

# Colonoscopy: Early Experience in National Hospital Abuja Nigeria

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**Abstract:** Colonoscopy has become one of the most important modalities in the assessment of the lower gastrointestinal lesions. This study focused on our early experience with colonoscopy documenting the indications and outcome in the first five years of Colonoscopy in National Hospital, Abuja, Nigeria. This was a retrospective analysis of demographic data, indications for colonoscopy, agents used for bowel preparation, type of anaesthesia used, endoscopic findings, and extent of colon intubation from the endoscopy unit register of National Hospital, Abuja between July 2007 and June 2012. Patients whose data were incomplete or procedure aborted were excluded. Two hundred and eleven patients had colonoscopy during the 5 year period. Only 153 patients fulfilled the inclusion criteria and their data analysed. Males were 107 (69.9%) and 46 (30.1%) were females given a male/female ratio of 2.3:1 Age range was 2years to 90years with a Mean of 48.02. The commonest indications were bleeding per rectum (33.3%), haemorrhoids (24.8%) and suspicion of malignancy of the lower gastrointestinal tracts (24.3%). The most common findings on colonoscopy in our study were haemorrhoids (47.7%) and malignancies (24.2%) of various parts of the large bowel. 12.4% of the patients had normal study. Our Cecal intubation rate was 75.8%. Majority of the lesions were found in the Anorectal region (69.9%) with only 17.7% in the rest of the Colon 24.2% of our findings were malignancies of lower intestinal tract. 97.3% of the malignancies were Adenocarcinoma. 83.8% of the malignancies were located in the left colon. Assessment of lower gastrointestinal symptom is incomplete without colonoscopy. Colonoscopy gives a good yield in well selected patients, it is safe and has low complication rate.

**Keywords:** Colonoscopy, Experience, Lower Gastrointestinal, Haemorrhoids, National Hospital, Nigeria

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## 1. Introduction

The examination of the colon with a flexible imaging tube (Colonoscope) is a standard procedure for some decades now. Fiberoptic endoscope was developed in mid- February 1957 [1]. Retrograde colonoscopy of the entire colon began in June of 1969 while endoscopic excision of polyps from the colon was first done in September of 1969 [2]. Since the beginning of Colonoscopy in June 1969, and endoscopic excision of polyps from the colon in September of same year, momentous advances have occurred over the years, and the two procedures are now widely accepted and practiced<sup>2</sup>. The facility for Colonoscopy is relatively rare in the developing countries. The first experience in Colonoscopy in Nigerian was by Arigbabu in Ile-Ife in 1978 [3]. The demand for colonoscopy has increased over the years because of increase in population, the relative safety and low complications of

the procedure.

Colonoscopy helps to visualise the lumen of the entire colon to the distal terminal ileum, take biopsies, stop bleeding points, remove polyps and suspected colorectal lesions and mark the base of removed lesions for easy of identification during further interventions. Colonoscopy is now an essential procedure in the screening, diagnosis and treatment of lower gastrointestinal lesions. Colonoscopy is indicated for accurate diagnosis and treatment of lower gastrointestinal diseases in patients presenting with positive faecal occult blood, bleeding per rectum, unexplained changes in bowel habit and suspicion of malignancy [4].

Colonoscopy is the gold standard for colorectal cancer (CRC) screening [4]. The American cancer society

recommends, starting lower GI endoscopy at the age of 50 years, for both men and women that they undergo a flexible Sigmoidoscopy every 5 years or a colonoscopy every 10 years [5]. People with a family history of colon cancer are often first screened during their teenage years. Colonoscopy screening prevents approximately two-thirds of the deaths due to colorectal cancers on the left side of the colon, and is not associated with a significant reduction in deaths from right-sided disease [6].

Many patients undergo colonoscopy in National Hospital Abuja for various indications yearly. There was no available data on Colonoscopy indications and findings from National Hospital Abuja. Therefore, this study was an analysis of indications for colonoscopy and findings in patients who presented with lower GI symptoms in the early years of endoscopy services in National hospital Abuja, Nigeria.

## 2. Materials and Methods

This is a retrospective analysis of the data of the endoscopy unit of National Hospital Abuja from July 2002 to September 2012. Colonoscopy started at this Unit in July 2007. National Hospital Abuja is a tertiary hospital which was established in 1999, located in the Central Business District of Abuja, the Federal Capital Territory of Nigeria and serves as a referral centre for the North-Central zone of Nigeria. The Endoscopy unit started in July 2002 and was the first endoscopy unit in Abuja.

### Patients and Exclusion

A total of 578 patients had gastrointestinal endoscopy in National Hospital Abuja between July 2007 and June 2012 out of which 211 had colonoscopy. Data on patients who underwent colonoscopy were collected from the register. All patients who had incomplete data and those in which the colonoscopy was abandoned for any reason were excluded from the study.

Data were obtained from the Endoscopy register maintained in the Endoscopy unit. Recorded information included age, sex, indications for colonoscopy, agents used for bowel preparation, type of anaesthesia used, endoscopic findings, and extent of colon intubation. Biopsy was done as indicated and at the discretion of the Endoscopist. The data were analyzed and reported in the form of tables and graphs. Ethical approval was obtained from the Ethics Committee of the National Hospital Abuja.

## 3. Results

A total of 211 patients had colonoscopy during the 5 year period. Only 153 patients' data were analysed after removal of patients that fulfilled the exclusion criteria.

### 3.1. Patient Characteristics

There were 107 (69.9%) males and 46 (30.1%) females with a male/female ratio of 2.3:1 (Table 1). Age ranged from 2 years to 90 years with a Mean of 48.02 (Table 2).

**Table 1. Sex Distribution.**

	Frequency	Percent
F	46	30.1
M	107	69.9
Total	153	100.0

**Table 2. Age Group.**

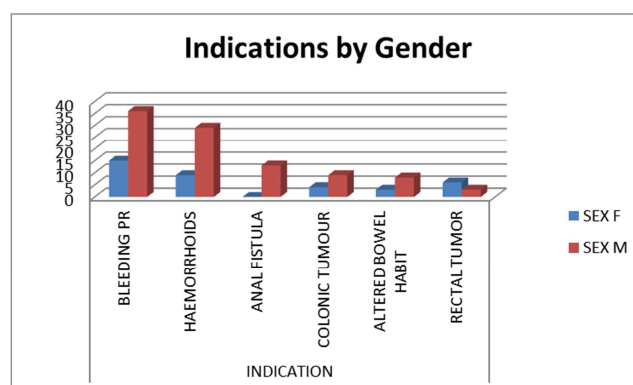
	Frequency	Percent
<=20	2	1.3
21-30	12	7.8
31-40	29	19.0
41-50	50	32.7
51-60	38	24.8
61-70	15	9.8
>=71	7	4.6
Total	153	100.0

### 3.2. Indication

Bleeding per rectum (33.3%) was the commonest indication for colonoscopy followed by haemorrhoids (24.8%) and suspicion of malignancy of various parts of the lower gastrointestinal tracts (24.3%). The various indications for which colonoscopy was done are listed in Table 3 and indications segregated by gender are shown in Figure 1. 40.5% of our indications are for the disease of Anorectal region.

**Table 3. Indications.**

	Frequency	Percent
INFLAMMATORY BOWEL DISEASE	5	3.3
ABDOMINAL MASS	1	.7
ALTERED BOWEL HABIT	11	7.2
ANAEMIA	2	1.3
ANAL FISTULA	13	8.5
ANAL TUMOUR	2	1.3
BLEEDING PR	51	33.3
COLONIC TUMOUR	14	9.2
EXCESSIVE FLATULENCE	1	.7
HAEMORRHOIDS	38	24.8
INTESTINAL OBSTRUCTION	4	2.6
LOWER ABDOMINAL PAIN	1	.7
RECTAL TUMOR	9	5.9
SCREENING (+ family history)	1	.7



**Figure 1. Indications for colonoscopy by gender.**

### 3.3. Sedation Agents

All our patients had their procedure under conscious

sedation using various combinations of anxiolytics (Diazepam or Midazolam) and Pentazosin or Propofol as shown in Figure 2. They were all monitored with Pulse rate, Blood pressure and Oxygen saturation measurements.

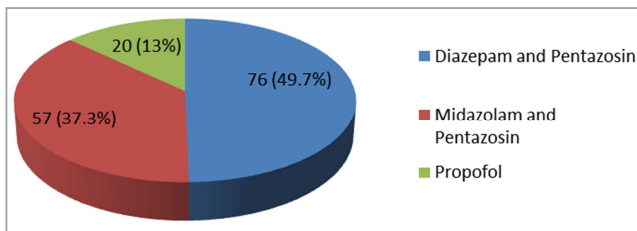


Figure 2. Sedation agents' distribution.

### 3.4. Bowel Preparation

All patients had one day bowel preparation a day prior to the procedure with low residue diet and purgative using either Castor oil or Mannitol (Figure 3).

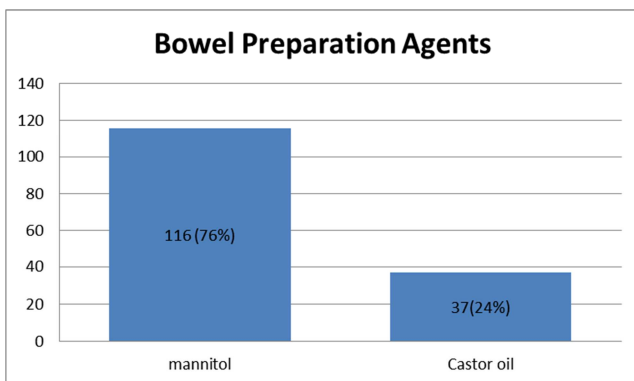


Figure 3. Bowel preparation agents.

### 3.5. Colonoscopy Findings

Table 4. Colonoscopy Findings.

	Frequency	Percent
ANAL FISTULA	13	8.5
ANAL TUMOUR/Squamous	2	1.3
BLEEDING DIVERTICULITIS	2	1.3
COLITIS	6	4
COLONIC CA	17	11.1
DIVERTICULITIS	1	.7
HAEMORRHOIDS	73	47.7
HIRSCHSPRUNG DX	1	.7
NORMAL STUDY	19	12.4
RECTAL CA	18	11.8
SESSILE POLYP (ADENOMA)	1	.7
Total	153	100.0

Haemorrhoids were the most common finding on colonoscopy (47.7%) in this study followed by malignancies (24.2%) of various parts of the large bowel. Haemorrhoids ranked first in early age groups until after 60 years. Haemorrhoids and malignancy ranked top between ages 61-70 years after which malignancies were the most common finding. Carcinoma of the rectum was commoner in females in this study. 12.4% of the patients had normal study. Table 4 shows our findings on colonoscopy and the relative

frequency, Figure 4 shows the findings by gender while Figure 5 shows findings by age groupings. Colonoscopy was done to the Ceacum in 116 (75.8%) patients and was terminated in the Sigmoid colon in 20 (13%) patients. Figure 6 shows the extent of intubation in our patients. Most of the lesions were found in the Anorectal region (69.9%), Colonic lesions were 17.7% while 12.4% were normal. Colonoscopy diagnostic yield in this study was 87.6%.

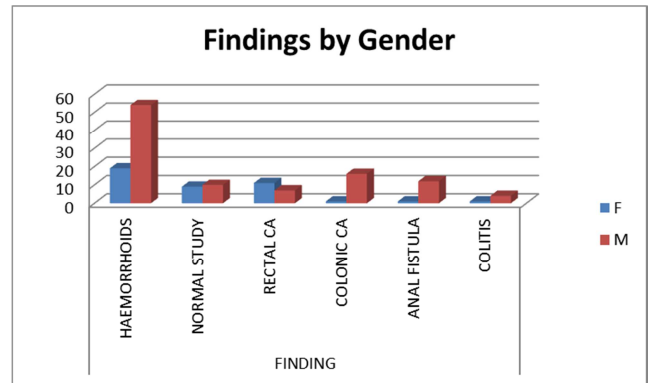


Figure 4. Colonoscopy findings by gender.

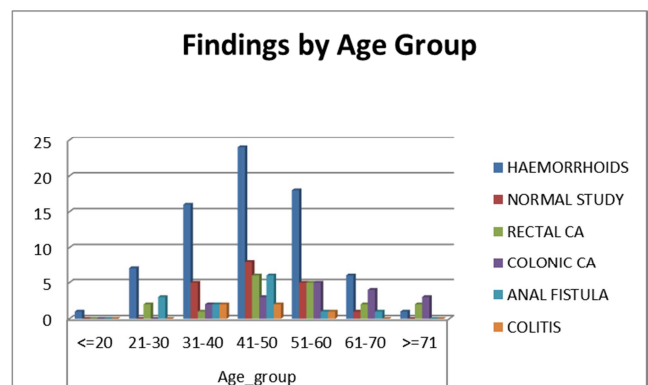


Figure 5. Colonoscopy findings by age group.

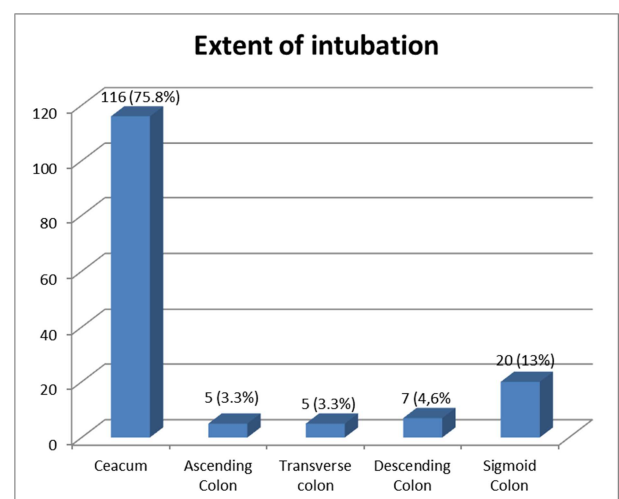


Figure 6. Extent of intubation.

24.2% of our findings were malignancies of lower intestinal tract, 97.3% (36) of the malignancies were Adenocarcinoma while 2.7% (1) were Squamous Cell

Carcinoma of the Anus. 83.8% of the malignancies were located in the left colon. Figure 7 shows the distribution of the malignancies along the colon. 75.8% of our outcome was benign lesions.

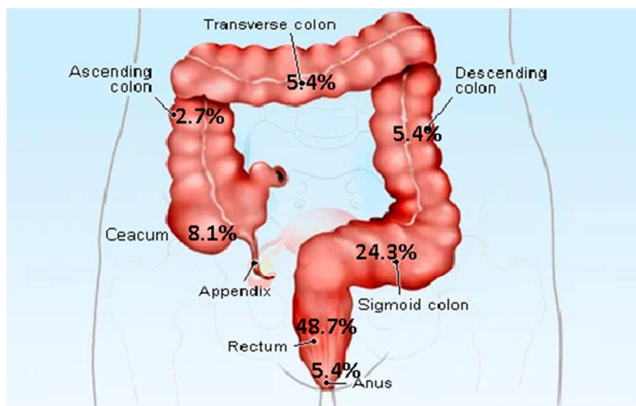


Figure 7. Locations of Malignant lesion.

## 4. Discussion

This study analysed the data of initial five years of colonoscopy practice in the National Hospital Abuja. The Male/ Female ratio of 2.3:1 is consistent with the reports of previous studies with a preponderance of male undergoing colonoscopy [7-9].

The commonest indication for colonoscopy was bleeding per rectum in 33.3% followed by haemorrhoids (24.8%) and suspicion of lower GI malignancy (24.3%) in this study. Bleeding per rectum was also the commonest indication in other studies in Nigeria and other parts of the world [7-12]. This may be due to the fear that is associated with passing blood from the anus which sensitizes the patients that something is not right and make the patients to seek immediate medical help. However in a study by Ogutu [13] that involved colonoscopy in only Kenyans, abdominal pain (35.6%) was the commonest indication while rectal bleeding (19.8%) was the fourth most common indication. Abdominal pain was very low down in the order of indications in our patients; this may suggest that abdominal pain is not considered as a serious symptom to warrant colonoscopy in this environment.

The choice of sedation agents was dependent on the preference of the endoscopist and the availability of Midazolam. The few patients who had Propofol were patients in whom difficult procedure was envisaged and prior arrangements were made for anaesthesiologist to be present for the procedure. The use of Castor oil and 10% or 20% Mannitol was because of non-availability of PicoLax, Polyethylene glycol and other suitable cathartics in Abuja when colonoscopy started at National Hospital. 76% usage of Mannitol to 24% usage of Castor oil reflects operators' preference for Mannitol over castor oil. We had adequately cleansed colon using castor oil or Mannitol in our patients but the large volume of fluid taken orally by patients to prevent dehydration, non-palatable taste and oily reflections

of castor oil and the risk of explosion after mannitol administration during colonoscopy-polypectomy using energy device [14, 15] were the drawbacks to using these agents.

Haemorrhoids were the most common findings on colonoscopy (47.7%) in this study; this is consistent with findings of Alatishe [9] and Onyekwere [12] in Nigeria and Dakubo [16] in Ghana who had haemorrhoids as their most common findings while it was second commonest in the studies by Obinna [8] and Akere [11]. Dakubo [16] also found colorectal malignancies as the second most common lesions as we found in Abuja. Majority of lesions were on the left side including 78.4% of the malignancies in our study, this means sigmoidoscopy which requires lower expertise than colonoscopy will be able to diagnosis these lesions. Dakubo [16] and Ray-Offor [17] reported similar dominance of left sided lesions in their studies also, Dakubo [16] reported 95.3% of tumours in their study was found during sigmoidoscopy and only 4.7% on colonoscopy while 66% of yield in Ray-Offor's [17] study were in the anorectum and sigmoid colon. In a multi-centred study in United Kingdom by Moug et al [18] 58% of lesions during colonoscopy were from the splenic flexure to the rectum with 57.9% confirmation of these locations by surgery.

Caecal intubation rate (CIR) in this analysis was 75.8%. This is lower than the ASGE guideline [21]. This is also low compared with the studies by Osinowo [20] (80.2%), Onyekwere [12] (81.2%) and Akere [19] (97.5%). This may be due to the low volume of colonoscopy at this centre at the onset of colonoscopy, use of conscious sedation which does not give better anaesthesia compared to Propofol and agents of bowel preparation which is less tolerated by the patients and may result in relatively less satisfactory bowel preparation compared to Polyethylene glycol and PicoLax which are less cumbersome and more effective than mannitol and castor oil.

Our colonoscopy diagnostic yield was 87.6%; this is more than the diagnostic yield by Ray-offor [17], Obinna [8] and Osinowo [20]. This may be because majority of our patients are above 40 years and many of them were referred by specialists which may mean better patient selection in our study therefore resulting in higher diagnostic yield.

## 5. Conclusion

Colonoscopy is now an important examination in the workup of patients presenting with lower gastrointestinal symptoms. As seen in our study the yield is high (87.6%) compared to 12.4% of normal findings which can be further increased by good patient selection. Bleeding per rectum was the commonest indication in for colonoscopy in Abuja while haemorrhoids followed by Malignancies were the common colonoscopy findings. Colonoscopy has gained prominence over Barium enema over the years because lesions are better visualised, biopsy can be taken, it has therapeutic benefits for removal of polyps and small lesions and it is relatively safe with low complications as since in our study where no

complication was recorded.

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