

# Clinical, endoscopic, histopathological characteristics of patients with colorectal polyps - Endoscopy Gastroenterology Center, Hue University of Medicine and Pharmacy Hospital

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**Background:** Colorectal polyps are a relatively common diseases in the group of lower gastrointestinal tract diseases. The prevalence of colorectal polyps ranges from 20 to 50%. Polyps are formed due to excessive hyperplasia of the mucosa and the malignancy rate of colorectal polyps is higher than other sites. **Objectives:** (1) To describe some clinical and endoscopic features of colorectal polyps; (2) To evaluate the histopathological characteristics and the relationship between histopathology and some clinical and endoscopic features of colorectal polyps. **Subjects:** The patients aged 16 years old and older who were diagnosed with colon polyps at the Center for Gastroenterology - Endoscopy at Hue University of Medicine and Pharmacy Hospital from April 1st, 2020 to March 30th, 2021. **Methods:** Cross-sectional, retrospective description. **Results:** Study on 67 patients who were dianosiged as having colorectal polyps through endoscopy, in which, 48 patients underwent polypectomy and histopathology. The mean age is  $55.8 \pm 15.7$  years old, the most common age group is  $\geq 45$  years old, male/female is 2/1. The time from symptoms onset to disease detection is usually 6 months to less than 1 year (37.4%). The common clinical symptoms: abdominal pain (83.6%), diarrhea (29.9 %), constipation (28.4%), dysentery syndrome (13.4%), bloody stools (31.3%). The position of polyps: anus (1.5%), rectum (47.8%), sigmoid colon (40.3%), descending colon (31.3%), transverse colon (22.4%), ascending colon (28.4 %), cecum (13.4%). The proportion of patients having  $\geq 2$  polyps (59.7%), 1 polyp (40.3%). Polyp sizes: 5 - < 10 mm (50.7%), < 5 mm (37.4%),  $\geq 10$  mm (11.9%) . The percentage of sessile polyps is higher than that of pedunculated polyps at each locations. Histopathological types: adenomatous polyps (60.4%), hyperplastic polyps (20.8%), malignant polyps (4.2%). Polyps with dysplasia (64.6%), mild – grade dysplasia (56.3%), severe-grade dysplasia (8.3%). The differences were statistically significant between the grade of dysplasia and the polyp size groups, between the histopathology and the grade of dysplasia ( $p < 0.05$ ). **Conclusions:** Colorectal polyps are more common in patients  $\geq 45$  years old, male are much more of having than female. Abdominal pain, bloody stools are common symptoms. Common polyp phenotypes are sessile polyps,  $\geq 2$  polyps, 5 - < 10 mm in size, mainly in the rectum. Adenomatous polyps are the most common histopathological type, with the high rate of dysplasia.

**Keywords:** clinical, endoscopy, histopathology, colorectal polyps.

## 1. BACKGROUND

Colorectal polyps is a common disease in the group of diseases at the lower gastrointestinal tract. The prevalence of colorectal polyps ranges from 20 to 50%. Polyps are formed due to excessive hyperplasia of the mucosa and colon polyps has higher risk of malignancy than other sites, more than 95% of colorectal cancers are derived from ductal polyps [1-3]. Clinical symptoms are hidden, atypical and easily confused with other diseases. In recent years, flexible endoscopic techniques play a role in the diagnosis and the endoscopic polypectomy techniques, histopathological examination, follow-up after resection, they reduce colorectal cancer progression and achieve therapeutic effect [4-6]. We carry out the study with the purpose of surveying some clinical

characteristics, endoscopy and histopathology of patients with colorectal polyps.

## 2. SUBJECTS AND METHODS

### 2.1. Research subjects

Patients  $\geq 16$  years old were diagnosed with colon polyps through endoscopy at the Center for Gastroenterology - Endoscopy, Hue University of Medicine and Pharmacy Hospital during the period from April 1<sup>st</sup>, 2020 to March 30<sup>th</sup>, 2021 and participate in the research.

### 2.2. Research Methods

#### 2.2.1. Research design

Cross-sectional, retrospective description.

#### 2.2.2. Sample size

Study on 67 patients  $\geq 16$  years old diagnosed through endoscopy.

### 2.3. Research content

- Make a research form and after obtaining the consent from the patient, conduct to the study.
- Taking the medical history and clinical examination.
- Prepare to the patients:
  - + Explain to the patients about the endoscopic procedure.
  - + Check basic tests.
  - Prepare to technique.
  - Perform to endoscopy:
  - + Position: the patients lie on the left side or on the back.

- + Rectal examination: assess patients ' rectum and anus.
- + Conduct endoscopic manipulations, when polyps are detected:
  - Comment on the morphological features.
  - If polyp removal is indicated, samples will be taken and sent to the Department of Pathology Hospital of Hue University of Medicine and Pharmacy.
- After 3-5 days, we record to histopathological results.

### 2.4. Data processing methods:

- SPSS 20.0 software.

## 3. RESEARCH RESULTS

### 3.1. General characteristics

#### 3.1.1. Age and sex distribution

**Table 1.** Distribution of age and sex groups of patients

Gender Age	Male		Female		Total	
	n	%	n	%	n	%
16 - < 30	5	7.5	1	1,5	6	9.0
30 - < 45	4	6.0	4	6.0	8	11.9
45 - < 60	18	26.9	3	4.5	21	31.3
≥ 60	18	26.9	14	20.9	32	47.8
Total	45	67.2	22	32.8	67	100.0
X ± SD (age)	55.8 ± 15.7					

Comment: The average age is 55.8 ± 15.7 years old; age group ≥ 60 accounted for the highest proportion with 47.8%; age group 16 - < 30 accounted for the lowest rate with 9.0%. Regarding gender: male (67.2%), higher than female (32.8%). The male/female ratio is 2/1.

#### 3.1.2. Onset time

From 6 months to less than 1 year has the highest rate (37.4%), ≥ 2 years (32.8%), <6 months (17.9%), 1 year - < 2 years (11.9%).

### 3.2. Clinical

#### 3.2.1. Systemic symptoms

Fatigue symptoms accounted for the highest rate of 53.7%; anorexia accounted for 28.4%; weight loss and other symptoms such as insomnia, etc. are rare systemic symptoms.

#### 3.2.2. Digestive symptoms

**Table 2.** Digestive symptoms

Gastrointestinal symptoms		Number (n)		Rate (%)	
Abdominal pain	Dull abdominal pain	56	39	83.6	58.2
	Cramping pain		8		11.9
	Pain with tenesmus		9		13.4
Defecation	Diarrhea	48	20	71.6	29.9
	Constipation		19		28.4
	Dysentery syndrome		9		13.4

Stool properties	Soft	14	20.9
	Liquid	20	29.9
	Hard Dry	12	17.9
	Bloody stools	21	31.3
Blood in stools	Bright red	20	29.9
	Bruise	1	1.5

Comment: Abdominal pain and abnormalities after defecation accounted for a high rate, (83.6% and 71.6%, respectively). In terms of stool properties: bloody and liquid stools accounted for the highest percentages of 31.3% and 29.9%; The lowest is dry hard manure accounting for 17.9%. Among patients with symptoms of bloody stools, the most abundant bright red.

### 3.2.3. Other symptoms

- Indigestion accounted for the highest rate (32.8%); pain after defecation (20.9%); Abnormal mass in the anus after defecation (10.4%).

- Anemia (11.9%).

- Abdominal distension (31.3%) and localized pain (16.4%).

- Intestinal obstruction, semi-obstruction (6%).

### 3.3. Features of colorectal polyps

#### 3.3.1. Location

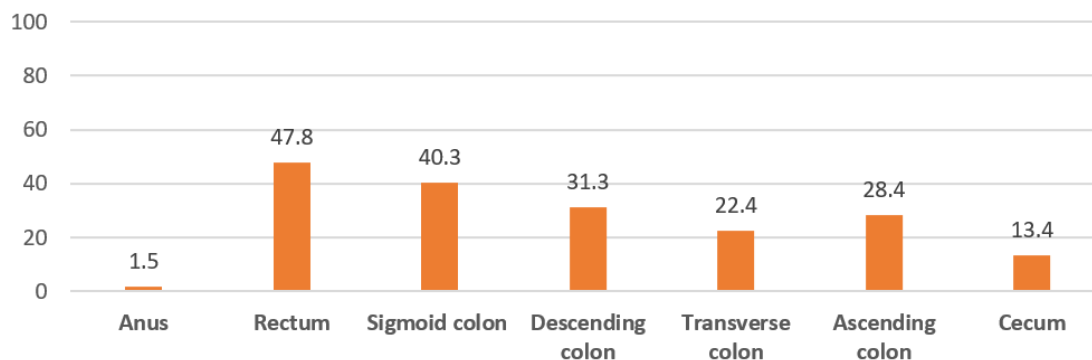


Chart 1. Location of polyps

Comment: Rectal position accounted for the highest rate at 47.8%; next is the sigmoid colon (40.3%); the descending and ascending colon accounted for a relatively high proportion, (31.3% and 28.4%); transverse colon (22.4%); cecum (13.4%) and the lowest is the anus (1.5%).

#### 3.3.2. Number of polyps per patient

Table 3. Number of polyps per patient

Number of polyps	Number (n)	Rate (%)
1 polyp	27	40.3
≥ 2 polyps	40	59.7
Total	67	100.0

Comment: ≥ 2 polyps (59.7%), 1 polyp (40.3%).

#### 3.3.3. Classification of polyp sizes

Table 4. Classification of polyp sizes

Polyp sizes	Number (n)	Rate (%)
< 5 mm	25	37.4
5 - < 10 mm	34	50.7
≥ 10 mm	8	11.9
Total	67	100.0

Comment: 5 - < 10 mm accounted for the highest rate of 50.7%; group of  $\geq 10$  mm polyps accounted for the lowest rate 11.9%; while group < 5 mm accounted for 37.4%.

### 3.3.4. Classification of shapes of polyps at each location

Table 5. Shapes of polyps at each location

Location	Stalk	Sessile polyp		Pedunculated polyp	
		Number (n)	Rate (%)	Number (n)	Rate (%)
Anus		0	0.0	1	1.5
Rectum		9	13.4	20	29.9
Sigmoid colon		4	6.0	23	34.3
Descending colon		5	7.5	16	23.9
Transverse colon		4	6.0	12	17.9
Ascending colon		5	7.5	15	22.4
Cecum		0	0.0	9	13.4

Comment: The rate of sessile polyps is higher than that of pedunculated polyps at each location.

### 3.4. Histopathological characteristics and the relationship between histopathology and some clinical and endoscopic features

Among 67 patients with colorectal polyps, 48 patients only had indication of polypectomy and histopathology.

#### 3.4.1. Histopathological features

Table 6. Histopathological characteristics

Classification	Number (n)	Rate (%)
Hyperplastic polyps	17	35.4
Adenomatous polyps	29	60.4
Malignant polyps	2	4.2
Total	48	100.0

Comment: Adenomatous polyps accounted for the highest rate 60.4%; hyperplastic polyp 35.4%; the lowest was malignant polyps accounted for 4.2%.

#### 3.4.2. Dysplasia and degree of dysplasia

The proportion of patients with dysplastic polyps accounted for 64.6%, of which mild - grade dysplasia (56.3%) and severe - grade dysplasia (8.3%).

#### 3.4.3. The relationship between the degree of dysplasia and polyp size

Table 7. The relationship between the degree of dysplasia and polyp size

Size Dysplasia level	< 5 mm		5 - < 10 mm		$\geq 10$ mm		Total		p
	n	%	n	%	n	%	n	%	
Non-dysplasia	4	8.3	12	25.0	1	2.1	17	35.4	0.012
Mild	10	20.8	15	31.2	2	4.2	27	56.2	
Severe	1	2.1	0	0.0	3	6.2	4	8.3	
Total	15	31.2	27	56.2	6	12.5	48	100.0	

Comment: The difference was statistically significant between the degree of dysplasia and the polyp size group ( $p < 0.05$ ).

**3.4.4. The relationship between histopathology and the degree of dysplasia****Table 8.** The relationship between histopathology and the degree of dysplasia

Histopathology	Degree of dysplasia		No dysplasia		Mild		Severe		Total		p
	n	%	n	%	n	%	n	%	n	%	
Hyperplasia	17	35.4	0	0.0	0	0.0	0	0.0	17	35.4	< 0.001
Adenoma	0	0.0	27	56.2	2	4.2	29	60.4			
Malignancy	0	0.0	0	0.0	2	4.2	2	4.2			
Total	17	35.4	27	56.2	4	8.3	48	100.0			

Remarks: There was a statistically significant difference between the histopathological form and the degree of dysplasia ( $p < 0.05$ ).

**4. DISCUSSION****4.1. Clinical features****4.1.1. Age and gender**

A study on 67 patients showed that colorectal polyps can be found at any age, in which the age group  $\geq 45$  accounted for the highest rate of 79.1%, the average age was  $55.8 \pm 15.7$ . According to author Nguyen Van Kien (2016): average age is 54.2, age group  $\geq 45$  (78.3%) [7]. Male/female ratio: 2/1 with males (67.2%) and females (32.8%). Authors Du Huynh Hong Phong, Pham Van Linh and La Van Phuong (2015) came with a male/female ratio of 1.7/1 [8].

**4.1.2. Clinical**

Regarding systemic symptoms: fatigue and anorexia accounted for the highest percentage (53.7% and 28.4%, respectively), weight loss and insomnia symptoms were less common, about 10%.

About digestive symptoms: abdominal pain (83.6%), diarrhea (29.9%), constipation (28.4%), bloody stools (31.3%). Research by author Nguyen Van Kien (2016): constipation (16.7%), loose stools (23.3%), bloody stools (15%), no stool disorders (15%) [7]. Some other symptoms: anemia, abdominal distension, dyspepsia, pain after defecation and abnormal mass after defecation, semi-obstruction/intestinal obstruction... were also encountered with relative frequency in the study sample.

**4.2. Features of colorectal polyps****4.2.1. Location**

Polyps are more frequently found in the left than in the right, the most site is the rectum (47.8%). Authors Nguyen Thi Chin and Nguyen Van Quan (2013) concluded that the rate of rectal polyps (45.6%) [9]. According to author Nguyen Van Kien (2016) rectal polyp accounted for the highest (26.7%) [7].

**4.2.2. Number of polyps**

1 polyp (40.3%) and  $\geq 2$  polyps (59.7%). This

result otherwise different compared to those found in studies conducted by authors Nguyen Thi Chin and Nguyen Van Quan (2013), author Nguyen Van Kien (2016), author Mahsa Ahadi et al (2016), in which 1 polyp had the higher percentage at about from 60-70% [7,9,10].

**4.2.3. Size of polyps**

The group of polyps with size  $< 10$  mm accounted for a high proportion and there was a statistically significant difference in the ratio between the degree of dysplasia and the polyp size group ( $p < 0.05$ ). Most of the polyps with severe dysplasia were  $\geq 10$  mm in size. Therefore, the size of the polyp has an effect on the degree of dysplasia and the possibility of cancerous polyps.

**4.2.4. Stalk characteristics of polyps**

As drawn from the study, in each location, sessile polyps accounted for a higher percentage than pedunculated polyps (78% and 22%). Author Nguyen Duy Thang (2013) published a study with the rate of pedunculated polyps (70.3%), semi-pedunculated (18.3%), sessile polyps (11.4%) [11].

**4.3. Histopathological characteristics of polyps and the relationship between histopathology and some clinical and endoscopic features**

Among 67 patients with colorectal polyps, 48 patients only had indication of polypectomy and histopathology

**4.3.1. Histopathological classification**

The group of adenomatous polyps accounted for the highest percentage (60.4%), hyperplastic polyps (35.4%), malignant polyps (4.2%). Author Nguyen Van Kien (2016), the rate of adenomatous polyps (76.7%), hyperplasia (3.3%), inflammatory polyps (20%) [7]. Mahsa Ahadi et al (2016) found the rate of adenomatous polyps (57.7%), hyperplasia (11%), malignancy (1.2%) [10].

**4.3.3. Characteristics of the degree of dysplasia**

Out of 48 patients underwent polypectomy and

histopathology: dysplasia (64.6%) with the rate of mild (56.3%) and severe (8.3%). Research results of author Nguyen Van Kien (2016) have dysplasia 38.3%, of which 78.3% mild dysplasia and 21.7% severe dysplasia [7].

#### **4.3.4. The relationship between histopathology, degree of dysplasia with polyp size**

There were statistically significant difference between the degree of dysplasia and the polyp size group ( $p < 0.05$ ). The larger the polyp in diameter, the greater the degree of dysplasia.

#### **4.3.5. The relationship between histopathology and the degree of dysplasia**

100% of adenomatous polyps had dysplasia, of which 93.1% had mild dysplasia, 6.9% had severe dysplasia. The rate of dysplasia in the group of adenomatous polyps in the study of the author Vo Hong Minh Cong (2015) was 98.2%, of author Nguyen Van Kien (2016) was 50% [7,12]. In summary, adenomatous polyps had a high rate of dysplasia, which should be followed up after resection in order to detect and prevent progression to cancer.

## **5. CONCLUSION**

### **5.1. Clinical and endoscopic features of colorectal polyps**

#### **5.1.1. Clinical features**

The mean age was  $55.8 \pm 15.7$  years, the most common age group was  $\geq 45$ . The male/female

ratio was 2/1. The onset time of symptoms was 6 months to less than 1 year (37.4%). Common clinical symptoms are abdominal pain (83.6%), diarrhea (29.9%), constipation (28.4%), bloody stools (31.3%).

#### **5.1.2. Endoscopic features of colorectal polyps**

The most common location was the rectum (47.8%) more, in the left colon than in the right colon. The proportion of patients having  $\geq 2$  polyps is 59.7%, and 1 polyp is 40.3%. The polyp size was mainly  $5 - < 10$  mm (50.7%). The rate of sessile polyps was more than pedunculated polyps at each location.

### **5.2. Histopathological characteristics and the relationship between histopathology with some clinical and endoscopic features of colorectal polyps.**

#### **5.2.1. Histopathological features**

Adenomatous polyps (60.4%), hyperplastic polyps (35.4%), malignant polyps (4.2%). Polyps with dysplasia (64.6%): mild dysplasia (56.3%), severe dysplasia (8.3%).

#### **5.2.2. The relationship between histopathology with some clinical and endoscopic features of colorectal polyps**

There are statistically significant differences between the degree of dysplasia and the polyp size ( $p < 0.05$ ); between histopathological and degree of dysplasia ( $p < 0.05$ ). The rate of adenomatous polyps with dysplasia was 100%.

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