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Retrospective Analysis of Patients Underwent Colonoscopic Polypectomy: A Two-Center Study

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Abstract

Colonoscopy is a widely used modality for detecting colonic pathologies nearly all over the world. In this retrospective analysis, we aimed to determine the prevalence of colonic polyps and their histopathological results based on colonoscopies performed in the gastroenterology unit in Çanakkale Onsekiz Mart University Health Practice and Research Hospital and Istanbul Sultan Abdulhamidhan Training and Research Hospital. Patients underwent colonoscopic examination due to lower gastrointestinal system complaints between 01/01/2014 and 01/12/2019 were evaluated. Patient age, gender, indications, colonoscopic findings, polyp number, size and histopathologic results of the lesions were recorded. A total of 1040 polyps were detected from 839 polypectomy operations performed according to the colonoscopic evaluation of 9044 patients between January 2014 and January 2019. Bleeding after polypectomy was observed in 8 (0.95%) patients and all of the bleedings were controlled with sclerotherapy and/or heater probe coagulation. According to the polyp detection sites, rectosigmoid region (49.7%) was followed by transverse colon (17.3%), descending colon (17.5%), ascending colon (10.5%) and caecum (5%). Adenomatous polyps were the most encountered histopathologic type followed by hyperplastic polyps (19.6%). Thirteen (1.25%) polyps were reported as adenocarcinoma. Polypectomy is an effective procedure of colonoscopy when performed by expert hands. In this retrospective analysis, our results was found to be consistent with those of the literature in terms of polyp number, size and histopathologic characteristics.

Keywords: Colonoscopy, colonic polyps, polypectomy

Introduction

Although polyps can be defined as a mass of tissue originating from the mucosa or submucosa and extending by protruding into the lumen of the intestine or stomach, its main clinical significance is that it paves the way for stomach and intestinal neoplastic diseases. Colorectal tumors have a different place in all gastrointestinal tract (GIS) tumors and are in the 3rd place in terms of incidence among all cancer types and 2nd in terms of causing death [1]. For this reason, early diagnosis of colorectal cancer is extremely important, and studies have shown that early diagnosis reduces mortality between 15-33% [2]. When evaluating the colorectal cancer development process, colon polyps are one of the most important precursor factors in this process and therefore, it is recommended that the polyps detected by colonoscopy should be removed and pathologically examined, regardless of their size. Although the macroscopic evaluation gives little information about the character of the polyp, it should be remembered that polypectomy is absolutely necessary to prevent an undesired condition such as the propability of cancer development in the future. For this reason, colonoscopic procedure must be applied to remove the detected polyps and make a histopathological diagnosis [3].

Today, colonoscopy is accepted as the best diagnostic method in the investigation and evaluation of the symptoms associated with the large intestine. Although the purpose of the procedure is to visualize the entire large intestine, including terminal ileum, it can also allow us to take a biopsy if any lesions are seen, as well as to perform polypectomy when a polyp is detected, and apply dilatation or sclerotherapy in symptomatic patients when necessary [4]. Colonoscopic polypectomy is the most common therapeutic procedure among all these procedures. Polypectomy can also reduce the risk of cancer eliminated in that area of the colon, as well as reduce costs on public health and the health system.

In this retrospective study, we aimed to analyze the results of patients who underwent colonoscopy and detected colorectal polyp in gastroenterology endoscopy unit.

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Materials and Methods

Patients who underwent colonoscopic polypectomy between 01/01/2014 and 01/12/2019 in the endoscopy unit of Çanakkale Onsekiz Mart University Health Practice and Research Hospital and Istanbul Sultan Abdulhamid Han Education and Research Hospital gastroenterology clinic were included in the study. Colonoscopy reports were retrospectively scanned from the endoscopy archive system, histopathological and demographic features from the hospital central computer system. A total of 839 patients with colonic polyps in a total of 9044 colonoscopic procedures were examined. A total of 1040 polyps were detected in these 839 subjects. Patients with inflammatory bowel disease, previously operated for colon cancer, and patients with more than 10 polyps in the colon were excluded from the study. Figure 1 summarize inclusion procedure of patients.

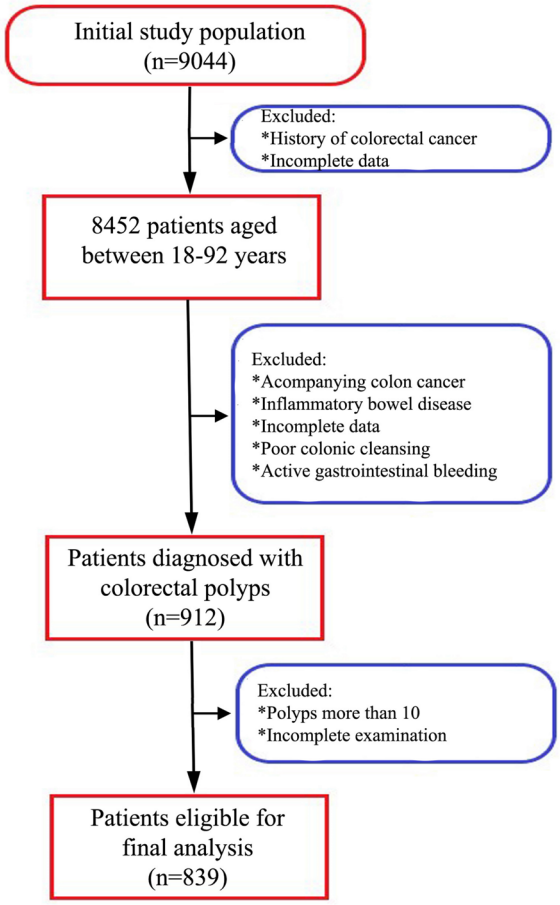

Figure 1. Flow diagram of inclusion procedure of patients

All patients evaluated for the study were given a diet list consisting of non-pulp aqueous foods starting from 72 hours before the procedure. Again, all patients were warned about how to administer oral and rectal laxatives given in standardized doses to use the night before the procedure. All colonoscopic procedures were performed by Pentax or Fujinon videocolonoscope devices by experienced gastroenterologists.

Statistical Analysis

SPSS for Windows 20.0 package program (SPSS Inc, Chicago, Illinois) was used to analyze data. Descriptive statistics were used to describe continuous variables (mean, median, and standard deviation).

Results

A total of 9044 patients underwent colonoscopy at our gastroenterology clinic between 01/01/2014 and 01/12/2019. One or more polyps were detected in 839 (9.27%) in 1040 patients who were underwent polipectomy during the colonoscopic evaluation of these 9044 patients. The ages of the patients with detected polyps were between 18 and 92 (Table 1). Bleeding was found in 8 (0.95%) patients after polypectomy, which were controlled by sclerotherapy and / or heater probe therapy. When the polyps were evaluated according to their localization, 49.7% were in the rectosigmoid region, 17.5% in the descending colon, 17.3% in the transverse colon, 10.5% in the ascending colon and 5% in the caecum (Table 2). Regarding the histopathological results examination, adenomatous polyps (76.8%) were the most common histological type. Additionally, among the adenomatous polyps, tubular adenoma (60.3%) was the most common type. Tubulovillous adenoma was detected in 151 polyps (14.5%) and villous adenoma in 21 polyps (2%).

Tablo 1. Demographic characteristics of patients underwent polypectomy

Gender	Number of patients	Mean age
Male	456 (54.35%)	54±14.5
Female	383 (45.65%)	58±12.8

Table 2. The location and frequency of polyps in the colon

Localization	Number (n)	%
Caecum	52	5
Ascending colon	109	10.5
Transverse colon	180	17.3
Descending colon	182	17.5
Sigmoid colon	274	26.3
Rectum	243	23.4
Total	**1040**	**100**

Of all biopsy results 13 (1.2%) polyps were reported as adenocarcinoma (Table 3). Three hundred and fourteen of the polypectomies were performed using forceps, while others were performed using polypectomy snare after sclerotherapy.

Table 3. Histopathological evaluation results of polypectomy materials

Histopathological Type	Number (n)	%
Neoplastic polyps	**811**	**78**
Adenomatous polyps		
Tubular	627	60.3
Tubulovillous	150	14.5
Villous	21	2
Adenocarcinoma	13	1.2
Non- neoplastic polyps	229	22
Hyperplastic polyp	204	19.6
Lymphoid polyp	11	1
Pseudo polyp	6	0.6
Inflammatory polyp	3	0.3
Hamartamatous polyp	3	0.3
Lipoma	2	0.2
Total	**1040**	**100**

In terms of polyp size, among 1040 polyps, 811(78%) were smaller than 1 cm, 125 (12%) were between 1-2 cm range and 104 (10%) were bigger than 2 cm (Figure 2).

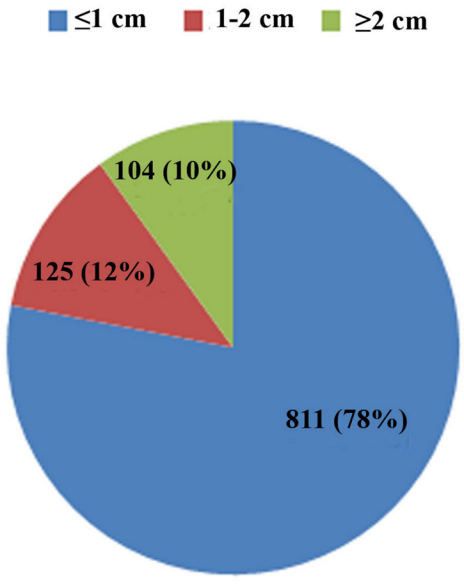

Figure 2. Distribution of polyps according to size

Discussion

In this study, we determined that the most common polyp location was the rectosigmoid region, and the most frequently observed pathologic type was the adenomatous polyp. In 13 polyps, however, polyp biopsy was reported as adenocarcinoma. Our bleeding rate after polypectomy was below than 1% and bleeding control was achieved in all our patients with endoscopic intervention.

Lower GIS endoscopy is usually performed in cases such as rectal bleeding, investigation of the etiology of anemia, changes in bowel habits, abdominal pain, beginning of constipation or diarrhea. However, it can also be performed in patients who do not have any complaints in order to spread the screening programs and to scan the large intestine in positive patients. Although endoscopic procedures performed in the presence of lower GIS complaints can be found normal, they should be carefully evaluated as they can be the precursor of an underlying malignant disease, and the appropriate endoscopic / colonoscopic procedure should be performed immediately. In this context, one of the most common findings detected during the procedure, especially in older ages, is colon polyps. Taking into account that colon polyps are also cancer precursors, the appropriate endoscopic treatment approach is extremely important. Although polyps in GIS have different morphological and pathological classifications, they can generally be found with or without stem (sessile), single or multiple, in the same or different color as mucosa. With this macroscopic evaluation, the intervention method to be applied to the lesion detected during colonoscopy is tried to be selected. Because the endoscopist; biopsy, polypectomy, endoscopic treatment of bleeding lesion makes decisions after macroscopic evaluation.

Hyperplastic polyps are the most common non-neoplastic polyps and their frequency varies. Their size is generally smaller than 5 mm and the rectosigmoid region is the most common location [5-7]. In a study from our country, Solakoğlu et al. reported that 17.7% of the detected polyps as hyperplastic [7]. Similarly, in a study reported from Sweden, the rate of hyperplastic polyp detection was reported as 15.8% [8]. O'Brien et al. reported this rate as 11.2% in national polyp studies published in 1990 [9]. In this study, we found the rate of hyperplastic polyp to be 19.6%. When evaluated in terms of follow-up, normal colonoscopy evaluation is recommended in patients with these detected polyps [10].

The most frequently encountered polyps among the neoplastic polyps were adenomatous polyps (76.8%). Adenomatous polyps have a special importance in the development of colorectal cancer. Although all adenomatous polyps do not carry a risk of cancer and the prediction of which adenomatous polyps will turn into cancer can not be made. It is accepted that the risk is reduced or lost in that area by polypectomy. Cancer development from adenoma is a very well known process and it is called as the adenoma-carcinoma sequence [11]. Especially as the degree of dysplasia increases, the risk of turning into cancer also increases significantly [12,13]. In a national polyp study conducted by Winawer et al. [14], it has been shown that there is a 90% decrease in colorectal cancer incidence by colonoscopic polypectomy. However, it should be remembered that since the excision of the adenoma from that area will not eliminate the genetic disorders in the intestinal mucosa and as well as in sensitive tissue, adenoma may develop in this region again or in other areas of the colon. Therefore, follow-up is extremely important in these patients. Studies have shown that adenomas may have recurrence up to 5-15% in 1 year after removal and up to 20-30% after 5 years. Therefore, colonoscopic controls at

certain intervals were recommended to each patient in whom we performed colonoscopic polypectomy and detected adenomatous polyp in accordance with the current guidelines.

According to the polyp locations of patients underwent coloscopic polipectomy in this study, the most frequently detected polyp location was the rectosigmoid region (49.7%). The rectosigmoid region was followed by descending colon (17.5%) and transverse colon (17.3%). When the literature is examined, it is noteworthy that the most common location of polyps is the rectosigmoid region. In a study from our country, the rate of polyp detection in the rectosigmoid region was reported as 57% by Oymacı et al. [15]. Similarly, Eminler et al. gave the rate of polyp detection in the rectosigmoid region as 47% [16]. From this perspective, our results can be regarded in accordance with the literature.

Although the development of complications after polypectomy is an undesirable fact, the most common complication of this procedure is bleeding and perforation [17]. Despite the presence of very different rates in the literature, the risk of perforation after polypectomy varies between 0.05% and 0.1% [18]. The use of electrocautery is one of the most important risk factors for perforation. Variables such as the size of the perforation, its location, and the patient's condition are the substantial decision-makers for about how to monitor the patient after perforation. In our series, there was no perforation case due to colonoscopic polypectomy. Another common complication after polypectomy is bleeding. Patients who use antiaggregant / anticoagulant, in particular, are the most susceptible patient group for this complication. However, conditions such as the diameter of the polyp, its location, the presence or absence of sclerotherapy before the procedure are extremely effective on the amount and severity of bleeding. Dobrowolski et al. reported a bleeding rate after polypectomy as between 0.3-6% in a recent study [19]. Oymacı et al. reported that only 2 of 471 (0.4%) patients underwent polypectomy had bleeding [15]. Bleeding was observed in only 8 (0.95%) of the patients who we underwent polypectomy in the present study. With sclerotherapy and / or heater therapy, bleeding was stopped in these 8 patients without the need for any surgical intervention.

Conclusion

In conclusion, we have demonstrated clinical, endoscopic and pathologic features of patients in whom we have performed colonoscopic polypectomy in two gastroenterology clinics. We would like to state that rectosigmoidoscopy screening programs should be applied especially in cases where the entire colon evaluation is difficult to perform especially in social screenings because most of the polyps that we detected were located in the left colon and had adenomatous character.

Conflict of interest

The authors declare that they have no competing interest.

Financial Disclosure

All authors declare no financial support.

Ethical approval

COMU Clinic studies ethical board Decision no:2019-21

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