International Journal of Research in Engineering, Science and Management
Volume 6, Issue 3, March 2023
https://www.ijresm.com | ISSN (Online): 2581-5792

Total Colectomy, Ileo-Rectal Anastomosis and Rectal Polypectomy in a Patient with Multiple Colonic Polyps – A Case Report

Mwila Lupasha[1*], Charles Mbewe[2], Victor Volkov[3], Francis Pikiti[4], Samuel Eko[5], Nathan Kayonde[6], Lauraine Kapembwa[7], Valery Otoko[8], Tabeneko Kaonga[9], Luyando Ng'ona[10]

[1,2,3]*Consultant General Surgeon, Department of Surgery, University Teaching Hospitals, Lusaka, Zambia*
[4]*General Surgeon, Department of Surgery, University Teaching Hospitals, Lusaka, Zambia*
[5]*Registrar, Department of Surgery, University Teaching Hospitals, Lusaka, Zambia*
[6]*Registrar, Department of Pathology and Microbiology, University Teaching Hospitals, Lusaka, Zambia*
[7]*Radiologist, Department of Radiology, University Teaching Hospitals, Lusaka, Zambia*
[8]*General Medical Officer, Department of Surgery, University Teaching Hospitals, Lusaka, Zambia*
[9,10]*Intern, Department of Surgery, University Teaching Hospitals, Lusaka, Zambia*

***Abstract*: Total colectomy with ileorectal anastomosis has previously been the standard operation in familial adenomatous polyposis patients. This is coupled by clearing the distal rectal part with snaring or fulguration. Doing this, avoids an ileostomy in a young patient and the risks associated with nerve injury during pelvic dissection. Avoiding a permanent ileostomy is the biggest challenge that surgeons face when dealing with young patients. Familial adenomatous polyposis is rare in sub-Saharan Africa with little information on how these patients are managed and followed-up according to local standards. A 17-year-old female presented to the surgical unit with a long-standing history of blood in stool for a period of 10 years which was associated with chronic anaemia. The patient was also followed by the gastroenterologists where several endoscopies and colonoscopies were done during this period. The report is aiming to share total colectomy with ileorectal anastomosis as an alternative to pelvic dissection and a permanent ileostomy in Familial adenomatous polyposis. This is should be followed by a good surveillance system to quickly identify any transformation to malignancy as early as possible. The patient was followed for bloody stools and chronic anaemia by the Gastro-enterology unit for a long period until patients family was ready for her to have surgery. Her family was initially not willing for her to have surgery as they considered her too young. She was finally seen by our Surgical Unit where open total colonic resection and ileorectal anastomosis was performed. The patient was discharged and was reviewed as an out-patient at the surgical clinic in good physical and mental health. She was opening bowels and passing flatus with normally. *Conclusion:* Total-colectomy with end-to-end ileo-rectal anastomosis is a safe procedure in familial adenomatous polyposis in young patients coupled with an appropriate post-operative surveillance.**

***Keywords*: Familial adenomatous polyposis, total colectomy, Ileo-rectal anastomosis, post-operative surveillance.**

1. Introduction

Familial adenomatous polyposis (FAP) is clinically defined by the presence of more than 100 colorectal adenomas. It is shown that 80% of cases come from patients with a positive family history while 20% arise due to the adenomatous polyposis coli gene (APC) new mutations [1]. Colorectal cancers arise at 100% in patients with FAP with both sexes equally affected. New mutations have been thought to account for sporadic cases that occur without any previous history representing 25-30% of cases [2]. Polyps are normally seen on sigmoidoscopy by the time a patient is 15 years of age and will almost invariably be visible by the age of 30 years. Carcinoma of the large bowel occurs 10–20 years after the onset of the polyposis and patients by then are symptomatic. Total colectomy with ileorectal anastomosis has in the past been the usual choice of surgery because it avoids an ileostomy in a young patient. This also avoids the risks of pelvic surgery to nerve function [3]. Thereafter; the rectum is cleared of polyps by snaring or fulguration. Flexible sigmoidoscopy is done at 6-monthly or yearly intervals [3], [4] tailored according to an individual's phenotype. However, a small percentage of patients develop rectal stump carcinoma [3]. Alternatively, a restorative proctocolectomy with an ileoanal anastomosis can be done but has more complications. This is in patients with serious rectal involvement with polyps or with confirmed cancer of the rectum or sigmoid. Postoperative surveillance is advised because of the risk of tumours forming. Follow-up in this include rectal or pouch surveillance and endoscopies to detect any presence of upper gastrointestinal involvement. Good patient compliance is cardinal in deciding the treatment and surveillance options which helps to determine the prognosis of patients with FAP [2].

2. Case Presentation

A 17-year-old female presented with a long-standing history of blood in stool for a period of 10 years. She also experienced generalized body pains, easy fatiguability and dizziness.

*Corresponding author: mlupasha@yahoo.com

Moreover, she had episodes of vomiting and constipation sometimes. Her past medical was basically insignificant though was followed up for chronic anaemia since 2015.From the family history, both parents are deceased. Her mother died from unknown abdominal malignancy while it's unknown what the father died from. A colonoscopy was done in 2015 which showed multiple colonic polyps involving the ascending, transverse, descending and sigmoid colons. Biopsies were collected and the histopathology report showed features of a polypoid configuration, with infective and regenerative hyperplastic glandular components. There were no features of dysplasia or malignancy in the sections examined. On physical examination, the patient was stable, moderately pale and systemic examination was not significant.

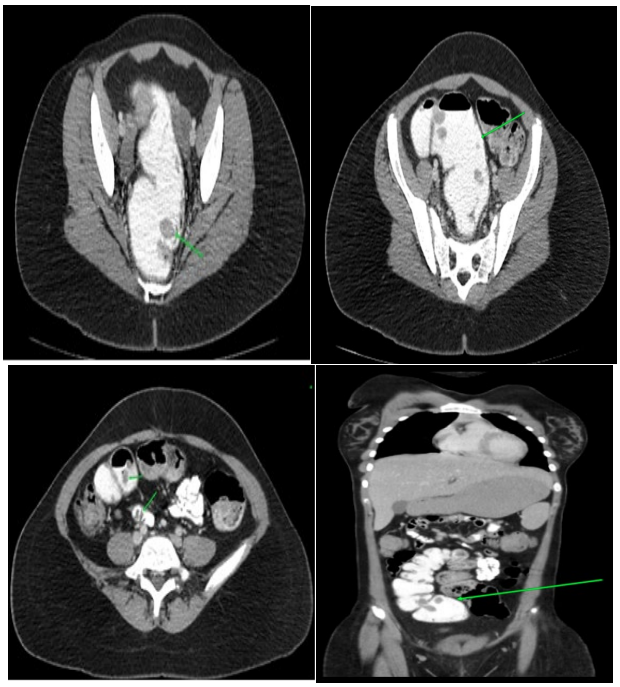


Fig. 1. Contrasted CT abdomen axial and coronal slices show multiple filling defects (green lines) of various sizes in the entire large bowel, rectum and the terminal ileum. No visceral or nodal metastases were seen. Biopsy confirmed that these polyps were benign (familial adenomatous polyposis syndrome)

Results for the Full blood count done was as follows: white cell count 5700/uL, red blood cell count 4.89/uL, haematocrit 32.7%, haemoglobin 8.5g/dL, mean corpuscular volume 66.9fl, mean corpuscular heamoglobin 17.4pg, mean corpuscular heamoglobin concentration 26.0 g/dl, platelet count 431000%, neutrophils 54%, eosinophils 1.4%, basophils 0.75%, monocytes 8.0%. Patient was admitted to the surgical ward 5 days prior to surgery for close monitoring and optimization for surgery. In this vein, she received 3 units of packed cell prior to surgery. The repeat full blood count showed: white cell count 5700/uL haemoglobin of 10.7g/dL, and platelet count of 400000%. CT abdomen and pelvis showed multiple small mildly enhancing polyps in the entire colon and rectum, likely polyposis syndrome (Figure 1). The patient had undergone a laparotomy, total colectomy, rectal polypectomy and ileo-rectal end-to-end anastomosis was done. Plication of the terminal ileum with vicryl 2-0 just proximal to the ileo-caecal anastomosis was made, forming an inverted W-shaped bowel loop. Intra-operative findings included multiple polyps involving the colon and terminal ileum (10cm from ileo-caecal valve). Postoperatively, the patient managed in the surgical ward, and was discharged on day 11 post surgery. Oral sips were commenced on day 5 post operatively which progressed to free-fluids and solid diet in 2 days.

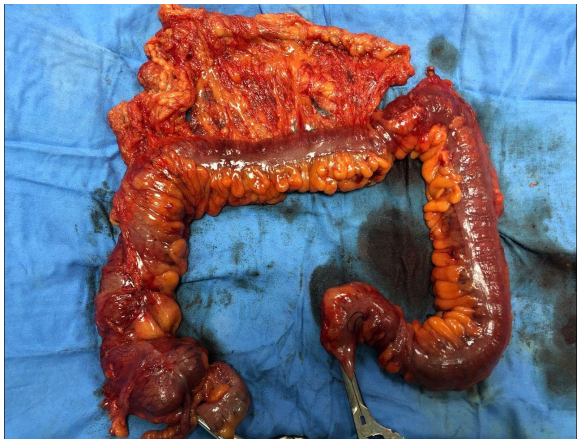


Fig. 2. Gross image of resected bowel in theatre

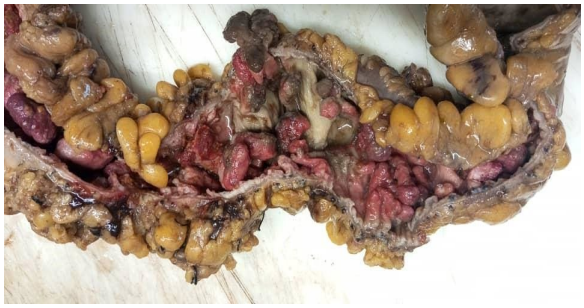
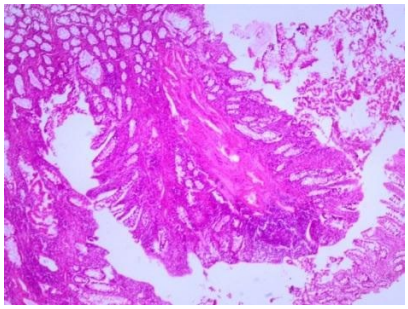
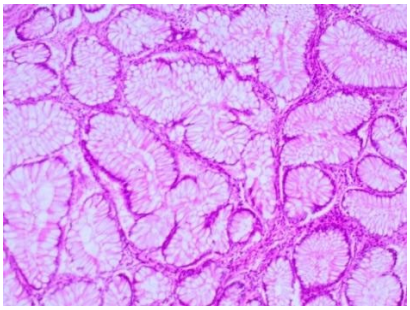


Fig. 3. Gross Macroscopy of the resected bowel showing numerous polyps of various sizes



a. Low power magnification of polyp.



b. Intermediate power magnification showing tubular adenomas

Fig. 4. Light Microscopy of Hematoxylin and eosin (H&E) sections

3. Discussion

Total colectomy with ileorectal anastomosis has previously been the standard operation in familial adenomatous polyposis patients. This is coupled by clearing the distal rectal part with snaring or fulguration [3]. Patients with FAP may present with unclear abdominal complaints. This can be coupled with a negative family history; hence the need to evaluate these patients with care [2]. The patient's family history was significant, in this case, because the mother died from unknown gastrointestinal malignancy which could explain the clinical presentation of this patient. Most of the patients develop polyps in the childhood, which eventually increase in size and number throughout the entire colon until adolescence. The diagnosis of FAP is based on a positive family history and clinical findings. Whenever possible, the clinical diagnosis should be confirmed by genetic testing such as direct sequencing of the APC gene [5]. However genetic testing was not done on our patient as the biopsy taken at colonoscopy was indicative of FAP. Prophylactic surgery is best done before the age of 25 years. The major surgical choices for patients with FAP include total proctocolectomy with an end ileostomy; subtotal colectomy with ileorectal anastomosis, and restorative proctocolectomy with an ileoanal anastomosis. Surgical removal of the rectum depends upon the number of rectal polyps and the family history. For few polyps in the rectum, total colectomy with ileorectal anastomosis is a treatment option of choice [2]. In view of this, our patient underwent total colectomy with ileorectal anastomosis. Similar surgery has been done in patients presenting with colonic polyps with fewer rectal polyps [6]. Unlike the ileo-rectal side-to- end single layered intestinal extra mucosal anastomosis [7], we used an end- to -end double layered anastomosis. This gave a physiologic and tension-free anastomosis.

Initially, patients are followed-up at short intervals to assess the psychological and physical problems associated with the surgery and identify tumor formation in the early stages. The initial follow-up should include a full physical examination, abdominal ultrasound or computed tomography or magnetic resonance imaging. The patient presented with hypochromic microcytic anaemia which is one of the manifestation of FAP. Iron studies were not done, but patients are also known to present with iron deficiency anaemia in Gardner syndrome [7]. In patients with FAP, treatment with 400 mg of celecoxib twice daily for 6 months has been shown to reduce the tumor burden by 28% [5] despite not using this method in our patient. Sulindac, a nonsteroidal anti-inflammatory drug is sometimes used to treat patients post colectomy with polyps remaining in the rectum [9]. Polypectomy or biopsy should be targeted to polyps that have a suspicious appearance. This includes ulceration, bleeding, and diameter >10 mm [4]. The specific procedure chosen should be explained to the patient and quality of life expected post-surgery discussed so as to reduce fear and minimize expectations [5]. There is no justification to do routine upper gastrointestinal (UGI) surveillance until after 25 years of age. The absolute lifetime risk of duodenal cancer development is estimated to be 3% to 5%. However, after prophylactic subtotal colectomy, the risk of possible UGI cancer is more than the risk from the retained rectal segment post ileo-rectal anastomosis [4].

4. Conclusion

Patients with Familial adenomatous polyposis affecting the colon require total colectomy because the risk of colorectal carcinoma is 100%. A permanent ileostomy with pelvic dissection can be avoided with an ileo-rectal anastomosis. Surgical treatment of this manner is a safe procedure that relieves the patient from colonic disease and alleviates possible complications such as anaemia. Colectomy is a necessary operation in patients with FAP to prevent the occurrence of colorectal carcinoma. The timing of the surgery is basically dependent on the rectal and colonic burden. The discretion of the surgeon of the surgeon also plays a major role in making this decision. This should be coupled with a good surveillance system post operatively because of the increased risk of colorectal cancer in these patients.

Adherence to Ethical Standards

A. Acknowledgments

The authors of this article acknowledge the contribution and input of all individuals that took part in the management of the patient.

B. Disclosure of conflict of interest

There is no conflict of interest directly or indirectly by the authors.

C. Statement of informed consent

The article has been written with written informed consent of the patient and her guardian.

References

[1] A. T. Raftery, "The alimentary system" in Applied Basic Science for Basic Surgical Training, 2nd Ed. Philadephia: Elsevier, 2008, pp. 563-564.

[2] B.D. Santosh, H.V. Tanwar, S.B. Sanket,H.S. Mohd, N.B. Dattatray.(2015,Mar). Familial Adenomatous Polyposis (FAP)—A Case Study and Review of Literature. Journal of Clinical and Diagnostic Research, Vol. 9(3):PD05-PD06.

[3] N.S. Williams, C. J. Bulstrode, and P. R. O'Connell, "The small and large intestines," in Bailey & Love Short Practice of Surgery, 25th Ed. London: Holder Arnold, 2008, pp. 1196-1199.

[4] W. Hyer, S. Cohen, T. Attard, V. Vila-Miravet, C. Pienar,M. Auth, S. Septer, J. Hawkins, C. Durno, A., "Latchford, Management of Familial Adenomatous Polyposis in Children and Adolescents," Position Paper from the ESPGHAN Polyposis Working Group, JPGN. Volume 68, Number 3, March 2019.

[5] E. Half, D. Bercovich, and P. Rozen., "Familial adenomatous polyposis," Orphanet Journal of Rare Diseases, Oct. 2009.

[6] J. Yorke, F.A. Yamoah, R. Awoonor-Williams, T.O. Konney, E. Acheampong, E. Adjei, K. A. Ababio, D.G. Aning, D. Afful-Yorke, F. M. Aidoo, C. G. Assim, F. E. Gyamf, R. O. Assim, S. O. Konadu, D. E. Kuwornu, and E. N. Acheampong, "Familial adenomatous polyposis: A case study," Journal of Surgical Case Reports, vol. 2020, no. 10, Oct. 2020.

[7] E. B. Odimba, S. Shampile, F. Michelo and M. Mwanza, "Early outcomes after open total colon resection for haemorrhagic pan-colonic diverticulosis: Report of a case and review of literature; Department of Surgery, Adult Hospital, University Teaching Hospitals, Lusaka, Zambia. Magna Scientia Advanced Research and Reviews, vol. 4, no. 2, pp. 11-15, April 2022.

[8] A. Ali, A. Ahmad, S. Taj, S. A Quadeer and S. E. Ahmed, "Familial Adenomatous polyposis (FAP) Presenting as Iron Deficiency Anemia in a 33-year Old Female: A case Report," Cureus 14(4):e24603, April 2022.

[9] M. Cruz-Correa, L.M. Hylind, K. E Romans, S.V. Booker and F.M. Giardiello, "Long-term treatment with sulindac in familial adenomatous polyposis: A prospective cohort study," Gastroenterology, 122(3):641-5, March 2002.