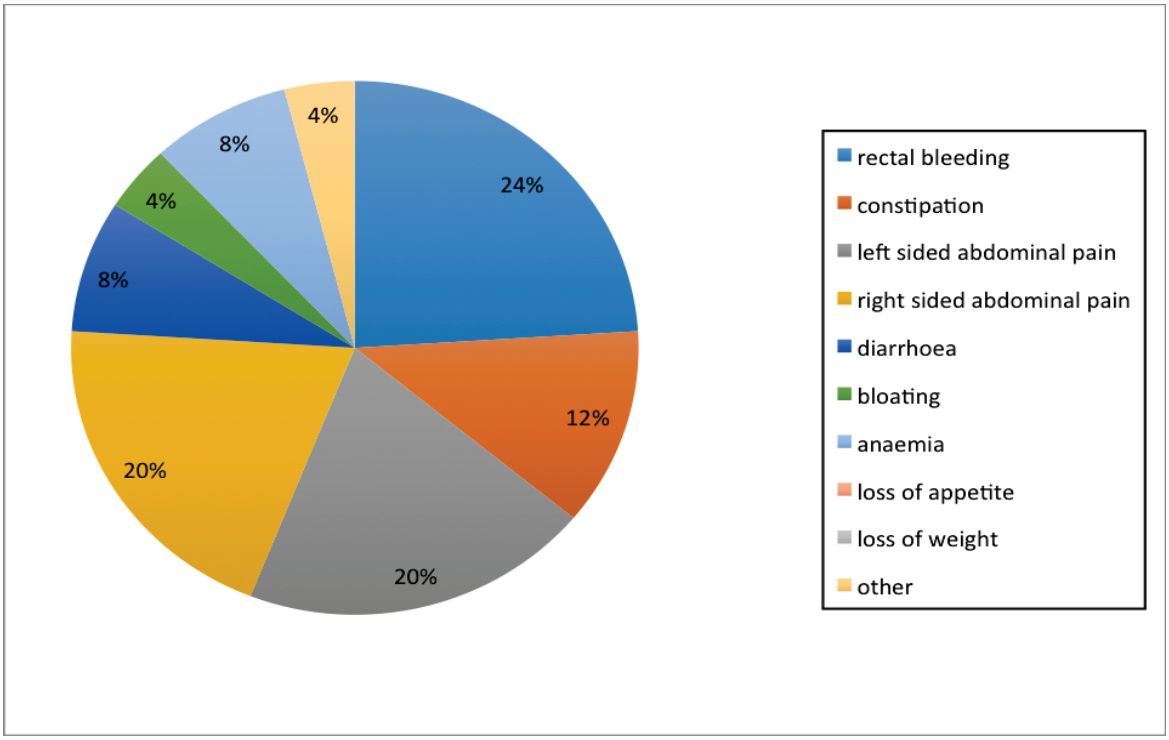

Figure 1. Indications for colonoscopy in those who had symptomatic uncomplicated diverticular disease (SUDD)

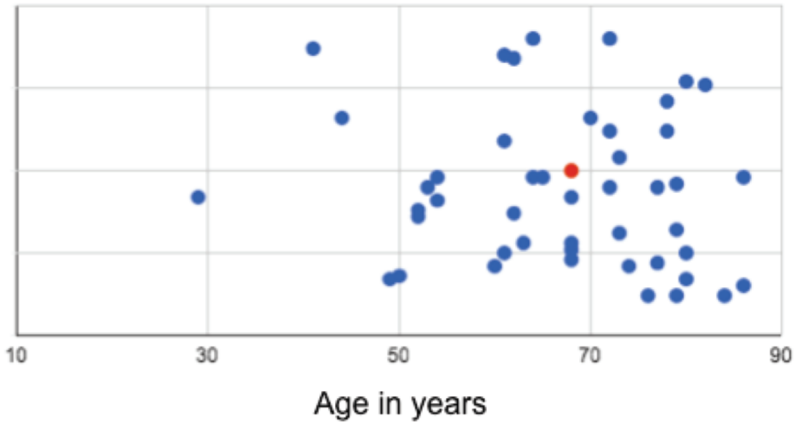

Figure 2. Age distribution of the cohort (median age is marked in red)

Table 1. Demographics of the cohort

	n	%
Total N	46	
Age (years)		
Median a	68	
Rang	18-86	
Sex		
Femal	51%	
Mode of detect		
Diverticulosis (At screening colonoscopy)	15	33%
Diverticular dis at colonoscopy		
symptor	25	54%
symptomati- ward	6	13%
Distribution		
right sid	21	40%
left side	14	30%
pan col	11	24%

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Author contributions

PC was involved in concept development, study design, data collection, data analysis, manuscript writing and critical appraisal. MN and SK were involved in the study design, data collection, data analysis and critically analysing the manuscript. DE was involved in concept building, setting up the data collection platform, data analysis and critically appraising the manuscript. CR, AF and HG were involved in study implementation, data collection and critical appraisal of the manuscript. All collaborators contributed with data collection and entry.

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