Research Article

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The value of flexible sigmoidoscopy in the evaluation of rectal bleeding in the young

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ABSTRACT

Background: Rectal bleeding is a frequent symptom in the young and often over- investigated. We reviewed the diagnostic yield of flexible sigmoidoscopy in younger patients in a district general hospital in UK.

Methods: All consecutive flexible sigmoidoscopies carried out between 2010-2013 for bright red rectal bleeding in patients younger than 45 years were analysed. Referrals included direct access, two-week waits, urgent out-patient and in-patient referrals. Routine and follow-up cases were excluded from the review. The extent of examination, diagnosis and procedure related complications were reviewed.

Results: 516 procedures were carried out in the study period with a mean age of 34 (range 17-44). There was no endoscopy-related complications. 8 procedures were incomplete due to poor bowel preparation and 39 (6.7%) had polyps (31 rectal, 8 sigmoid). On histology, 9 (1.7%) were adenomatous with two larger than 1 cm, 2 had no polyp tissue, one rectal carcinoid and two carcinoma (0.4%) (rectum and sigmoid). The rest were hyperplastic polyps.

Conclusions: Prevalence of size significant polyps and advanced adenoma is very low (1-2%) in younger patients. A flexible sigmoidoscopy for bright red rectal bleeding alone in younger patients with no associated symptoms and an identifiable anorectal cause for bleeding by proctoscopy or rigid sigmoidoscopy is a huge strain on resources and cost limiting especially with a polyp incidence of 1.7% and carcinoma detection of 0.4%.

Keywords: Rectal bleeding, Flexible sigmoidoscopy, Polyps, Carcinoma

INTRODUCTION

Bright red rectal bleeding is a common and often trivial symptom in the young population. Benign anorectal pathology is the aetiology in 90% of such patients referred for surgical evaluation and it may well be still higher due to substantial under-reporting of these symptoms especially in the young population. The incidence of colorectal cancer is strongly linked to age with the highest incidence rates being in older men and

women in the UK. On average at least two thirds of cases were diagnosed in the over 65-years age group with the highest incidence in over 85-years age group.³

Younger patients (<45 years of age) are perhaps overinvestigated when they present with bright red rectal bleeding alone as a symptom. A standard referral to a surgical clinic for patients with rectal bleeding would involve detailed history and examination as well as proctoscopy and/or rigid sigmoidoscopy as part of further

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evaluation.⁴ To subject all young patients for subsequent investigations in the form of flexible sigmoidoscopy is a significant strain on resources and cost (roughly £600 for a flexible sigmoidoscopy in UK) especially in the absence of associated bowel symptoms, or after identifying an anorectal cause at proctoscopy or rigid sigmoidoscopy.⁵

Our aim is to evaluate all flexible sigmoidoscopy examinations performed for bright red rectal bleeding alone as an indication in our hospital in patients younger than 45 years and assess the diagnostic yield.

METHODS

Data was collected retrospectively from the endoscopy unit database of all consecutive flexible sigmoidoscopy examinations over a three year period from 2010 to 2013. A younger patient, for the purpose of the study, is defined as one aged 45 years or less. Patients who had rectal bleeding as their only symptom were included in the study. The presence of any associated bowel symptoms, anaemia, raised faecal calprotectin, weight loss, palpable mass, previous history of inflammatory bowel disease or polyps and family history of polyps served as exclusion criteria for the study.

Data regarding the extent of endoscopic examination, endoscopic diagnosis and procedure-related complications were recorded. Referrals included suspected cancer two-week wait, all urgent and in-patient referrals whilst routine and follow up referrals were excluded for the purpose of this study.

Mean with one standard deviation was computed for the relevant data and statistics calculated using student t test and fishers exact analysis. A P value of <0.05 was considered significant.

RESULTS

Over a three year period, 3000 flexible sigmoidoscopies were performed in our unit and 516 patients were identified after the exclusion criteria were applied. All patients underwent flexible sigmoidoscopy for rectal bleeding alone. Patients received either moviprep or kleen prep for their bowel preparation. Entonox was used for most patients with a small proportion needing fentanyl or pethidine for pain relief. The age range of patients in the study group ranged from 17 to 44 years with a mean of 34.9 years. The study group comprised of 247 female patients and 269 male patients. Although no procedure-related complications were reported in the study group, 8 flexible sigmoidoscopies were incomplete due to pain and/or poor bowel preparation. The various endoscopic diagnoses offered included normal flexible sigmoidoscopy, haemorrhoids, diverticular disease, anal fissure, solitary rectal ulcer, polyps and the proctitis (Figure 1).

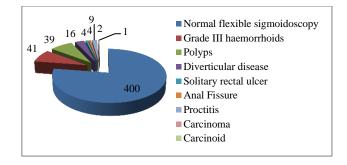


Figure 1: Endoscopic findings at flexible sigmoidoscopy (n=516).

Of the 400 patients who had no mucosal pathology identified at flexible sigmoidoscopy, over 96% reported their symptoms to have resolved completely at the time of the procedure and in the remaining patients their symptoms were attributed to internal haemorrhoids.

At endoscopy, 39 polyps were identified of which 31 were in the rectum and 8 sigmoid. Standard fluid assisted polypectomy was carried out for larger polyps (> 5mm) whilst the remaining were hot snared. Histological assessment revealed nine tubulovillous adenomas (two larger than 1 cm), one carcinoid of the rectum and two carcinoma (0.4%). Two had no polyp tissue on histology and the rest were hyperplastic polyps of the rectum.

Subgroup analysis of patient demographics revealed patients with polyps (n=39) were older in age when compared to the group (n=474) without polyps (37.0 \pm 5.2 vs. 34.7 \pm 7.2, P value <0.05). Likewise, there was male preponderance in patients with polyps in comparison to those without polyps (74% vs. 52%, P <0.05). As per this unadjusted analysis, increasing age & male sex are significant predictors for polyp occurrence.

Limitation

Ideally a receiver operator curve analysis would be useful to predict an accurate age cut off for polyp incidence however a relatively small sample size precluded this.

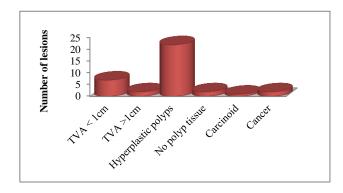


Figure 2: Histological assessment of polyps identified at endoscopy (Pathology distribution).

TVA - Tubulovillous adenoma

DISCUSSION

Bright red rectal bleeding is a common symptom and often under-reported especially in the younger population due to the varied perception levels of health concerns.⁶

Rectal bleeding and/or a change in bowel habit (frequent bowel motions or increased looseness) in association with increasing age (over 60 years) serves as a powerful predictor of colorectal cancer in such population.⁷

Wauters et al reported that the positive predictive value of rectal bleeding as a symptom of colorectal cancer increases with age with figures of 21% in 70-79 years age group whilst it is <1% in patients younger than 50 years.⁸

The age specific incidence of colorectal cancers increases from around 50 years of age with the highest incidence in the over 85 years age group.³

Prevalence of advanced adenomas, like cancer, increases with age and this has been reported by several studies. ^{9,10}

Mathew J et al. have reported an adenoma incidence of 2% in patients younger than 45 years with rectal bleeding in their study. From our study the adenoma rate was 1.7% including an advanced adenoma rate of 0.4% and a cancer rate at 0.4%.

An arbitrary age of 30 years or more (n=386) as per the study, has a polyp frequency of 9.8% in comparison to 3.07% in patients younger than 30 years (P <0.05).

However age alone should not serve as the differentiating factor in evaluating these patients. In the younger, lower-risk patient with suspected inflammatory bowel disease, faecal calprotectin is a useful screening tool. A flexible sigmoidoscopy cost about £600 per patient whilst a faecal calprotectin costs less than £50. Waugh et al reported that a negative faecal calprotectin result is a reliable way of excluding IBD thus reducing the need and cost for invasive investigations like colonoscopy. ¹²

Various epidemiological studies have reported no colorectal cancer diagnosis in patients with rectal bleeding who are younger than 50 years of age and these were based on long term follow up period of up to 10 years. ^{13,14}

It is reasonable to say a high index of suspicion, especially when symptoms persist along with no identifiable ano-rectal pathology should warrant further evaluation.

Selective use of flexible sigmoidoscopy in such situations may offer a more cost-effective diagnostic approach and reduce the strain on limited health resources in NHS in evaluating younger patients with bright red rectal bleeding and an identifiable ano-rectal source.

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Ethical approval: Not required

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