Inappropriate Colonoscopic Surveillance of Hyperplastic Polyps

Abstract:

Colonoscopic surveillance of hyperplastic polyps alone is controversial and may be inappropriate. The colonoscopy surveillance register at a university teaching hospital was audited to determine the extent of such hyperplastic polyp surveillance. The surveillance endoscopy records were reviewed, those patients with hyperplastic polyps were identified, their clinical records were examined and contact was made with each patient. Of the 483 patients undergoing surveillance for colorectal polyps 113 (23%) had hyperplastic polyps alone on last colonoscopy. 104 patients remained after exclusion of those under appropriate surveillance. 87 of the 104 patients (84%) were successfully contacted. 37 patients (8%) were under appropriate colonoscopic surveillance for a significant family history of colorectal carcinoma. 50 (10%) patients with hyperplastic polyps alone and no other clinical indication for colonoscopic surveillance were booked for follow up colonoscopy. This represents not only a budgetary but more importantly a clinical opportunity cost the removal of which could liberate valuable colonoscopy time for more appropriate indications.

Introduction

Colonoscopy is a finite resource and like any scarce, expensive resource should not be wasted unnecessarily. The bulk of evidence suggests that colorectal cancers evolve from precancerous polyps, the so-called polyp-cancer sequence. There are two main types of colorectal polyps: hyperplastic polyps and adenomas. The adenoma is fundamentally an epithelial lesion with malignant potential, whereas the hyperplastic polyp was traditionally a benign epithelial lesion with no malignant potential. Adenomas progress to carcinomas through a linear sequence of genetic alterations involving tumour suppressor genes (e.g. APC and p53) and oncogenes (e.g. KRAS). On the basis of these proposals clinical guidelines have been established for the management and follow-up of colorectal polyps.

The current guidelines on the surveillance of adenomatous polyps from the British Society of Gastroenterology categorize patients as low, intermediate or high risk, and the interval to the first follow-up examination varies accordingly. The joint American guidelines vary somewhat from their British counterpart in their recommendations for colonoscopic follow-up of adenomas. As there are no randomised controlled trials for screening of patients with a family history of colorectal cancer we used screening guidelines endorsed by a consortium of gastroenterology societies. Patients with two first degree relatives affected or those with one first degree relative diagnosed less than sixty years of age, or both were deemed to have a significant family history and warranted surveillance. The current consensus is that it is inappropriate to colonoscopically survey patients with hyperplastic polyps alone as most evidence suggests that their presence does not confer an increased risk of colorectal carcinoma.

Methods

This audit was carried out in a university teaching hospital serving a population of approximately 500,000 people and performing on average 2,500 colonoscopies per year. Colonoscopy referrals were accepted from consultant physicians and general practitioners and were then booked by one of 8 endoscopists; 4 consultant gastroenterologists and 4 consultant surgeons. Patients awaiting a colonoscopy for polyp surveillance were identified from the endoscopy database in the hospital. All current records on the colonoscopic surveillance register were reviewed including medical charts, the hospital database and clinic letters between July and November 2009. Patients with hyperplastic polyps were identified using the digital reporting system for histopathology. Patients under appropriate surveillance for a history of adenomatous polyps, colorectal cancer, inflammatory bowel disease (IBD), familial adenomatous polyposis (FAP) and hereditary non-polyposis colorectal carcinoma (HNPCC) syndromes were excluded. Patients were then contacted by telephone with a questionnaire to confirm the absence of any exclusion criteria and to determine the presence, if any, of a family history of colorectal cancer.

Attempts were made to identify who exactly had booked each colonoscopy and whether they were junior doctors or consultants. While the vast majority of decisions to book for subsequent surveillance colonoscopy were made by consultants or registrars the filling of the booking forms was frequently delegated to more junior staff. In addition, many of the forms were illegible. Consequently we were unable to make each decision or whether the decision was made by a consultant or a registrar. The practice in the hospital is to await histology reports before booking a patient for repeat surveillance colonoscopy. Unfortunately it was not possible to confirm that endoscopists awaited these results as the booking dates for colonoscopies were often either unreliable or not recorded and a booking date later than the date on the histology report does not guarantee that the decision to rebook was informed by the histology result.

Results

There are 483 patients currently on the colonoscopic surveillance register. 113 of these had hyperplastic polyps alone on last colonoscopy (23%). The average age of the patients was 55 years. Nine patients were excluded using the criteria outlined above. One hundred and four patients remained. 46% (46/104) were male and 54% (56/104) were female. Eighty seven (84%) patients were under appropriate surveillance for a history of adenomatous polyps, colorectal cancer, inflammatory bowel disease (IBD), familial adenomatous polyposis (FAP) and hereditary non-polyposis colorectal carcinoma (HNPCC) syndromes were excluded. Patients were then contacted by telephone with a questionnaire to confirm the absence of any exclusion criteria and to determine the presence, if any, of a family history of colorectal cancer.

There were 127 hyperplastic polyps documented from the 104 patients included in the study. 88% (113/127) of hyperplastic polyps were in situ. 89% (113/127) of hyperplastic polyps were located on left side of the colon. With regard to surgical versus medical referrals, there were 6 patients (6/104) with hyperplastic polyps alone on the colonoscopic surveillance register that had been booked by the surgical service and 50% of these were being inappropriately surveyed. There were 98 patients booked by the gastroenterology service (94%, 98/104) and 49% of these were under inappropriate surveillance for hyperplastic polyps.

Discussion

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Fifty patients with hyperplastic polyps alone and no other clinical indication for colonoscopic surveillance were booked for a follow-up colonoscopy at an average 5 year interval. This represents 10% of patients on the colonoscopic surveillance register. This is very likely an underestimate as we were unable to contact 17 of the 104 patients with hyperplastic polyps alone and we have not included these in our figures. The current consensus is that hyperplastic polyps alone do not increase risk of colorectal carcinoma and need no colonoscopic follow-up. Two studies, however, indicate that hyperplastic polyps are a risk factor for colorectal carcinoma. A Swedish study reported an increased incidence of hyperplastic polyps in patients with a familial history of colorectal carcinoma. The study had a relatively poor yield with only seven adenomas found at follow-up examination. This is very likely an underestimate as we were unable to contact 17 of the 104 patients with hyperplastic polyps alone and no other clinical indication for colonoscopic surveillance. Two studies, however, do not require surveillance. This study, however, does not address this issue.

There is ongoing research into the existence of morphological and molecular heterogeneity among hyperplastic polyps. 50% of all that resource unnecessarily denies or delays patients with necessary care, appropriateness of colonoscopy in patients under surveillance for colorectal carcinoma with a finding of distal hyperplastic polyps on flexible sigmoidoscopy has no increased risk of proximal neoplasia. This evidence supports the general consensus that hyperplastic polyps alone do not confer a higher risk of advanced neoplasia than adenomas alone.  This is an important finding as it provides reassurance to patients and health care professionals.  The study had a relatively poor yield with only seven adenomas found at follow-up examination. This is very likely an underestimate as we were unable to contact 17 of the 104 patients with hyperplastic polyps alone and no other clinical indication for colonoscopic surveillance. Two studies, however, do not require surveillance. This study, however, does not address this issue.

Colorectal cancer has been shown to be a significant cause of death in Western countries and is the second most common cancer in both men and women in the United States.  It is estimated that in the United States, colorectal cancer will cause more than 50,000 deaths in 2008.  The survival rate for colorectal cancer has improved significantly in recent years due to advances in early detection and treatment.  One of the most effective ways to detect colorectal cancer is through colonoscopy.  Colonoscopy involves the use of a flexible tube called a colonoscope, which is inserted into the rectum and colon through the anus.  This allows the healthcare provider to visually inspect the colon for any signs of cancer or other abnormalities.

There are a number of potential risks associated with colonoscopy, but the benefits of early detection and treatment of colorectal cancer far outweigh the risks.  The most common complication of colonoscopy is bleeding, which can range from mild and self-limiting to severe and life-threatening.  Other complications include perforation (a tear in the colon lining), infection, and immune system reaction to the dye used to enhance the visibility of the colon during the procedure.  The risk of death from colonoscopy is very low, estimated to be less than 0.1%.  However, in a health system where endoscopy resources are finite and where there are increased demands for colonoscopy, not only for the investigation of symptomatic patients but also for population screening programs, the need for accurate identification of patients with genuine indications for colonoscopy access to the investigation: a significant clinical opportunity cost. Education is essential in order to prevent inappropriate referrals. Ideally junior doctors should receive tutorials on appropriate endoscopic surveillance guidelines and should be given a copy of the approved guidelines. By improving the quality of colonoscopy, the risk of colonoscopy itself, low though it is, is finite. Perforation occurs in approximately 0.1% of patients. Bleeding may also occur at the site of biopsy or polyp removal. Sedation for the procedure can occasionally result in complications. Clearly avoiding unnecessary repeated colonoscopies eliminates these risks.

This study is limited to one endoscopy unit. The 50 patients under inappropriate surveillance represent 0.4% (10/2310) of colonoscopies carried out in the unit per year based on 2008 figures. If we were to extrapolate this figure nationally, which obviously is making numerous assumptions; this could translate to 237 (0.4% of 59343) colorectal cancers with an annual incidence of 7.0 per 100,000 population. The role of re-audit to complete the audit circle is also essential to assess how services have improved.

References