Original Article

Colonoscopy at El Obeid Hospital, Western Sudan

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ABSTRACT

Background: Colonoscopy is effective in screening, diagnosis and treatment of colorectal problems.

Objective: The objective of this study was to highlight the impact of colonoscopy service on the pattern and management of lower gastrointestinal diseases as appeared after its introduction for the first time in El Obeid, Western Sudan.

Materials and methods: The records of individuals who underwent colonoscopy at El Obeid Hospital were reviewed. The data were analyzed for gender, age, indications, pathology revealed and the outcomes of the procedures.

Results: Out of 160 colonoscopies performed, there were 108 males (67.5%). The age ranged between 17 and 85 years. The main indications were rectal bleeding, irregular bowel habits and lower abdominal pain. 28.1% of the individuals were found to be normal. 28.0% of the patients had colitis and 2.5% had diverticular disease. Cancer was diagnosed in 10.1% of cases while benign polyps were found in 7.5% of the patients and internal piles were seen in 14.4% of cases. 9.4% of the patients were emergency procedures for acute sigmoid volvulus. Apart from the discomfort and non-frequent nausea, no other complications like rectal bleeding or colonic perforations were encountered among the study group.

Conclusion: Colonoscopy is a safe and useful procedure. Expansion of the service and more training is recommended to supplement diagnosis and facilitate therapeutic measures.

Key words: Colonoscopy, Western Sudan.

Colonoscopy is a safe and effective mean of visual inspection of the large bowel from the distal rectum to the caecum. It may be carried out for diagnostic and or therapeutic reasons, but performing the procedure is technically demanding and operator dependent requiring continual training together with adequate equipment maintenance and disinfection. Although it was inaugurated four decades ago, many patients in the developing world do not yet get access to this service, and the Sudan is no exception. In this study we reflect our experience with this important health facility which was only recently introduced to our community.

El Obeid Hospital has 600 bed capacities with different clinical and para-clinical specialties serving a population of about 3.5 millions in the Kordofan States of Western Sudan. However, the service of modern flexible endoscopies only recently became available. Three endoscopists (a general surgeon and two general physicians) operate the endoscopy unit, in which the patients and equipment were cared for by four staff nurses well trained at Ibn Sina and Soba Endoscopy Units in Khartoum. The patients had bowel preparations with a 3-day semisolid or liquid diet, oral liquid paraffin 30 ml at night, or bisacodyl (Dulcolax) tablets or powder 20 mgs (two at night) for two days. All patients or their relatives sign an informed consent before the procedure.

MATERIALS AND METHODS:

An intravenous line was set up and continuous cardiorespiratory monitoring was done during each procedure while sedative drugs like pethidine, diazepam and midazolam were made available. Initially an Olympus video colonoscope, model CFQ140L was used, but later newer Pentax fibre optic endoscopes was introduced.

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Xylocaine gel 1% was applied to the scope in each case.

The present study is an audit of colonoscopies performed over two years. The indications, sex, age, pathology revealed and outcomes were the main addressed variables. The data statistics were done by SPSS PC packages version 17.5.

RESULTS:

There were 160 sequential colonoscopies performed during the study period. The age range was 17 to 85 years. The mean age was 51.5 years (± 15.3 STD). There were 108 males (67.5%). 90.6% of the procedures were elective.

The indications for colonoscopy were rectal bleeding (58%), lower abdominal pain (22%), irregular bowel habits including persistent diarrhea (10.6%) and massive abdominal distension in cases of acute intestinal obstruction due to volvulus of the sigmoid colon (9.4%).

The colonoscopic findings were that 20.6% of the patients had non-specific colitis; whereas 7.5% had frank ulcerative colitis. Polyps were found in 7.5% of patients, 2.5% had diverticular disease, 10% colo-rectal cancer and 14.4% internal hemorrhoids. Normal endoscopy was found in 45 patients (28.1%). The overall diagnostic yield was 71.9%.

Emergency colonoscopy was done in 15 patients (9.4%) presenting with acute sigmoid volvulus in which immediate decompression and de-rotation was performed. The patients were sent back after the procedures to their wards. All other routine colonoscopies were booked and done as outpatient procedures.

Three procedures were abandoned; one for inadequate bowel preparation and two due to patient's intolerance. One adverse cardiopulmonary event occurred for an elderly male with congestive heart failure which resolved on resuscitation. Apart from the discomfort and non-frequent nausea, no other complications like rectal bleeding or colonic perforations were encountered among the study group.

DISCUSSION:

Colonoscopy is becoming increasingly necessary for many patients in screening, diagnosing and treating colorectal disease[1]. This is the first report since this procedure became available in our community and our main purpose of this study was to reveal the indications, diagnostic outcomes and complications and compare that with the regional published experiences.

In our study the overall diagnostic yield was 71.9%, similar to the findings reported from Egypt (71.8%) [2] and Nigeria (79.6%) [3] but much higher than the diagnostic yield of 21% described from Kuwait[4]. The large difference in these findings may be due to institutional selection criteria and the differences in the spectrum of colonic diseases in different communities.

Bowel preparation prior to colonoscopy is extremely important and essential to maximize the benefits of the procedure[5].We need to adequately clear the fecal material to visualize the entire underlying colonic mucosa in-order not to miss lesions in the shortest procedure time. But, the preparation of the bowel must also be tolerable to the patient. We found bisacodyl was practical and well accepted by our patients than varying doses of polyethylene glycol (PEG), especially when large volumes or the adjuvant use of laxatives were needed.

The indications for colonoscopy were similar to other centres in the region[2, 3], the commonest cause being rectal bleeding (58%). The majority of the patients and their referring physicians were concerned about the possibility of cancer. Colorectal cancer is one of the most common cancers worldwide and its incidence is reported to be increasing in resource-limited countries, probably due to the acquisition of a western lifestyle[6]. Apart from direct visualization of cancerous lesions and biopsy of the specimen, current research has shown that most colon cancers arise from neoplastic polyps within the colon and that if these polyps are found early and removed, colon cancer can be prevented[1]. The diagnosis of cancer also remains suspicious in patients with lower abdominal pain and irregular bowel habits, who were together constituted 30.6% of the indications in our series. There

is a global movement to screen patients at risk of developing colonic cancer with wide acceptance among physicians for colonoscopy as a reference standard tool[6-8]. In our local setting lack of awareness of the disease, poor accessibility to healthcare facilities and the high cost of care are among the hallmarks of the diagnostic problem of the disease. As colorectal cancer screening programs for average risk patients are not implemented in our community the role of colonoscopy in detection of cancer and polyps in the colon is specifically indicated.

In this study the commonest cause of rectal bleeding was haemorrhoids (14.4%), followed by cancer (10%), polyps (7.5%), ulcerative colitis (7.5%) and diverticular disease (2.5%) in that order. This pattern is not different from regional reports[9], although haemorrhoids were found to account for 53.1%[10] and 58.1%[11] in other series. High diagnostic yield for colonoscopy and flexible sigmoidoscopy in the patients with frank rectal bleeding was also reported[12, 13]. It is noteworthy to consider that pathologies like ulcerative colitis and diverticular disease which were uncommon in our society are emerging probably due to the change in the food habits with increasing consumption of low-fibre western diets.

Emergency colonoscopy was done in 15 patients (9.4%) presenting with acute intestinal obstruction due to sigmoid volvulus. Deflation of the obstructed colon and de-rotation of the twisted bowel loop were successfully performed in all cases without any complication. Those patients were usually elderly, dehydrated and presenting late in poor clinical condition either in or impending septicaemia[14]. Endoscopic deflation allows time for correction of the fluids, electrolytes and toxaemia while the patient is observed for the development of bowel ischaemia in the wards. The patients were kept and booked later for definitive elective colectomy to prevent the expected high rate of recurrence. These findings were in-line with similar experiences reported from Spain[15] and Singapore[16]; especially in elderly patients[17].

The literature suggests that the colonoscopy perforation rate is about 1 in 1000[11]. Post endoscopy bleeding rates have been quoted from as low as 3 in 1000 to as high as 6 in 1000[6], with the standard being about 1%[6] and increasing with age[14]. However, none of these complications were encountered among our procedures which were mainly diagnostic.

The quality of endoscopic procedure performed is important[6]. The standard bench marks are that the colonoscopist should be able to reach the cecum in more than 90% of cases, should find and diagnose all significant pathologic lesions, should perform the colonoscopy in a reasonable amount of time and must be able to complete the procedure with minimal risk of complications and patient discomfort[18]. Some reports described successful procedures without any sedation[19]. Whether such guidelines are suitable for our patients and applicable in our settings need further research[20]. However, these parameters were not observed and well recorded in some procedures among our patients and hence no authenticated statement could be given here. The issue is the subject of a prospective study we look forward to reporting it in the near future.

This audit had some limitations. The standard bench marks regarding the quality of our procedures could not be well compared to other series. The interruptions of the service as a result of breakdown and unavailability of equipment had contributed to the small sample size during the study period. However; despite the challenges of poor equipment and training in a poor resource setting, colonoscopy can be performed by local endoscopists with reasonably good outcomes. As reported from eastern Sudan[21], the resilience of both nursing and medical staff to continue this service despite many adverse conditions and disadvantages augments the new culture that will continue to drive forward the future success.

CONCLUSIONS:

Colonoscopy is a safe and useful procedure for investigating patients with lower gastrointestinal complaints. Expansion of the service with the provision of more endoscopes, more relevant accessories and

training is recommended to supplement diagnosis and facilitate therapeutic measures. Further research regarding quality measures for colonoscopy and setting "standards" regarding compliance with these measures is needed.

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