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Colonic polyps in Nigerians, a change in trends: A retrospective single-center clinicopathological study

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ABSTRACT

Background: Adenomatous polyps in the colon are recognized precursors of colorectal carcinoma; however, the low incidence of these polyps in sub-Saharan Africans has led many to believe that the pathway of colorectal cancer may differ in this region. The objective of this study was aimed to determine the change in trends of colonic polyps in Nigeria. **Methods:** This was a 10-year retrospective review of all colonic polyp specimens received at the Department of Pathology in our hospital utilizing the histopathology request cards and hematoxylin and eosin-stained slides. The data were analyzed using the IBM SPSS Statistics (version 23; IBM Corporation, Armonk, New York, USA). **Results:** A total of 131 cases were reviewed. The age of patients ranged from 5 to 86 years with a mean age of 55 years. The male-to-female ratio was 1.6:1. The mean age was 59.4 years. Of the 131 cases reviewed, 62 patients had adenomatous polyps, 49 had inflammatory polyps while 20 others included juvenile polyps, hyperplastic polyps, and hamartomatous polyps. **Conclusion:** Adenomatous polyps are increasingly being seen among Africans in the sub-Sahara region and perhaps they are not as rare as it was once thought provided the facilities for the diagnosis are available. They may yet play a more important role than has been ascribed to them in the pathogenesis of colorectal carcinomas in Africans.

Key words: Adenomatous polyp, colonic polyp, hyperplastic polyp, inflammatory polyp, Juvenile polyp

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INTRODUCTION

Colorectal cancer (CRC) is a significant cause of morbidity and mortality worldwide. Most CRCs are thought to arise from adenomas and the evidence linking colorectal adenomas to carcinoma is well established.^[1] Surveillance for polyps is a major preventive strategy in CRC. Polyp surveillance accounts for up to 15% of the almost 2 million colonoscopies performed per year in the United States (US). The incidence of polyps is thought to increase with age and in the US about 30%–40% of 60 years old and above have colonic adenomas. Advancing age, male gender, high fat, low-fiber diet, tobacco use, and excess alcohol intake are all risk factors. Colonic polyps are also more common in Western countries and among noncaucasian males. About 6%–12% of children are affected.

Historically, colonic polyps were described as rare among sub-Saharan Africans including Nigerians.^[2-4] The paucity of neoplastic polyps in Nigeria has led some researchers to opine that the adenoma–carcinoma sequence is not the predominant pathway in colorectal carcinomas among Nigerians.^[2] However, recent studies appear to show increasing evidence of colonic polyposis in Nigerians.^[2-4]

METHODS

This was a 10-year retrospective study. All histologically diagnosed cases of colonic polyps in the Department of Pathology, tertiary health institution in South-Western

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Nigeria from January 1, 2009, to December 31, 2018 were received within the study were retrieved and reviewed. The biodata of the patients including age and gender were recorded. The site of the polyp and clinical symptoms was also recorded if available. The glass slides were reviewed and polyps were classified as neoplastic or nonneoplastic. The data were analyzed using the IBM SPSS Statistics (version 23; IBM Corporation, Armonk, New York, USA).

Ethical clearance

Ethical approval was not indicated or absolutely required for this study because we used anonymized data. The data obtained did not infringe on the rights of participants and did not violate the principles of confidentiality.

RESULTS

A total of 131 cases were reviewed. There were 81 males and 50 females giving a male-to-female of 1.6:1. The youngest patient was 5-year-old while the oldest patient in our cohort was 86 years. The mean age was 59.4 years. Of the 131 cases reviewed, 62 patients had adenomatous polyps with low-grade dysplasia [Figure 1], 49 had inflammatory polyps while 20 others included juvenile polyps [Figure 2], hyperplastic polyps [Figure 3], and hamartomatous polyps.

Among the patients with adenomatous polyps, the youngest was a 10 years old who had multiple polyps suggestive of a polyposis syndrome. Tubular adenomas were the most common type with 55 cases. There were four villous adenomas and two tubulovillous adenomas. The most common indication for colonoscopy was bleeding per rectum (32, 38.5%) followed by abdominal pain (16, 19.3%). Almost 10% of the polyps were seen in patients

on surveillance, either following therapy or from a positive occult blood test.

Where location was retrieved, the rectosigmoid region was by far the most common location of polyps with about 45% of them located in this region. On the right side of the colon including the cecum, ascending colon, and transverse colon, the transverse colon was the most common location with about 20% of the polyps located here.

DISCUSSION

Colonic polyps were hitherto thought to be rare in Africans including Nigerians and earlier studies have shown a very low incidence with most of the polyps seen being nonneoplastic.^[2]

Polyps are significant in that a large number of colorectal carcinomas are thought to arise from neoplastic polyps.^[1] Nonneoplastic polyps include hyperplastic polyps which have very low malignant potential and juvenile polyps, which are benign, hamartomatous polyps and are nonmalignant.

Adenomatous polyps by definition show dysplasia differentiating them from nonneoplastic polyps. Most are asymptomatic and are diagnosed during screening colonoscopies, however, when symptomatic, common complaints include bleeding per rectum, diarrhea, constipation, abdominal pain, mucous with stools, or symptoms and signs of iron deficiency anemia secondary to chronic bleeding. In our study, the most common indication for colonoscopy in patients who had polyps was bleeding per rectum. This is similar to what was reported by Bojuwoye.^[3]

Polyp prevalence rates vary between geographical areas with rates of up to 30% in Western countries to and lower

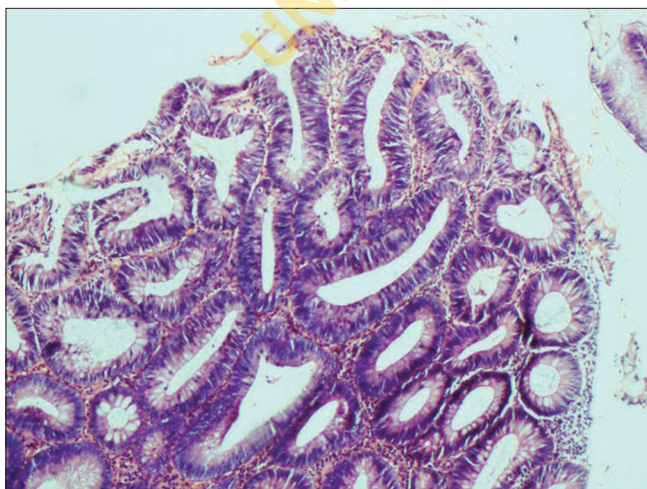


Figure 1: Photomicrograph showing adenomatous polyp with low-grade dysplasia. (Hematoxylin and eosin, $\times 100$)

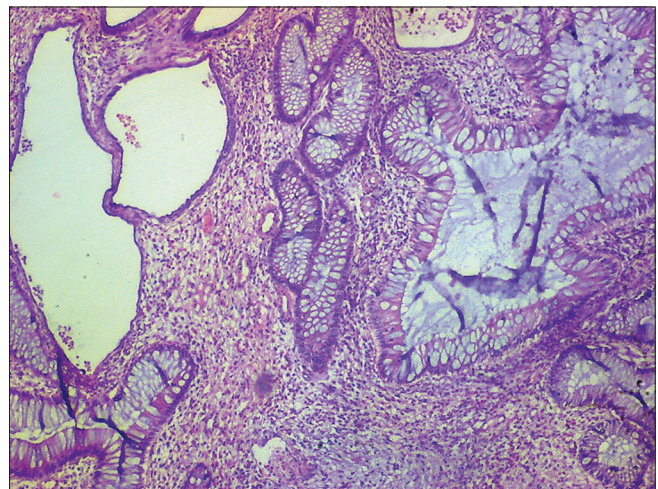


Figure 2: Photomicrograph showing juvenile polyp. (Hematoxylin and eosin, $\times 100$)

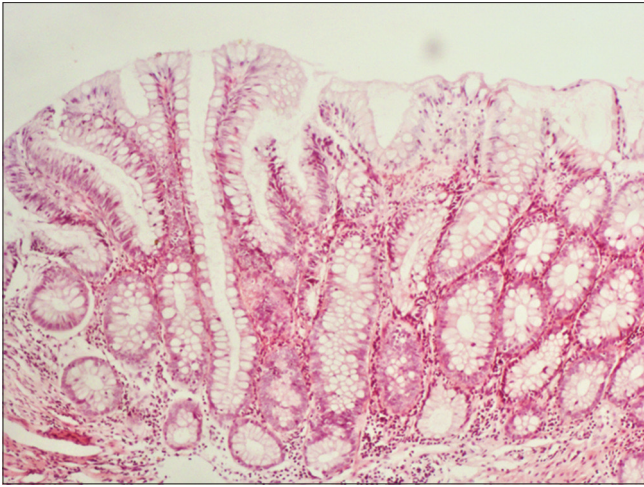


Figure 3: Photomicrograph showing hyperplastic polyp. (Hematoxylin and eosin, $\times 100$)

rates of 10%–15% in Asia and Africa.^[4] A comparative study of polyps from Nigerians and African Americans in the 1970s showed only about 7.5% of cases to be adenomatous in that cohort while up to 87% of the polyps were adenomatous among African Americans underlying the wide disparity in geographic regions reported in early studies.^[5,6]

Anatomic distribution also appears to vary widely, polyps are generally more common in the left colon, but recently a shift to the right has been reported with increasing numbers seen in the right colon.^[4] Among African Americans, colonic polyps tend to be more proximally located and larger in the colon when compared to Caucasians.^[3]

This was also reflected in our study, although about 53% of those in which location was known were located in the left colon with up to three quarters of these in the rectosigmoid region, a significant proportion was located in the right colon (46%). This underlines the importance and utility of a full colonoscopy among our patients rather than a flexible sigmoidoscopy which will only detect polyps in the rectosigmoid region. Indeed, in 2005, the American College of Gastroenterology recommended that sigmoidoscopy be abandoned in favor of colonoscopy for screening in advanced adenomas.^[7] Some studies have shown blacks having a higher prevalence of advanced proximal adenomas and lower prevalence of serrated phenotypes than whites suggesting a more aggressive colorectal carcinoma.^[8]

There is an increased prevalence of polyps in men regardless of race. This was also reflected in our study, where males made up to one and half times the number of females. Most other studies in Nigeria have also reported more males than females.

There is also a reportedly higher rate of villous morphology in African Americans and hyperplastic polyps are

uncommon.^[6] This is particularly important as villous morphology is a sensitive index of malignant transformation. However, in our study, tubular adenomas were predominant with only a few showing villous architectures. Most of the polyps also showed low-grade dysplasia. The paucity of villous architecture has been reported in other studies from Nigeria. Polyposis syndromes are uncommon in Nigeria, although a few cases have been reported, only one case was present in our study cohort.

A landmark study on intestinal polyps from this hospital four decades ago showed only 40 colonic polyps over 10 years.^[2] In that study, juvenile polyps were the most common representing up to 60% of cases, neoplastic polyps were noticeably rare making up <10% of cases. This reflected the thinking in Africa then that colonic polyps and CRCs were rare in sub-Saharan Africans. In the current study, of the 131 cases reviewed for the 10 years, almost half were neoplastic (47%). This represents a massive leap in the incidence and diagnosis of neoplastic polyps in this region. This seemingly increasing incidence of neoplastic polyps has been reported by other researchers in this region and some of the possible reasons put forward for this include adoption of Westernized diet, greater awareness of CRC, improved diagnostic services, improved expertise among endoscopists and pathologists as well as better functioning cancer registries.^[9]

The increasing diagnosis of colonic polyps as well as colorectal carcinoma brings to the fore the importance of screening colonoscopies in this environment. Although there are numerous noninvasive tests such as fecal occult blood test and stool DNA test, the gold standard for polyp detection is colonoscopy with polypectomy. Factors that may increase the miss rate of polyps on colonoscopy include poor bowel preparation, flat polyps, and expertise of the endoscopist. Other methods include computerized tomographic colonography as well as double-contrast barium enemas and colon capsule endoscopies.^[10,11]

CONCLUSION

There has been a leap in the number of colonic polyps diagnosed in Nigerians, probably due to a number of factors including diet and increased access to colonoscopy services. Studies have shown that a reasonable number of colonic polyps in Nigerians are adenomatous, hence could be precursors to CRC. A lot of these adenomas are also located in the right colon, hence the need for a full colonoscopy in screening exercises.

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Conflicts of interest

There are no conflicts of interest.

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