STUDY OF GASTROINTESTINAL ENDOSCOPIC POLYPECTOMY SPECIMENS IN RIMS HOSPITAL

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ABSTRACT

BACKGROUND

Gastrointestinal polyps are frequently encountered during routine endoscopy and colonoscopy. These are considered as luminal projections above the plane of the adjacent mucosa. These can be non-neoplastic, neoplastic or hamartomatous and syndromic. The classification of polyps has important clinical implications and provides targeted clues towards discovering abnormalities in the remaining mucosa or even elsewhere in the body in syndromic cases. Histopathological typing was done with an aim to assess their benign or malignant potential.

MATERIALS AND METHODS

All the endoscopic polypectomy specimens received during the period February 2013 to January 2018 were taken up for the study. The study was carried out in the Department of Pathology, in collaboration with the Department of Surgery, RIMS, Imphal. Specimens were kept in 10% formalin overnight and grossing was done on the next day. The tissues were then processed, paraffin blocks made, and sections were stained with conventional H & E stain. Slides were examined in detail and histological findings noted and typing done.

RESULTS

Of the 110 cases, maximum number were of the age group 41-60 years. All paediatric polyps were benign. Most common site for polyp was the colon in adults and the rectum in children. Colonic polyps were more incident in patients ≥50 years of age. Hyperplastic polyp was the most common benign polyp which frequented most in the colon. Adenomatous polyp consisted of a vast majority of premalignant polyps, mostly occurring in the colon. Most adenomatous polyps were of tubular architecture and the majority displayed low grade dysplasia.

CONCLUSION

GI polyps were most commonly found in the colon, its incidence in the colon increasing with age. All adenomatous polyps have certain risk for development of malignancy and were also the most common type of premalignant polyps found. Colonoscopic screening for early detection and histopathological typing for risk stratification are of utmost importance for cancer prevention.

KEYWORDS

Gastrointestinal endoscopic polypectomy, Hyperplastic polyp, Adenomatous polyp, Colonoscopic screening.

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BACKGROUND

Gastrointestinal (GI) polyps are circumscribed proliferative or neoplastic mucosal lesions projecting into the lumina. They are usually found incidentally on endoscopy or colonoscopy performed for an unrelated indication and only in rare cases do they cause symptoms. Colonic polyps are of concern because of their potential for development of colorectal cancer and determination of this risk is important for treatment approach.[1,2] Histopathological type is one of the most important factors for cancer development. The aim of this article is to document the most commonly encountered polyps in routine practice and to describe their histopathologic types.

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MATERIALS AND METHODS

Our study is a hospital based cross-sectional one, carried out in the Department of Pathology, in collaboration with the Department of Surgery, RIMS, Imphal, for a period of five years (February 2013 to January 2018). Approval from the Institutional Ethics Committee (IEC), RIMS, was taken prior to the study.

All cases of GI endoscopic biopsies sent as polyps were included. Cases other than GI, endoscopic biopsies or polyps were excluded. A total of 110 cases were hence inducted into our study.

Specimens were kept in 10% formalin overnight and grossing was done on the next day. The tissues were then processed in our Leica automated tissue processor. Paraffin blocks were made, sections obtained and were stained with conventional H & E stain. Slides were examined in detail and histological findings noted. Data was collected and analysed.

RESULTS

The 110 cases consisted of 59 (54%) males and 51 (46%) females. Age of the patients ranges from 3 to 85 years (mean = 49.05 years). Maximum number of cases (60, 54.5%) were of the age group 41-60 years followed by the group of 61-80 years (21, 19.1%) (Figure 1). All polyps found in the paediatric age group were benign (7, 100%), whereas all the premalignant polyps were found in adults (15, 14.6%).

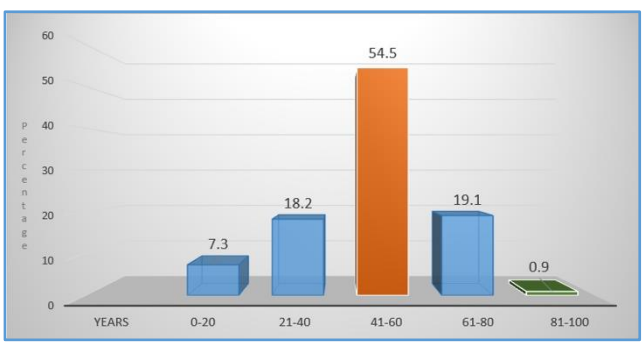

Figure 1. Distribution of Polyps in the Various Age Groups

Majority of the benign polyps (41, 53.9%) were found in the age group of 41-60 years followed by the group 21-40 years (17, 22.4%). Similarly, maximum number of pre-malignant polyps (19, 55.9%) occurred in the age group of 41-60 years but here followed by the group 61-80 years (12, 35.3%) (Figure 2).

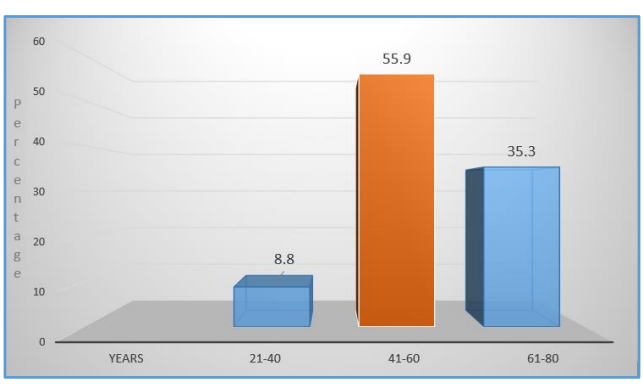

Figure 2. Distribution of Pre-malignant Polyps in the Various Age Groups

The most common site for polyps was the colon (49.1%), which was followed by rectum (24.5%) and stomach (19.1%). The colon harboured 46.1% of benign and 55.9% of premalignant polyps (Figure 3). In the paediatric age group, rectum (4, 57.1%) was found to be the most common site for polyps, colon (2, 28.6%) constituting only a minor proportion.

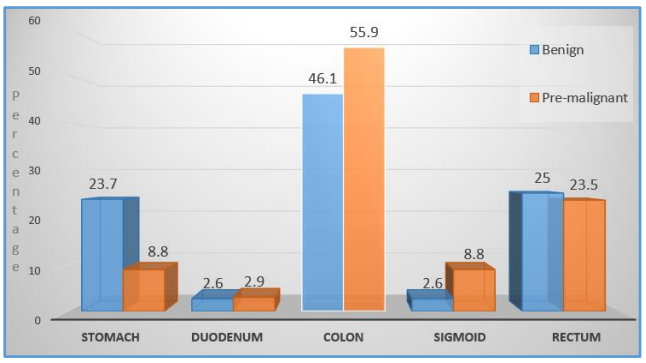

Figure 3. Distribution of Benign and Premalignant Polyps in the GI Tract

Colonic polyps were atleast 1.7 times more prevalent in the age group of ≥50 years (63.0%) as compared to the age group of <50 years (37.0%) (Figure 4).

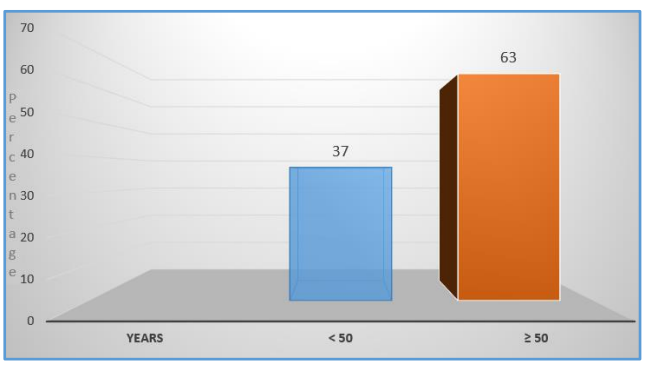

Figure 4. Prevalence of Colonic Polyps in the Age Groups <50 and ≥50 Years

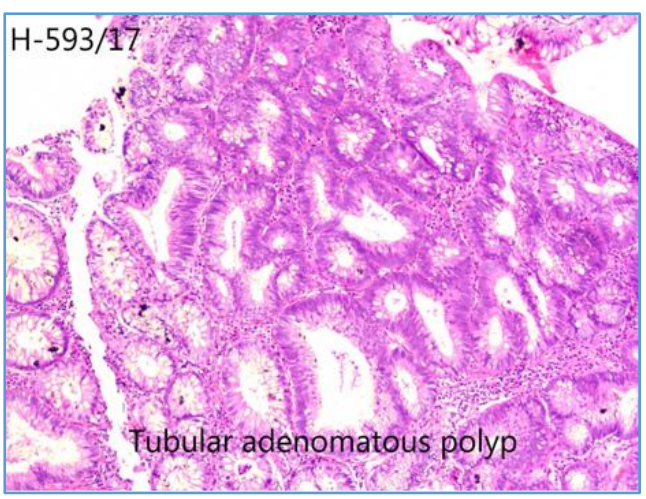

Figure 5. Tubular Adenoma with High Grade Dysplasia (H & E, 40x)

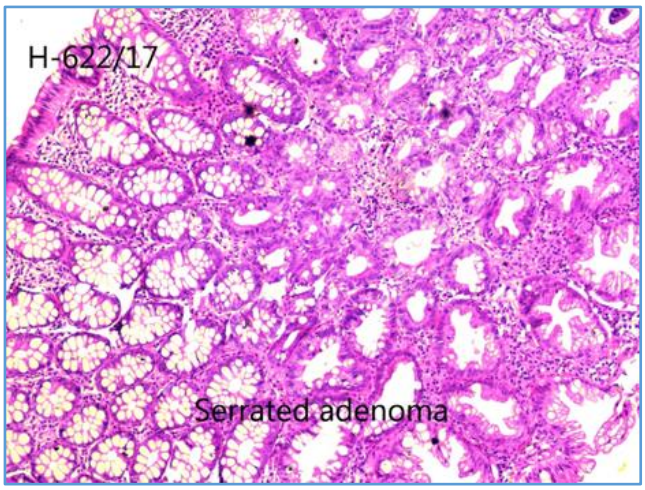

Figure 6. Serrated Adenoma (Traditional) with High Grade Dysplasia (H & E, 40x)

Among the benign polyps, hyperplastic polyp is the most common type (36, 47.4%) followed by inflammatory (20, 26.3%) and retention polyps (10, 13.2%), their individual most common sites being the colon (61.1%), colon/ rectum (40%) and rectum (50%) respectively (Table 1).

A vast majority of the premalignant polyps comprises adenomatous polyps (32, 94.1%), the remaining being serrated adenomas (2, 5.9%). Both of them were mostly found in the colon (53.1 and 100% respectively) (Table 2).

Maximum number of adenomatous polyps displayed just low grade dysplasia (19, 59.4%).

The commonest architectural pattern of adenomatous polyp was tubular architecture (22, 68.8%) followed by tubulo-villous (9, 28.1%) and villous (1, 3.1%) types (Table 3).

Diagnosis	Stomach	Duodenum	Colon	Sigmoid	Rectum	Total
Hyperplastic polyp	8 (22.2)	0 (0.0)	22 (61.1)	1 (2.8)	5 (13.9)	36 (100.0)
Inflammatory polyp	2 (10.0)	2 (10.0)	8 (40.0)	0 (0.0)	8 (40.0)	20 (100.0)
Retention polyp	1 (10.0)	0 (0.0)	3 (30.0)	1 (10.0)	5 (50.0)	10 (100.0)
Fundic gland polyp	5 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	5 (100)
Brunner's gland nodule	1 (100)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100)
Leiomyomatous polyp	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	1 (100)
Lymphangiomatous polyp	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)	1 (100.0)
Pancreatic heterotopia	1 (100.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	1 (100.0)
Vascular hamartomatous polyp	0 (0.0)	0 (0.0)	1 (100.0)	0 (0.0)	0 (0.0)	1 (100.0)
Total	**18 (23.7)**	**2 (2.6)**	**35 (46.1)**	**2 (2.6)**	**19 (25.0)**	**76 (100.0)**

Table 1. Distribution of the Benign Polyps in the GI Tract

Diagnosis	Stomach	Duodenum	Colon	Sigmoid	Rectum	Total
Adenomatous Polyp	3 (9.4)	1 (3.1)	17 (53.1)	3 (9.4)	8 (25.0)	32 (100)
Serrated Adenoma	0 (0.0)	0 (0.0)	2 (100.0)	0 (0.0)	0 (0.0)	2 (100.0)
Total	**21 (19.1)**	**3 (2.7)**	**54 (49.1)**	**5 (4.5)**	**27 (24.5)**	**34 (100.0)**

Table 2. Distribution of the Pre-malignant Polyps in the GI Tract

Architectural Types	No. of Cases (%)
Tubular	22 (68.8)
Tubulo-villous	9 (28.1)
Villous	1 (3.1)
Total	**32 (100.0)**

Table 3. Architectural Types of Adenomatous Polyps and their Frequency

DISCUSSION

Hyperplastic polyps develop due to an exaggerated mucosal response to injury and inflammation. They are known to be associated with H. pylori in polyps of the stomach. They are characterized histologically by architecturally distorted, irregular, cystically dilated and elongated foveolar epithelium. Our finding of hyperplastic polyp being the commonest benign polyp type followed by inflammatory polyp (Table 1) is similar to that of a study by Gentiana et al[1] where they found hyperplastic (16.78%) followed by inflammatory polyp (6.08%) to be the most common benign polyps. Gencosmanoglu et al[2] and Jain et al[3] also had similar findings.

Our finding of the most common occurrence of premalignant polyps in the age group 41-60 years and not in the older age group of 61-80 years (Figure 2) may be due to our small sample size or may be with advancing age many of them have evolved into invasive adenocarcinomas.

In our study we found the rectum (4, 57.1%) to be the commonest site for polyps in paediatric population. This is not in agreement with that of a study by Sharifi et al,[4] where they found the colon to be commonest site. This discrepancy may be due to our small sample size where children were represented by just 7 cases.

In this study the colon is the most common site for polyps (Figure 3). Adenomatous polyp is the commonest type of premalignant polyp (Table 2) and the second most common overall. This finding is consistent with those of Khodadoostan et al[5] and Mirzaie et al[6] where they also found

most polyps to be colonic (91%) and the most common type to be adenomatous polyp (85%).

In our study most of the adenomatous polyps had low grade dysplasia (59.4%) (Table 3). This is similar with that of the study by Mirzaie et al[6] where they found low grade dysplasia to be present in 91.4% of adenomatous polyps.

Our finding of colonic polyps to be 1.7 times more incident in the age group of ≥50 years (63.0%) (Figure 4) is comparable with that of a study by Nam et al[7] where they found its incidence to be 3.2-fold greater in ≥50-year-old patients as compared those < 50-year-old. Here we reiterate that this is one of the important reasons why colonoscopy as a screening tool is started at 50 years of age in the general population.[8-12]

CONCLUSION

GI polyps were most commonly found in the colon, its incidence in the colon increasing with age. Benign polyps mostly consisted of hyperplastic polyps. All adenomatous polyps have certain risk for development of malignancy and were also the most common type of premalignant polyps found. Colonoscopic screening for early detection and histopathological typing for risk stratification are of utmost importance for cancer prevention.

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