Colonoscopy outcome in North of Iran (Guilan): 2006-2009

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Abstract: Colonoscopy is a procedure that is used largely, in assessment, screening & management of lower gastrointestinal disease. Some of these diseases that assessed are colorectal cancer, polyps & inflammatory bowel disease. The goal of this study is determining of frequency of lower GI disease among patient who have elective colonoscopy. This cross-sectional study was conducted retrospective. Samples collected from the census method of colonoscopy patients in Razi hospital, from March 21th in 2006 to March 20th in 2009. Patients' data including age, sex, location and type of lesion found by colonoscopy and pathology diagnosis were collected and at the end necessary information collected into the SPSS software (version 16) for analyzing with the help of statistical tests Chi-square. Significant findings: Of 1398 patients, 683 patients (48.8%) were male and 715 (51.2%) were female 494 patients (35.3%) had normal results. Hemorrhoids (22.6%) and polyps (14.8%) were the most abundant lesions discovered by colonoscopy. The most common site of lesions among patients with abnormal colonoscopy findings, were anal canal and anus (43.8%) and rectosigmoid (26%). The findings in both males and females, revealed no statistical differences. Conclusion: Colonoscopic detection of hemorrhoids is a common finding in patient undergone colonoscopy. The most frequent site for lesions which found in anal canal and anus. In addition to, normal findings had a high rate and it indicates that unnecessary colonoscopy have been required by physicians.

Keywords: Colorectal diseases, frequency, polyp, colonoscopy

Introduction

Colonoscopy become more and more popular after sixties of 20 century and used in screening, assessment and management of colorectal diseases [1] and due to its increasing availability, relative safety, low complication rate, it is being commonly performed Incidence and prevalence of colonic diseases has been calculated in different geographical regions of the world [2, 4].

This procedure is more sensitive than radiologic imaging and can be used for biopsy & total resection of lesion. However, colonoscopy is a difficult skill to master. The procedure is often painful for the patient. Over sedation, perforation, bleeding, and procedure related death remain much feared complications [5, 6]. It widely used to diagnosis of colorectal cancers and adenomatous polyps that can be cancerous if they won’t be managed [6, 7]. Recent studies also showed that using Colonoscopy in screening colorectal cancer is reducing economic costs of disease management [8, 9].

Colorectal cancer is as the most frequent cancer in Europe and the second leading cause of death related to cancer in the United States from one way, and colon is the common location for many other diseases such as diverticulitis, hemorrhoid, IBD, especially ulcerative colitis, benign and malignant polyps from the other way necessitate diagnostic tests like colonoscopy that be gold standard [10, 11]. In this study, we sought to analyze the various outcome of colonoscopy in patients referred to Razi hospital Endoscopy ward in Rasht, the center of guilan province, north of Iran.

Materials and methods

This retrospective cross-sectional review as carried out at the colonoscopy unit, Razi Hospital,
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Rasht, Iran. It included all patients of either gender who underwent colonoscopies for various indications during three year (March 2006 to March 2009). The subjects were gathered with enumeration method. The project was approved by the ethics committee of the faculty of medicine, Guilan University of medical sciences, Iran.

Data was gathered from medical records of patients and by calling their physicians if necessary.

Patients' data including age, sex, location and type of lesion found by colonoscopy and pathology diagnosis were retrieved. Gastroenterology faculty, or fellows under close supervision by the faculty, performed all endoscopic examinations. All colonoscopic abnormalities were noted and biopsied if indicated, and all polyps were biopsied and removed.

All patients were prepared using Miralax (Bisacodyl 5 mg + Sodium docusate 100 mg) 6-10 tabs 12 h before the procedure and 2-3 clear-water enemas. Conscious sedation using 2/5-5 mg Midazolam and 4-8 mg nalopine intravenous was used for all patients. Olympus GIF-CF140 video scopes were used following standard high-level liquid disinfection with Cidex 2.5% (Johnson & Johnson, USA) after cleaning and washing.

SPSS for Windows, version 16 was used for data entry. The quantitative and qualitative data were analyzed by Chi-square and Fisher’s exact test respectively. Continuous variables are presented as mean ± standard deviation (SD); categorical variables are presented as percentages. P-value < 0.05 was as significant.

Result

During the study period, 1447 patients were identified as having a colonoscopy. Out of 1447 patients, 49 (3.4%) were excluded due to missing data and 1398 were included in the further analysis. Among that patient 529 (48.8%) were male and 715 (51.2%) were female. The mean age was 48.91 ± 17.40 years (range 13–95 years); while the most of them are in groups 50 to 60 & 60 to 70 years old.

The most common findings in colonoscopy were hemorrhoids (315 cases) and polyps (207 cases) that were be 22.6 and 14.8 of all of them. Other findings include exudative-infiltrative & inflammatory wounds, tumoral lesions and others (abscess, volvulus and extra luminal masses). In some of patients, more than one disorder have be seen for example 11.2% of them have polyps and hemorrhoids and there were 7.2% polyps and diverticulitis, 5.1% hemorrhoids and Fisher, 2.8% hemorrhoids & exudative-infiltrative wounds and 2.18% hemorrhoids and vascular lesions.

Four most frequent findings in colonoscopy report were normal findings, hemorrhoids, polyps, and Infiltrative-exudative wounds (Table 1). Among patient who reported hemorrhoids in pathology, (178) 56.7% were grade 2, (89) 28.2% grade 1 and (48) 15.1% grade 3. In patients who have polyps, they were mostly found in Rectosigmoid (41.1%), transverse colon (16.1%) and descending colon (15.4%). 131 (67.5 %) of polyps smaller than 1 cm. It should be said that adenomatous (148, 76.3%), hyperplasic (38, 19.6%) and inflammatory (8, 4.1%) polyps have the most frequency. Among IBD patients 69.3 % have ulcerative colitis & 29.3 % of them have crohns (Table 2).

In 40 to 50 & 60 to 70 years old patient, polyps were seen more than the other age groups (24.1% and 21.2%), while most adenocarcinomas were in more than 70 (43.3%) and 60 to 70 (22.7%) years old (Table 3).

Results showed that frequency of hemorrhoids (56.5% Vs 46.5%), fisher (61.4% Vs 38.6%), vascular lesions (69.7% Vs 30.3%) & prolaps (60% Vs 40%) were more than in female and polyps (51.7% Vs 48.3%), tumoral lesions (68% Vs 32%) & exudative-infiltrative wounds (52.8%
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In the current study most of the patients were female while Agah et al [16] have found that frequency of male in patients who undergone colonoscopy is more than female. In Imperiale et al and in Betes et al study most of patients were male [17, 18].

Most patients (36.5%) are between 40-60 years old, less of them are in the age group of more than 80 years and younger than 20 years (3.4% and 5.8%, respectively). In Bowles, et al study, also, age range was 16-95 years, that 14.1% of them were more than 75 years old [5].

In the present study normal colonoscopy finding showed the highest frequency (35.3%) that is in comparison with other studies like Fani et al study was (30.4%) [19] and Wong survey was (21.5%) [20].

These negative results were as valuable as the positive observations, providing relief to both the patient and his/her physician [21]. However our results were more similar to Amjad et al [1] and Bowels et al [5] studies that normal colonoscopies were 38% and 42/1%. In our study, hemorrhoids and polyps were the most common abnormal findings. While in Fani study respectively these rates were 20% and 9.65% [19].

In a study done at King Hussein Medical Center in Jordan, the most common abnormal findings were colonic cancer in 29%, colonic polyps in 24%, and IBD in 16% [22]. In another study was done by Amjad et al [1] IBD (19.3%), tumors (12.2%) and hemorrhoids (10.7%) were the most abnormal outcome. The difference may be

**Table 2. Distribution of location of lesion**

<table>
<thead>
<tr>
<th>Location of lesion</th>
<th>Number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anal canal and anus</td>
<td>407</td>
<td>43.8</td>
</tr>
<tr>
<td>Rectosigmoid colon</td>
<td>230</td>
<td>26</td>
</tr>
<tr>
<td>Descending colon</td>
<td>75</td>
<td>8.5</td>
</tr>
<tr>
<td>Transverse colon</td>
<td>69</td>
<td>7.8</td>
</tr>
<tr>
<td>Ascending colon</td>
<td>57</td>
<td>6.4</td>
</tr>
<tr>
<td>Total colon</td>
<td>66</td>
<td>7.5</td>
</tr>
<tr>
<td>total</td>
<td>904</td>
<td>100</td>
</tr>
</tbody>
</table>

Vs 47.2%) seen in colonoscopy were more in male. However Chi Square statistical analysis, there were no significant relation between sex and colonoscopy findings.

**Discussion**

Colonoscopy as a acceptable and advocatable procedure in all guidelines was advised for screening in patient older than 50 and also was used for colon neoplasm’s like Familial Adenomatous Polyposis, Hereditary non-polyloid colon cancer and occult or gross blood in the stool in under 50 [12, 14]. Other colonoscopic indications are GI bleeding, Abdominal pain, Anemia, Radiologic abnormality, Evaluation and follow-up of inflammatory bowel disease, Differentiating diverticular disease and malignancy, Follow-up of patient with prior colon surgery, reduction of volvulus, decompression of dilated colon (Ogilvie’s syndrome), Confirmation of lesion location at the time of laparotomy and during laparoscopic procedures [15].

**Table 3. Distribution of colonoscopy outcome among age group**

<table>
<thead>
<tr>
<th>Colonscopy outcome</th>
<th>&lt;20 yrs</th>
<th>20-40 yrs</th>
<th>40-60 yrs</th>
<th>60-80 yrs</th>
<th>&gt;80 yrs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>24(4.9)</td>
<td>185(37.4)</td>
<td>183(39.1)</td>
<td>93(18.8)</td>
<td>9(1.8)</td>
<td>494</td>
</tr>
<tr>
<td>Hemorrhoids</td>
<td>16(5)</td>
<td>95(30.1)</td>
<td>132(42.1)</td>
<td>65(20.6)</td>
<td>7(2.2)</td>
<td>315</td>
</tr>
<tr>
<td>Polyps</td>
<td>8(3.8)</td>
<td>28(13.5)</td>
<td>85(41.2)</td>
<td>74(35.7)</td>
<td>12(5.8)</td>
<td>207</td>
</tr>
<tr>
<td>Diverticulosis</td>
<td>1(1.7)</td>
<td>4(6.8)</td>
<td>23(39)</td>
<td>28(47.5)</td>
<td>3(5)</td>
<td>59</td>
</tr>
<tr>
<td>Exudative-infiltrative lesion</td>
<td>18(14.6)</td>
<td>51(41.5)</td>
<td>29(23.6)</td>
<td>25(20.3)</td>
<td>0</td>
<td>123</td>
</tr>
<tr>
<td>Inflammation-erythema</td>
<td>0</td>
<td>9(25.7)</td>
<td>16(45.7)</td>
<td>10(28.6)</td>
<td>0</td>
<td>35</td>
</tr>
<tr>
<td>Vascular lesion</td>
<td>4(12.1)</td>
<td>6(18.2)</td>
<td>12(36.4)</td>
<td>11(33.3)</td>
<td>0</td>
<td>33</td>
</tr>
<tr>
<td>Tumoral lesion</td>
<td>0</td>
<td>15(20.8)</td>
<td>12(16.7)</td>
<td>31(43.1)</td>
<td>14(19.4)</td>
<td>72</td>
</tr>
<tr>
<td>Fissure</td>
<td>10(22.7)</td>
<td>17(38.6)</td>
<td>14(31.8)</td>
<td>3(6.9)</td>
<td>0</td>
<td>44</td>
</tr>
<tr>
<td>Rectal prolps</td>
<td>0</td>
<td>0</td>
<td>1(20)</td>
<td>3(60)</td>
<td>1(20)</td>
<td>5</td>
</tr>
<tr>
<td>Others</td>
<td>0</td>
<td>2(18.2)</td>
<td>4(36.3)</td>
<td>3(27.3)</td>
<td>2(18.2)</td>
<td>11</td>
</tr>
<tr>
<td>total</td>
<td>81(5.8)</td>
<td>412(29.5)</td>
<td>511(36.5)</td>
<td>346(24.8)</td>
<td>48(3.4)</td>
<td>1398</td>
</tr>
</tbody>
</table>
explained by the changeable incidence and prevalence of diseases in different countries and type of sample selection in their study.

The prevalence of tumoral lesions and ulcers (8.8% & 5.2%, respectively), as well as, relative diseases (IBD, Colorectal cancer) that had been found in our study are comparable with other results obtained by Fani study (IBD: 10.9%, Colon cancer: 4.3%) [19], and Agah, et al study tumoral lesions in 4.8% of patients were seen [16].

In the current study, all types of diagnosed colorectal cancers in examined patients was the type of adenocarcinoma that closely match with similar studies have been done Rectosigmoid was the common origin for all lesions except the Diverticulitis (p <0.001). Abdollahi et al [23] showed that the most prevalence of CRC in rectum (41%) and sigmoid (21%). In this study, most patients with tumoral lesions (43.1%) are between 60 - 80 years, and 68% of them are men.

There are limitations of the current study; being a retrospective design, the histology was verified by different pathologists and completeness of the colonoscopies (how well the bowel was prepared) could not be verified.

**Conclusion**

Colonoscopic detection of hemorrhoids is a common finding in patient undergone colonoscopy. The most frequent site for lesions which found in anal canal and anus. In addition to, normal findings had a high rate and it indicates that unnecessary colonoscopy have been required by physicians. Although colonoscopy seems to be unnecessary in some, but colonoscopy for colon cancer screening and early prevention is essential.

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