

Colorectal Polyp's Description and Classification during Colonoscopy- a Quality Improvement Audit

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Introduction

Bowel cancer (a general term for cancer that begins in the large bowel, and medically known as colorectal cancer) is the 4th most common type of cancer in the UK [1]. There are more than 40,000 new cases of bowel cancer each year, of which around 54% are preventable cases. Bowel cancer is the 2nd most common cause of cancer death in the UK, with greater than 15000 bowel cancer deaths in the UK every year. Like most cancers, prognosis is strictly dependent on early detection and treatment of premalignant and malignant lesions. Majority of bowel cancer arise from neoplastic polyps. The English Bowel Cancer Screening Programme requires all polyps to be classified by an endoscopist using the Paris system- size, site and polyp morphology, as they influence assessment of malignancy in a lesion [2]. The Paris classification is both descriptive and predictive. PARIS Classification: This system allows classification for comparative and descriptive purposes and further allows prediction of polyp histology and direct appropriate therapy [3].

1. Polypoid type consists of pedunculated (type 0-Ip) & sessile (0-Is) morphologies.
2. Non-polypoid or flat types consist of flat or slightly elevated (type 0-IIA), completely flat (0-IIB) & slightly depressed but not ulcerated (0-IIC) morphologies.
3. Truly excavated or ulcerated superficial lesions (type 0-III) are never seen in the colon.

PIT Pattern Classification (Table 1)

The ACPGBI (Association of Coloproctologists of Great Britain and Ireland) recommends that endoscopists should estimate size of polyps and use the Paris classification to achieve the best prediction of malignancy. A previous audit done at the same hospital found a 41.38% discrepancy between the histology results & the polyps classified using PIT classification. The aim of this study was to find out the compliancy with ACPGBI recommendations by the Colorectal Department at the Ysbyty Gwynedd Hospital, Bangor [4].

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Table 1: PIT Pattern Classification.

Pit Pattern type	Characteristics
I	Roundish pits
II	Stellar papillary pits
III S	Small Roundish or tubular pits (Smaller than types 1 pits)
III L	Large Roundish or tubular pits (Large than types 1 pits)
I	branch like or gyrus like pits
II	Non structured pits

Method

This audit was done as a retrospective study, taking a total sample of 452 patients from 1st January 2022 to 31st January 2022 at Ysbyty Gwynedd Hospital, Bangor [5, 6]. The patient list was generated from an electric database of all the people who underwent colonoscopy/sigmoidoscopy during the mentioned period. The report for these 452 patients were reviewed manually and the size, site, morphology per PIT classification tabulated. The histology reports for the polyps were then checked and

tabulated, to find out the mismatch between the endoscopist classifications with the histology report [7].

Result

A total of 452 patients underwent colonoscopy or flexible sigmoidoscopy during the study period. 113 patients were found to have polyp(s) in their colon. 99 patients had polyps detected on colonoscopy and rest 14 during flexible sigmoidoscopy. The total number of polyps detected was 294 [8]. Out of them, 224 were resected and 70 were not resected. 157 polyps were described with compliance to the guideline (morphology, PIT, and size all 3 described), the rest 137 were Non-compliant (all 3 not described) [9].

Size of Polyps

The number of polyps with polyp size measured was 281, and 13 did not have their size measured. Majority of Polyps were 1 to 5 mm in size- 140 polyps (49.8%), while the second most common were in the range 6 to10mm -40 polyps (14.2%) [10, 11]. the size of polyps with their percentage is shown in the (Table 2) below.

Site of Polyps

The site of polyp within the colon is also a risk factor where proximal colonic polyps are, size for size, at greater risk of containing malignancy [12]. The malignant risk for adenomas in the right colon (Proximal to the splenic flexure) was higher than that for similar-size left-sided or rectal polyps (Table 3) and

Table 2: Sites of Polyps.

Size	Num of Polyps		Percentage
	Resected		
1 to 5mm	140 polyps		49.80%
6 to10mm	40 polyps		14.20%
11 to15mm	13		4.60%
16 to 20mm	4		2.20%
>21mm	9 polyps		3.20%

Table 3: Sites of Polyps.

Site		Number	Percentage (approx.)
Caecum		29	10%
Ascending colon	Proximal	32	11%
	Mid	8	3%
	Distal	5	2%
Hepatic flexure		4	1%
Transverse colon	Proximal	6	2%
	Mid	12	4%
	Distal	12	4%
Splenic Flexure		8	3%
Descending colon	Proximal	11	3%
	Mid	6	2%
	Distal	14	5%
Sigmoid colon	Proximal	32	11%
	Distal	53	18%
Recto sigmoid		16	5%
Rectum		45	15%
Anal margin		2	1%

(Figure 1).

Morphology of Polyps

Recognition of pattern and therefore clinical experience are important factors when describing morphology of polyps. Malignancy is more likely when the contour is irregular, when there is ulceration or when the consistency of the polyp (when probed gently) is hard or when the stalk broadens [13, 14]. These classical signs are not always evident, and more sophisticated classifications have been developed i.e., Paris classification. (Table 4).

Histology of Polyp

Pit pattern Types I and II are non-neoplastic (normal or hyperplastic mucosa). Proximal hyperplastic polyps can belong to the serrated adenoma group and should be treated accordingly. Pit patterns IIS (small), IIII (large) and IV (gyriform) are most likely to be benign adenomas with a low risk of submucosal invasion [15-17].

Type V pit patterns indicate a high risk for invasion into at least the sub mucosa [18]. The type-V pit pattern can further be divided into Vn (with pits devoid of structure (non-structural)) and VI (where pits are irregular). This sub classification is appreciated only with magnifying chromo endoscopy. Pit pattern VI (irregular) may be on the surface of a benign lesion but submucosal invasion can also occur [19,20]. Vn has the highest likelihood of malignancy. (Table 5).

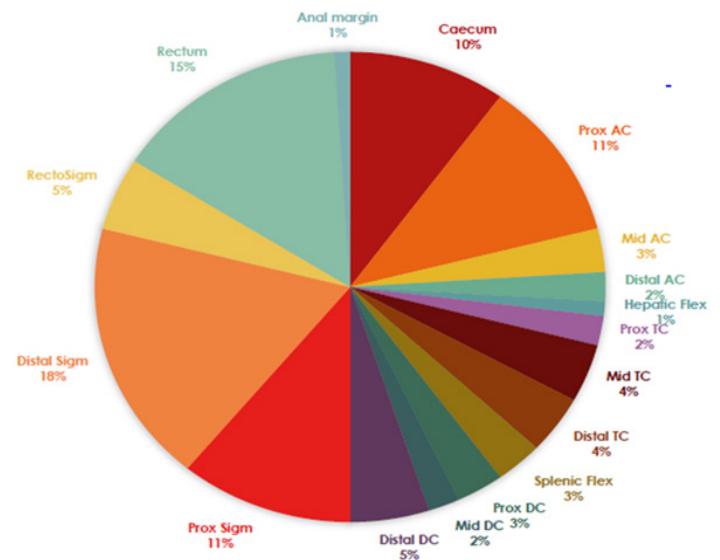


Figure 1: Proximal to the splenic flexure.

Table 4: Histology of Polyp.

Morphology	Number of Polyps	Percentage (approx.)
0-Is	129	44%
0-Isp	7	2%
0-Ip	18	6%
0-IIa	47	16%
0-IIb	0	0%
0-IIc	0	0%
0-3	0	0%
Not described	94	32%

Table 5: Discrepancy between PIT and Histology.

Histological Type	Number	Percentage (approx.)
Adenocarcinoma	2	0.68%
High grade Tubular Adenoma	1	0.34%
Low grade Tubular Adenoma	106	35.90%
Tubulo Villous	23	7.84%
Serrated Adenoma	24	8.14%
Hyperplastic	44	14.91%
Inflammatory	7	2.37%
Metaplastic	1	0.34%
Normal Mucosa	3	1.01%
Not done	84	28.47%

Discrepancy between PIT and Histology

The total number of polyps classified as per PIT classification was 219, and the total number of PIT classified polyp resected and sent for histopathology was 169. Summary:

1. Polyp classified as Type-I: 1 serrated adenoma. No Discrepancy.
2. Classified as Type-II: 1 normal mucosa, 12 hyperplastic, 8 serrated adenoma, 11 Tubular adenoma (Low grade) and 1 tubulovillous adenoma. Discrepancy of 7.10%.
3. 1 classified as 3a: 1 serrated adenoma. Discrepancy of 0.59%.

References

- 1 Kashida H, Sasako M, Shimoda T, Hisashi Watanabe S, Yoshida M, et al. (2003) The Paris endoscopic classification of superficial neoplastic lesions: oesophagus, stomach, and colon: November 30 to December 1, 2002. *Gastrointestinal Endosc* 58: 3.
- 2 <https://www.cancerresearchuk.org/health-professional/cancer-statistics/statistics-by-cancer-type/bowel-cancer#heading=Four>
- 3 Williams JG 1, Pullan RD, Horgan PG, E Salmo, Buchanan GN, et al. (2014) Management of the malignant colorectal polyp: ACPGBI position statement. *Colorectal Dis* 15: 1-38.
- 4 Hamilton SR, Aaltonen LA, editors (2000) WHO classification of tumours. Tumours of the digestive system. Lyon: IARC Press.
- 5 Dixon MF (2002) gastrointestinal epithelial neoplasia: Vienna revisited. *Gut* 51: 130.
- 6 Schlemper RJ, Hirata I, Dixon MF (2002) The macroscopic classification of early neoplasia of The digestive tract. *Endoscopy* 34: 163-168.
- 7 Rey JF, Lambert R (2001) ESGE Quality Assurance Committee. ESGE recommendations for quality control in gastrointestinal endoscopy: guidelines for image documentation in upper and lower GI endoscopy. *Endoscopy* 33: 901-903.
- 8 Sakashita M, Aoyama N, Maekawa S, Kuroda K, Shirasaka D, et al. (2000) Flat elevated and depressed, subtypes of flat early colorectal cancers should be distinguished by their pathological features. *Int J Colorectal Dis* 5: 275-281.
- 9 George SM, Makinen MJ, Jernvall P, Makela J, Karttunen TJ, et al. (2000) Classification of advanced colorectal carcinomas by tumor edge morphology: evidence for different pathogenesis and significance of polypoid and nonpolypoid tumors. *Cancer* 89: 1901-1909.
- 10 Kudo S, Hirota S, Nakajima T, Hosobe S, Kusaka H, et al. (1994) Colorectal tumours and pit pattern. *J Clin Pathol* 47: 880-885.
- 11 Kawano H, Tsuruta O, Kudo S, Rubio CA, Teixeira CR, et al. (2001) Pit pattern in colorectal neoplasia: endoscopic magnifying view. *Endoscopy* 33: 367-373.
- 12 Matsuda T, Fujii T, Ono A, Kozu T, Saito Y, et al. (2003) Effectiveness of magnifying colonoscopy in diagnosing the depth of invasion of colorectal neoplastic lesions: invasive pattern is an indication for surgical treatment [abstract]. *Gastrointest Endosc* 57: AB176.
- 13 Postic G, Lewin D, Bickerstaff C, Wallace MB (2002) Colonoscopic miss rates determined by direct comparison of colonoscopy with colon resection specimens. *Am J Gastroenterol* 97: 3182-3185.
- 14 Bond JH (2000) Polyp guideline: diagnosis, treatment, and surveillance for patients with colorectal polyps practice Parameters Committee of the American College of Gastroenterology. *Am J Gastroenterol* 95: 3053?
- 15 Chung SJ, Kim YS, Yang SY (2011) Five-year risk for advanced colorectal neoplasia after initial colonoscopy according to the baseline risk stratification: a prospective study in 2452 asymptomatic Koreans. *Gut* 60: 1537.
- 16 Nagtegaal ID, Odze RD, Klimstra D (2020) The 2019 WHO classification of tumours of the digestive system. *Histopathology* 76:182.

4. 58 classified as Type-III: 7 serrated adenoma, 14 hyperplastic, 5 inflammatory, 1 metaplastic, 27 low grade tubular adenoma, 4 tubulovillous adenoma. Discrepancy of 15.98%
5. 37 classified as Type-III: 1 normal mucosa, 4 hyperplastic, 1 inflammatory, 25 low grade tubular adenoma, 1 high grade tubular adenoma, 4 tubulovillous adenoma, 1 adenocarcinoma. Discrepancy of 3.55%.
6. 8 classified as Type IV: 1 Hyperplastic, 2 Low grade tubular adenoma, 5 tubulovillous adenoma. Discrepancy of 0.59%
7. 2 classified as Type-V: 1 Low grade Tubular adenoma, 1 tubulovillous adenoma. Discrepancy of 1.18%

In total, 71.01% of the polyps had no discrepancy between their descriptions by the endoscopists and their histopathology report, while 28.99% did have discrepancy [21-23].

Conclusion

From this audit we have seen that 100% of endoscopist have described the site of polyps, but 95.25% have described the size of polyps, and 94 polyps (31.86 %) lacked morphology description. There is 28.99% discrepancy between the histology results & the polyps classified using PIT classification. This is an improvement from 41.38% discrepancy from the first cycle of audit [24]. Through this audit it is found that a greater number of endoscopists used the PIT & PARIS classification in describing the polyps compared to the previous audit [25].

- 17 Patel K, Hoffman NE (2001) the anatomical distribution of colorectal polyps at colonoscopy. *J Clin Gastroenterol* 33:222.
- 18 Butterly LF, Chase MP, Pohl H, Fiarman GS (2006) Prevalence of clinically important histology in small adenomas. *Clin Gastroenterol Hepatol* 4: 343.
- 19 Lieberman D, Moravec M, Holub J (2008) Polyp size and advanced histology in patients undergoing colonoscopy screening: implications for CT colonography. *Gastroenterology* 135: 1100.
- 20 Konishi F, Morson BC (1982) Pathology of colorectal adenomas: a colonoscopic survey. *J Clin Pathol* 35:830.
- 21 Shaukat A, Kaltenbach T, Dominitz JA (2020) Endoscopic Recognition and Management Strategies for Malignant Colorectal Polyps: Recommendations of the US Multi-Society Task Force on Colorectal Cancer. *Gastroenterology* 159: 1916.
- 22 Wieszczy P, Kaminski MF, Franczyk R (2020) Colorectal Cancer Incidence and Mortality after Removal of Adenomas during Screening Colonoscopies. *Gastroenterology* 158: 875.
- 23 Komuta K, Batts K, Jessurun J (2004) Interobserver variability in the pathological assessment of malignant colorectal polyps. *Br J Surg* 91: 1479.
- 24 Atkin WS, Saunders BP (2002) British Society for Gastroenterology, Association of Coloproctology for Great Britain and Ireland. Surveillance guidelines after removal of colorectal adenomatous polyps. *Gut* 51 Suppl 5: 6.
- 25 Hassan C, Quintero E, Dumonceau JM Post-polypectomy colonoscopy. *Endoscopy* 52: 687-700.