Colorectal polyps Clinical, Endoscopic, and Histopathological features

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Abstract

Background: There are few descriptive studies of colorectal polyps in Iraq

Design: A retrospective study

Setting: Gastroenterology and Hepatology teaching hospital -Baghdad -Iraq

Patients and methods: During the study period (1st of August -2003 to 31 of December -2004)1905 total colonoscopy and sigmoidoscopy procedure were carried. Total colonoscopy were carried for 1467(male 867, female 600).135(9.2 %) patients had colorectal polyps .96 patients were included when they fulfilled the including criteria of the study.

Results: One hundred-sixty colorectal polyps (CRP) were identified in 96 patients examined. Polyps were single in 60(62.5%) and multiple in 36(37.5%) of patients. Polyp were labeled as sessile in 95 of 160(59%) or pedunculated in 65 of 160 (40.6%), 61.3% were small size (<1cm), 32.5% were medium size (1-2cm) and 6.3 % were of large size (>2cm). The most common sites for CRP were rectum and sigmoid .Adenomatous polyp was found to be the most frequent type of CRP identified in Iraqi patients and tubulovillous adenoma was the most common adenoma (62.4%). 72.7% of patients who have tubular adenoma have mild dysplasia, 60.7% of patients who have tubulovillous adenoma have moderate-sever dysplasia.Retention polyps were identified in 19 patients (mean age 12.3 years) fifty Percent were 1-2cm in size. hyperplastic polyps were identified in 18 patients(Mean age 44.3 years) .

Conclusion

1. Tubulovillous adenoma with moderate-severe dysplasia are common in Iraqi patients referred to this hospital , with high risk of malignant changes seen in this type of colorectal polyps ,screening programs should be developed in Iraq
2. Most of colorectal polyps were small size so Barium enema can not be recommended as a screening test

3. Most patients who have tubulovillous adenoma have moderate-sever dysplasia so this patients need proper follow up .

Introduction

Gastrointestinal polyp is discrete mass of tissue that protrudes into the lumen of the bowel [1, 2, 3], in the colon, polyps may be single or multiple, pedunculated or sessile and sporadic or part of an inherited syndrome [1, 2, 3].Colonic polyps may be divided into two major groups; Neoplastic (the adenomas and carcinomas) which subdivided to benign (adenoma) include tubular,tubulovillous, and villous adenoma and malignant non-invasive carcinom, carcinoma in situ, intramucosal carcinoma, and invasive carcinoma (through muscularis mucosae) the second major group is non-neoplastic polyp which is include hyperplasic, mucosal, juvenile, peutz-Jeghers,and inflammatory polyps.[1][4]

Adenomatuos polyps

The neoplastic nature of adenomas is apparent by histological examination of their glandular architecture .Tubular adenomas are the most common subgroup, characterized by a complex network of branching adenomatous glands .In villous adenomas ,the adenomatous glands extends straight down from the surface to the center of the polyp .Tubulovillous adenomas manifest a combination of these two histological types. The dysplasia exhibited by all adenomas can be graded subjectively on the basis of certain cytologic and architectural features into three categories ,mild ,moderate ,and sever .Adenomas have classically been categorized into three size groups: less than 1 cm,1 to2 cm ,and greater than2 cm [1,4] the risk of cancer in any adenomatous polyp depends on size (larger than 1 cm), the presence of villous elements, high-grade dysplasia, and multiple adenoma(3 or more) [1,4]

Screening

Several studies have shown that screening for colorectal cancer by fecal occult blood testing and lower endoscopy with removal of polyps reduces the mortality rate associated with colorectal cancer. [5, 6, 7]

Epidemiology

The prevalence of adenomatous polyp is effected by four major factors ;the inherent risk for colon cancer in the population ,age, gender ,and family history of colorectal cancer .The frequency of colonic adenomas varies widely among populations ,but it tends to be higher in population at greater

risk for colon cancer .Adenoma prevalence also correlates with socioeconomic class.

Data from autopsy series provide an approximation of adenoma prevalence .In populations at low risk for colon cancer (Japan, CostaRica, and Colombia) adenoma prevalence rates are under 12% .In most intermediate and high risk populations (Brazil,New Orleans)adenomas are found in 30%-40% of the population but rate as high as 50%-60% have been observed.

Recent studies indicate that asymptomatic average-risk individuals age 50 years or more have colonoscopic adenoma prevalence rates ranging from 24% to 47% .Men have a 1.5 relative risk of adenomas compared with age-matched women[1,8].

Though Middle East and Iraq are considered as a low incidence area for adenomatous polyps of the large bowel [9,10,11,12,13].Al-Khalidi et al in the study of 1067 total colonoscopy 4% had colorectal polyp from which 45.5% was adenomatous polyps[14]

Aim of the study

1. To identify the clinical presentation, endoscopic descriptions and histopathological features of group of Iraqi patients with colorectal polyps

2. To identify the histopathological types, size, and site of polyps in relation to age and sex

Patients and methods

It is a retrospective study carried out at gastroenterology and Hepatology teaching hospital-Baghdad- Iraq.

During the study period (1st of August -2003 to 31 of December -2004)1905 total colonoscopy and sigmoidoscopy procedure were carried. The indications were bleeding per rectum, abdominal pain ,constipation ,weight loss ,diarrhea ,and altered bowel motion.

Total colonoscopy were carried for 1467(male 867, female 600).Colorectal polyp(CRP)were identified in 135 patients (9.2%).Out of patients with different polyps 96 patients were included when they fulfilled the including criteria of the study .Patients were included when they did not have the following criteria (Exclusion criteria)

1. Patients who have inflammatory bowel disease
2. Patients who have familial polyposis coli
3. Patients who have colorectal malignancy
4. Patients underwent surgical resection of bowel
5. Un prepared patients during colonoscopy
6. Patients with only sigmoido-0scopic examination

Polyp were identified endoscopically as any localized elevation above the surface of the intestinal mucosa[8].Size of polyp was determined using forceps biopsy (0.5 cm)and it is divided into three groups <1cm,1-2cm,and >2cm[1]..Biopsy was taken for histopathological study either forceps biopsy or whole polyp by polypectomy.

Results:

Total colonoscopy were carried out for 1467 patients(male 867 , female 600),the indications for colonoscopy were bleeding per rectum (BPR), abdominal pain, constipation, weight loss, diarrhea, and altered bowel motion (55.2%, 45.8%, 30%, 28%, 15.6%, and 9.4% respectively) in decreasing order of occurrence .Table (1)

Result of colonoscopy

Colorectal polyp(CRP) was identified in 135 (9.2%) patient .After applied exclusion criteria, 96 patients were included in the study, and 160 polyps were identified in those 96 patients.

Polyps were single in 60(62.5%) and multiple in 36(37.5%) of patients, polyps were labeled as sessile in 95 of 160; (59.4%) or pedunculated in 65 of 160; (40.6%)

With regard to their sites in colon, 68 of 160 polyps (42.5%) were found in rectum, 39(24.3%) were found in the sigmoid and only four polyps were found in the cecum (Table 2).

With regard to the polyp's size, 98polyps (61.3%) were of small size (<1cm), 52polyps (32.5%) were medium size (1-2cm) and only 10 polyps (6.3 %) were of large size (>2cm) (Table 2).

Histopathological features

Histopathologically polyps were found to be adenoma in 93 polyps (58%)[tubular 32 (34.4%), tubulovillous 58 (62.4%) and villous 3(3.2%)]. Retention polyps were described in 41 polyps (25.6%) while hyperplastic described in 19 polyps (11.9%) (Table 3)

Patients with adenomatous polyp

Ninety-three adenomatous polyps were found in 53 patients. 32(34.4%) were tubular, 58(62.4%) were tubulovillous and 3(3.2%) were villous, 24 patients had multiple adenomas and 29 had single adenoma. Mean age of patients 51.5 years (tubular 49.6 years, tubulovillous 58.7years and villous 46.3 years) (Table 4)

With regard to the size of the adenoma 59 (63.4%) adenomatous polyps were less than 1cm, 25(26.9%) were 1-2cm and 9(9.7%) were more than 2 cm. (Table 5)

With regard to degree of dysplasia, of 53 patients who had adenomas 27 patients had

mild dysplasia (tubular 16, tubulovillous 11) and 26 patients had moderate to sever dysplasia (tubular 6 ,tubulovillous 17 ,villous 3).In villous adenoma one patient was female, age 22 years and had severe dysplasia and two male patients mean age 58.5 years had severe dysplasia.Most of patients who have tubular adenoma have mild dysplasia (72.7%) , while 60.7% of patients who have tubulovillous adenoma have moderate-sever dysplasia (Table6).

Non-neoplastic polyps

Sixty seven polyps were non neoplastic, 41 retention polyps were identified in 19 patients (mean age 12.3 years),21(51.2%)of polyps were <1cm in size and 19 (46.3%) 1-2cm and 1 polyps were more than 2 cm.19 hyperplastic polyps were identified in 18 patients(mean age 44.3 years),78.9% of polyps were less than 1 cm and 21% were 1-2 cm in size , hamartomas were represent 1.25% of all polyps and 3.1% of polyps were inflammatory (Tables3, 4,5)

Discussion

Most polyps produced no symptoms and remain clinically undetected [1, 8, 15] occult or overt rectal bleeding are the most common symptoms [1, 15]. Intermittent abdominal pain from recurrent intussusceptions or spasm with a large polyp occurs but it is unusual [15].

This study showed that 36 (37.5%) of patients had multiple polyps and 60 patients (62.5%) had single polyp, 59.4% of polyps were sessile and 40.6% polyps were pedunculated. Our study is consistent partially with that of K.N.Syrigos, et al who found that the polyps were multiple in 21 (41%) cases but he found that sessile polyps were 90.7% and pedunculated 9.3 %[25] ,so this inconsistent with our finding.

This study found that the most common polyps were adenomatous and the tubulovillous polyps were the most common type in this group. This is consistent with AL-Kalidi et al study [14].

Linares-Santigo-E, et al studied 446 polyps, he found 90.2% of polyps were adenoma; most of them were tubular adenoma [17]. H.S.Copper found that adenomas are extremely common in the adult population in the western world (60%) and the vast majority of it is tubular adenomas (95%) [18].

Our study inconsistent with Smajic M, G hosh S, et al who found that neoplastic polyps make 32.5% of all polyps, while non-neoplastic polyps make 68.5% of them [19].

As regard the size of CRP, 63.4% of the adenomatous polyp was <1 cm in size, which are easily missed by Barium enema .This is consistent with. H.S.Copper who

found that vast majority of neoplastic polyps are small (<1 cm) [18]. Linares-Santigo-E, et al found 55.1% of the polyps were smaller than 1 cm [17].

This study found most of tubular adenoma has mild dysplasia .while most of tubulovillous adenoma and all villous adenoma had moderate to severe dysplasia .This is consistent with Al-Khalidi et al[14],but inconsistent with Linares-Santigo-E, et al who found most common type of adenoma were tubular with low - grad dysplasia[17]

This study showed that juvenile polyps were the second common type of polyps and were more prevalent in young age group, mean age 12.3 year. This is consistent with H.S.Cooper and R.F.J. Jacoby, S.Schlock, et al who found that juvenile polyps occur most often in children as the sporadic entity[18,20].

Conclusions and recommendations:

1. Tubulovillous adenoma with moderate-severe dysplasia are common in Iraqi patients referred to this hospital , with high risk of malignant changes seen in this type of colorectal polyps ,screening programs should be developed in Iraq

2. Most of colorectal polyps were small size so Barium enema cannot be recommended as a screening test

3. Most patients who have tubulovillous adenoma have moderate-sever dysplasia so this patients need proper follow up.

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Tables:

Table (1) shows the indications of colonoscopy

Indications	NO. (%)
B.P.R*	53 (55.2%)
Abdominal pain	44 (45.8%)
constipation	29 (30%)
Weight loss	27 (28%)
Diarrhea	15 (15.6%)
Alternating bowel motion	9 (9.4%)

*BPR=bleeding per rectum

Table (2) shows distribution of colorectal polyps according to size and site

Size	rectum	sigmoid	Descen- ding	transverse	ascending	cecum	Total
<1cm	48 (48.9%)	22 (22.4%)	11 (11%)	12 (11.2%)	3 (3%)	2 (2%)	98 (61.3%)
1-2cm	17 (32.7%)	13 (25%)	9 (17.3%)	10 (19.2%)	2 (3.8)	1	52 (32.5%)
>2cm	3 (30.3%)	4 (40%)		1	1	1	10 (6.3%)
Total	68 (42.5%)	39 (24.3%)	20 (12.5%)	23 (14.4%)	6 (3.8%)	4 (2.5%)	160

Table (3) shows location of colorectal polyps and histopathological types

Histopatholog-ical typs	NO. (%)	Rect-um	Sigmo-id	Desce-nding	Transver-se	Ascendi-ng	cecum
Adenomas	93 (58)	35	26	13	15	2	2
Tubular	*32 (34.4)*	*17*	*8*	*3*	*3*	*1*	
Tubulo-villous	*58 (62.4)*	*18*	*17*	*10*	*11*	*1*	*1*
Villous	*3 (3.2)*		*1*		*1*		*1*
Retention	41 (25.6)	20	7	4	6	3	1
Hyperplastic	19 (11.9)	10	5	1	2		1
Hamartomas	2(1.25)	2					
Inflammatory	5(3.1)	1	1	2		1	
Total	160						

Table (4) shows distribution of colorectal polyps according to age and gender of patient

Histopathological Types	No. of patients	Mean age year	Male(mean age) Year	Female(mean age) year
Adenomas	53	51.5	33(55.8)	20(43.6)
Tubular	*22*	*49.6*	*13(53.3)*	*9(44.3)*
Tubulo-villous	*28*	*58.7*	*18(55.6)*	*10(64.4)*
Villous	*3*	*46.3*	*2(58.5)*	*1(22)*
Retention	19	12.3	15(8)	4(28.2)
Hyperplasic	18	44.3	14(44.3)	4(34.3)
Hamartomas	2	35	2(35)	
Inflammatory	4	48.8	1(80)	3(38.3)

Table (5) shows histopathological types of colorectal polyps and its size

Types	<1cm	1-2 cm	>2cm	Total
Adenomas	59 (63.4%)	25 (26.9%)	9 (9.7%)	93
Tubular	*25 (78 %)*	*7 (22 %)*		*32*
Tubulo-villous	*34 (58.6)*	*18(31 %)*	*6 (10.4)*	*58*
Villous			*3*	*3*
Retention	21 (51.2%)	19 (46.3%)	1	41
Hyperplastic	15 (78.9%)	4 (21%)		19
Hamartomas	2			2
Inflammatory	1	4		5
Total	98	52	10	160

Table (6) shows degree of dysplasia in patients who have adenoma according to gender of patients

Types	No.	gender	Mild dysplasia	Moderate-sever dysplasia
Tubular	22		16 of 22 (72.7 %)	6 of 22 (27.3 %)
		Male	10(62.5%)	3(50%)
		Female	6(37.5%)	3(50%)
Tubulo-villous	28		11 of 28 (39.3 %)	17 of 28 (60.7 %)
		Male	7(63.6%)	11(64.7%)
		Female	4(36.4%)	6(35.3%)
Villous	3		0 0 0	3 of 3 (100%)
		Male		2(66.7%)
		Female		1(33.3%)
Total	53		27	26