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# Clinicopathological Profile of Colorectal polyps: a Retrospective Study at a Tertiary Care Centre in South India

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#### ABSTRACT

**Background:** A gastrointestinal polyp is a discrete mass of tissue that protrudes into the lumen of the bowel wall. It is postulated that certain varieties of colonic polyps turn malignant over a period of time. Hence colonoscopic surveillance and polypectomies are crucial for screening and to reduce incidence of colonic malignancies. Data regarding the prevalence and distribution of colonic polyps among Indians is limited.

Aims and objectives: Our aim of the study was to identify the prevalence, clinical manifestations, type of colonic polyps and its association with the degree of dysplasia in a cohort of patients presenting to a tertiary referral care centre in Mysuru, South India.

**Materials and methods:** We retrospectively analysed data of patients diagnosed to have polyps who had undergone colonoscopy between January 2016 to December 2019 in our hospital .We analysed the association between age, sex, location of polyps, clinical manifestation, histopathological types and correlated size of polyps with degree of dysplasia.

**Results:** Among the 2595 complete colonoscopies 140 (5.39%) patients were found to have colonic polyps. Mean age of the study population was 53.97 years and majority were men (69.2%). Colonic polyps were most commonly seen at recto-sigmoid (82%) region. 48.69% polyps were located in rectum and 34.78% were seen in sigmoid colon. Most common clinical manifestation was altered bowel habits (34%). Commonest histopathological type was Adenomatous polyps in 64 (45.7%) followed by inflammatory in 41 (29.2%), hyperplastic in 23 (16.4%), juvenile in 10 (7.14%), hamartomatous and Peutz-Jeghers polyp in 1 each (0.71%).

83% of Polyps with size (>2cms) and 57.1% of polyps with villous histology were associated with severe dysplasia.

**Conclusion**: Majority of polyps were seen among patients above 50 years of age. Most common site of polyp was rectum and sigmoid colon. Most common symptom among patients with colonic polyp was altered bowel habits. Adenomatous polyps were the predominant histological type. Among the adenomatous polyps, larger polyps (>2cm) were more commonly associated with severe dysplasia. Polyps with Villous Histopathological variant were associated with severe dysplasia.

#### Keywords: Polyp , Dysplasia , Adenomatous Polyp INTRODUCTION

A gastrointestinal Polyp is a discrete mass of tissue that protrudes into the lumen of the bowel wall. Polyps are usually asymptomatic but may ulcerate and bleed, cause abdominal pain. Large Polyps may produce intussusceptions or intestinal obstruction.

It is postulated that certain varieties of colonic polyps turn malignant over a period of time. The most common precursor of colorectal cancer is adenoma.<sup>1</sup>The biggest concern is their ability to progress into carcinoma, through the adenomacarcinoma sequence.<sup>2-4</sup> According to GLOBOCAN 2018 data, cancer of the colon is the fourth most incident cancer in the world, while cancer of the rectum is the eighth most incident. Together, CRCs are the third most commonly diagnosed form of cancer globally, comprising 11% of all cancer diagnoses.<sup>5,6</sup>

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The prevalence of colonic polyps in India varies between 5.1-12.7%<sup>7,8</sup>. About 80%

of colonic polyps are adenomatous type<sup>14</sup>. The age standardized rate (ASR) for CRC in India is 7.2 per 100,000 population in males and 5.1 per 100,000 population in women.<sup>9</sup>

Since 2000, there have been steady decreases in overall CRC incidence and mortality, much of which can be attributed to screening efforts aimed at the early detection and removal of adenomas. However, there remain significant disparities by age and race, as well as a recent increase in polyp and CRC incidence specifically among people younger than 50years. A better understanding of the biology and changing epidemiology of adenomas, as well as the optimal implementation of screening and surveillance strategies, will be critical to further reduce the mortality associated with these premalignant lesions.

The detection and removal of adenomatous polyps significantly decrease the morbidity and mortality associated with colorectal cancer. The location of adenomatous polyps has important implications for screening programs. A screening programme that only examines the left side of the colon may miss proximal, right sided neoplasms. Hence colonoscopic surveillance and polypectomies are crucial for screening and to reduce incidence of colonic malignancies.

In this retrospective study we analysed clinical features, location, pattern of distribution, histopathological types of polyps and its association with severity of dysplasia.

### Materials and methods

This was a cross-sectional, retrospective study done in Department of medical gastroenterology at JSS Hospital, Mysuru, India. Records of patients who underwent full length colonoscopy between January 2016 to December 2019 were analysed. The colonoscopy was performed by a consultant medical gastroenterologist or by a trainee under the direct supervision of a consultant.

Colonoscopy was carried out after standard bowel preparation by using Olympus Colonoscope.

Among the 2595 colonoscopies done during the four year period, 140 were found to have colonic polyps. Age, gender, indication for colonoscopy, location,

number, size and histological features of polyp were recorded. Retrieved data was analysed for significant association between age of patient, size of adenomatous polyps, degree of dysplasia and severity of dysplasia among different types of adenomatous polyps.

### Results

A total of 2595 colonoscopies were performed between January 2016 to December 2019. Among them 140 (5.39%) patients were found to have colonic polyps. Mean age of patients with colonic polyps was 53.97 years.109 patients (77.8%) were above 50 years. 97 (69.2%) were males.

Indication for colonoscopy (Table 1) was altered bowel habits in 48 (34%), Bleed PR in 39 (27%), pain abdomen in 32 (25%) and anaemia in 18 (12%).

115 (82.14%) cases had polyps localised to left side of colon. Most common site of polyp was rectum and sigmoid colon. 56 polyps(40%) were in rectum, 40 polyps(28.5%) in sigmoid colon,19 polyps(13.5%) in descending colon,16 polyps (11.4%) in transverse colon, 6 polyps (4.2%) in ascending colon, 4 polyps (2.5%) were in Caecum and 1 polyp (0.7%) in Ileocaecal valve (Table 2).

Most common histopathological variant of polyp was Adenomatous (Table 3). 64 (45.7 %) Adenomatous, 41 (29%) inflammatory, 23 (16%) hyperplastic, 10 (7%) juvenile, 1 was hamartomatous and 1 was Peutz Jeghers polyp.

Among the 64 Adenomatous polyps, 40 (62.5%) were <1 centimetres (cms), 18 (28.12%) were 1-2 cms, 6 (9.3%) were >2 cms (Table-4). Among the Adenomatous polyps 42 (65%) were Tubular, 15 (23.4%) Tubulovillous and 7 (10.9%) Villous (Table-5)

## Discussion

In this study the mean age of cases with colonic polyps was 53.97 years. This is similar to study done by Tony J et al<sup>1</sup> in which mean age was 58.1 years and another study done by Jain m et al<sup>2</sup> in which the mean age was 61.1 years. In contrast, studies done by Amarapukar<sup>10</sup> and Kumar et al<sup>11</sup> showed polyps in relatively younger patients.

In our study 82.14% of polyps were located in left colon. Similar findings were described by Tony J et al<sup>1</sup> and other western studies<sup>12.</sup>Age, sex and location

of polyp was not related to degree of dysplasia in our study. Similar findings were noted by Tony J et al<sup>1.</sup>

Histology, size and morphology of polyps are known to be related to degree of dysplasia.<sup>13</sup>In our study adenomatous polyp was the most common variant and majority was located at the recto-sigmoid junction. Our study highlights that there is a significant increase in degree of dysplasia of colonic polyps with increasing polyp size. It also highlights the fact that, villous histopathological variant of adenomatous polyp is associated with severe degree of dysplasia. This observation will have an impact on management of colonic polyps. Age of the patient and location of the polyp have no association with degree of dysplasia.

Present study showed that 5.39% of patients undergoing colonoscopy at our centre had colonic polyps. This finding is similar to a study done by Tony et al<sup>1</sup> who found colonic polyps amongst 5.1%of all cases undergoing colonoscopy, however another study from Tamilnadu by Jain m et al <sup>2</sup> found colonic polyps among 12.7% and Rahul et al <sup>3</sup> found colonic polyps among 10.6% of all cases undergoing colonoscopy.

In our study population which was predominantly adults a majority of the polyps were adenomatous (45.71%). Among the adenomatous polyps Tubular adenoma (65.6%) was the predominant subtype. These results are in concordance with other south Indian studies<sup>7.</sup> In comparison hyperplastic polyps is the most common in Thailand.<sup>16</sup>

Data from western countries also reveal that the most common polyp was adenomatous and tubular adenoma was the most common histological subtype.<sup>14</sup> However a study done in Srilanka by Wickramasinghe et al<sup>15</sup> found Tubulovillous adenoma to be the most common histological subtype thus suggesting variations in polyp profile.

Our study showed that larger adenomas had more chances of severe dysplasia. 83% of polyps >2 cm had severe dysplasia. Study done by Tony J et al <sup>1</sup> also showed 76% of polyps > 2cm had severe dysplasia. Among the adenomatous polyps majority of Tubular adenomas (66.6%) had no dysplasia. Severe dysplasia was found in 57.1% of polyps with villous adenomas. This finding was similar to study by Tony et al<sup>1</sup> in which 52% of tubular adenomas had no dysplasia and severe dysplasia was observed in 43% of polyps with villous pattern. Amarapurkar et  $al^{10}$  also had shown similar finding of increasing severity of dysplasia with presence of villous component.

## CONCLUSION

Colonic polyps were found in around 5 % of all colonoscopies. Majority of polyps were seen among patients above 50 years of age. Most common site of polyp was rectum and sigmoid colon. Most common symptom among patients with colonic polyp was altered bowel habits. Adenomatous polyps were the predominant histological type similar to the west. Among the adenomatous polyps larger polyps (>2cm) were more commonly associated with severe dysplasia. Polyps with Villous Histopathological variant were associated with severe dysplasia.

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#### Table 1 - Indications for colonoscopy

INDICATION	PERCENTAGE
Altered Bowel habits	48 (34%)
Bleed PR	39 (27%)
Pain abdomen	32 (25%)
Anaemia	18 (12%)
Others	3 (2.1%)

#### **Table 2 – Location of Polyp**

Location of Polyp	Percentage
Rectum	56 (40%)
Sigmoid colon	40 (28.5%)
Descending colon	19 (13.5%)
Transverse colon	16 (11.4%)
Ascending colon	6 (4.2%)
Caecum	4 (2.5%)
Ileo-Caecal valve	1 (0.7%)

#### Table 3 – Histopathological variants of polyps

Histopathological type	Percentage
Adenomatous	64 (45.7%)
Inflammatory	41 (29.2%)
Hyperplastic	23 (16.4%)
Juvenile	10 (7.14%)
Hamartomatous	1 (0.7%)
Peutz-jeghers	1 (0.7%)

Table 4 – Size of Adenomatous polyp and itsrelation to degree of dysplasia

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Polyp size	Nil	Mild	Severe	Histopathological type	Nil	Mild	Severe
< 1 cm	32 (80%)	7 (17.5%)	1 (2.5%)	Tubular (42)	28 (66.6%)	12 (28.5%)	2 (4.7%)
1-2 cm	5 (27.7%)	10 (55.5%)	3 (16.6%)	Tubulovillous (15)	8 (53.3%)	3 (20.0%)	4 (26.6%)
> 2 cm	-	1 (16.6%)	5 (83.3%)	Villous (7)	1 (14.28%)	2 (28.5%)	4 (57.14%)

Table 5 – Type of Adenomatous polyp and itsrelation to degree of dysplasia

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