

## Study of Histo-morphological Patterns of Colonic Polyps

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### Abstract :

**Background:**Colorectal carcinoma is the third most common cancer worldwide and the fourth most common cause of death.Among the key risk factors colonic adenoma is a factor closely linked to the development of colon cancer. Development of colorectal adenocarcinoma principally occurs via adenoma- carcinoma sequence of a multiple step process of tumor progression. This results from accumulation of genetic changes in the cells of intestinal mucosa. **Objectives:**To detect histomorphological subtypes of colonic polyps.**Methods:**This is a cross-sectional observational study conducted in the Department of Pathology, Dhaka Medical College, Dhaka from March 2017 to January 2019 with 54 colonic polyp patients attending in Dhaka Medical College Hospital, Dhaka. All obtained samples are processed and selected for routine histopathological study . Pertinent demographic data including patient's age and diagnosis were collected from pathology requisition forms. Statistical analysis was carried out as required. **Result:**In this study, 29.6% hyperplastic polyps that was the most common type of colonic polyps and 22.5% adenomatous polyps. Most of them were male predominance and mean age was 34.03±19.85. Rectum was the most common site of colonic polyps about 48.1%. **Conclusion:** Colonic adenoma is a factor closely linked to the development of colon cancer. Thus, the management of adenomas has an important role in the prevention of colorectal cancer.

**Keywords:** Colonic polyp, colorectal carcinoma,histopathological study.

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### Introduction

Colorectal cancer is a major cause of morbidity and mortality throughout the world. It accounts for over 9% of all cancer incidence. It is the third most common cancer worldwide and the fourth most common cause of death.<sup>1</sup> Among the key risk factors colonic adenoma is a factor closely linked to the development of colon cancer. Thus, the management of adenomas has an important role in the prevention of colorectal cancer.<sup>2</sup>

Polyp is a grossly visible protrusion from a mucosal surface.<sup>3</sup> Polyps are most common in colorectal region but may occur in esophagus, stomach, small intestine etc.<sup>4</sup> Polyp may develop as a result of epithelial or stromal cell hyperplasia, inflammation, ectopia or neoplasia.<sup>5</sup> Colonic polyps can be classified as non-neoplastic and neoplastic polyp.

The non-neoplastic polyps are classified as inflammatory, hamartomatous and hyperplastic polyp. The neoplastic polyps are adenomatous polyp.<sup>5</sup> Hyperplastic and adenomatous polyps are by far the most common polyp.<sup>6</sup>

Tubular adenomas account for more than 80 percent of colonic adenomas which are less likely to become malignant. Villous and tubulovillous adenomas account for 5 to 15 percent of adenomas. Their malignant potentiality is about 15-25% when their size is more than 2cm. <sup>6</sup>

It has been estimated that 15% of all adenomas measuring >1 cm will progress to carcinomas within 10 years of their detection and overall chance of developing carcinoma in a polyp is estimated at 5%.<sup>7</sup> The appearance of adenomas and their progression to adenocarcinomas is the result of an accumulation of genetic changes in cells of the intestinal mucosa that have been inherited or acquired during life <sup>2</sup>. So, characteristics histological features of colonic polyps could be valuable parameters for selecting patients seemed to be most deserving of close surveillance in follow-up cancer prevention programs from the total adenoma population. <sup>8</sup>

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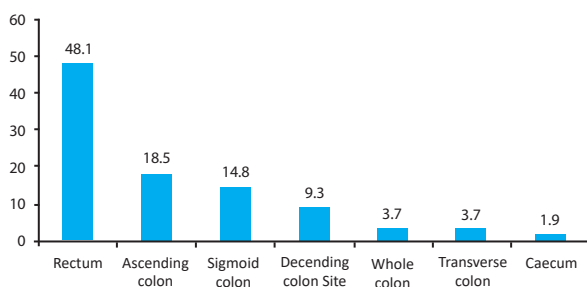
## Materials and Methods

This study was conducted in Department of Pathology, Dhaka Medical College during the period from March 2017 to February 2019. After approval from the institutional ethics committee, 54 patients were successively assigned in this study who had colonic polyps of any age group patients. Patients with current or previous history of colorectal neoplasm were excluded from the study. All obtained samples are processed and selected for routine histopathological study. After obtaining informed written consent from the patients, a descriptive cross-sectional study was carried out to detect histomorphological subtypes of colonic polyps.

The collection data were cleaned, edited and analyzed by using computer based SPSS (Statistical Package for Social Science) software Version 19.0 for windows. Data was classified into group, frequency observed and descriptive status (mean, median, mode, standard deviation) was calculated.

## Results

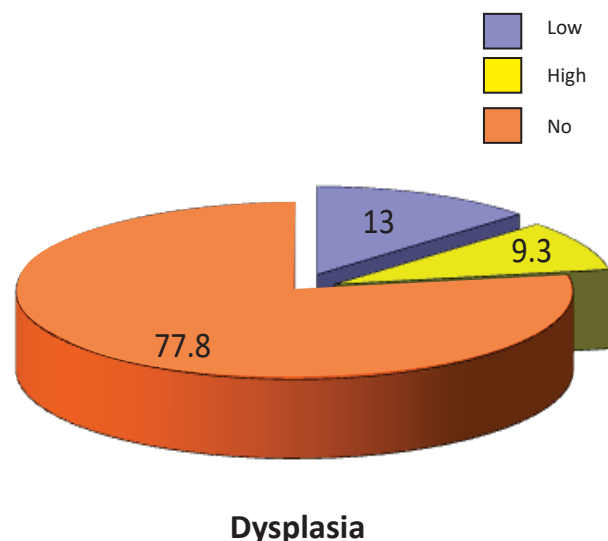
This cross-sectional descriptive study included 54 patients who had colonic polyps. Total 63 cases should be included according to sample size but 9 cases could not be included due to time limitation. Finally 54 sample was enrolled in the study. These colonic polyps obtained by colonoscopically and surgically resected. Histopathological examination with hematoxylin & eosin stain. The results are as follows:



**Figure 1: Site distribution of colonic polyps. (n=54)**

**Table-I: Distribution of the study patients according to age group and sex.(n=54)**

Demographic parameters	Number of patients	Percentage
Age (years)		
< 20	15	28
20-30	9	16.9
31-40	8	14.9
41-50	12	22.2
51-60	7	13.1
> 60	3	5.7
Mean $\pm$ SD	34.03 $\pm$ 19.85	
Range (min-max)	3-75	
Sex		
Male	32	59.3
Female	22	40.7



**Figure 2: Dysplasia of colonic polyps . (n=54)**

## Discussion

The concept that colorectal cancers may arise from pre-existing adenomas is now widely accepted, based on epidemiological, clinical, postmortem, and molecular biological studies.<sup>9</sup> In this study the mean age of the patients was  $34.03 \pm 19.85$  with age ranges from 3-75 years. The highest number of cases were in the second decades (28%). But different findings were stated in the study by 10Suheil. and Mahdi., 2015 in which most age group affect by colonic polyps include age group of 36-50 that have high percent-age.

More than half 32(59.3%) of the patients were male and 22(40.7%) patients were female. This indicates male predominance of colonic polyps. A Study by<sup>8</sup> Nussrat et al., 2011 also showed gender distribution of colorectal adenoma cases were male predominance 28 (60%) compared with female 19 (40%).

Regarding the site distribution of this study patients, it was observed that about 48.1% polyps were in rectum which was disagreed with previous study by<sup>2</sup> Sousa et al., 2012 and Nussrat et al., 2011. They showed that the distal site of the colon was the predominant with 53.2%, 34% in the proximal site and 17% in the rectum.

Of all the 54 cases of colonic polyps in our study showed six different types of colonic polyps includes: hyperplastic polyps: 29.6%, juvenile polyps : 25.9%, adenomatous polyps: 22.5% and inflammatory polyps: 16.7%, mesenchymal polyps: 3.8% and peutz jeghurs polyps: 1.9%. In our study the commonest (29.6%) polyp was hyperplastic polyps. Another study of 50 colonic polyps performed by<sup>10</sup> Suheil. and Mahdi., 2015 showing four different types of polyps includes: adenomatous polyps 32%, inflammatory polyps 30% , hyperplastic polyps 20% and juvenile polyps 18%.

In this study, about 77.8% patients were without dysplasia; 13.0% patients were low grade dyspla-

sia and 9.3% patients were high grade dysplasia. There were 57% cases with low grade dysplasia, and 43% cases with high grade dysplasia in a study by<sup>8</sup> Nussrat et al., 2011 which was similar to our study according to frequency of low grade dysplasia.

From this study it can be stated that colonic polyps were male predominance with average mean age presentation was  $34.03 \pm 19.85$  and age range 3-75 years. According site distribution 48.1% colonic polyps were in rectum. Most common type polyps were hyperplastic polyps (29.6%) and most were pedunculated (50%).

## Conclusion

Colorectal cancer is the third most common cancer worldwide in both sexes. Colonic adenoma is a factor closely linked to the development of colorectal carcinoma. In this study 29.6% hyperplastic polyps that was the most common type of colonic polyps. Most of them were male predominance and mean age was  $34.03 \pm 19.85$ . Rectum was the most common site of colonic polyps about 48.1%. This study also showed that 22.5% are adenomatous polyps and among them 9.3% patients were high grade dysplasia.

The concept that colorectal cancers may arise from pre-existing adenomas is now widely accepted. Finally expression of biological markers may be added to the future histopathological evaluation and play a role in planning the follow up of patients with colonic polyp.

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