

## *Occasional report*

# Future requirements for colonoscopy in Britain

*\*Report by the Endoscopy Section Committee of the British Society of Gastroenterology*

**SUMMARY** Current gastroenterological opinion is that colonoscopy provides the most accurate technique for diagnosing structural colonic disease, especially neoplasia. A strong case has been made for continuing colonoscopic surveillance of patients with neoplastic polyps, chronic ulcerative colitis, and after resection of carcinomas. The incidence of these diseases is known, and calculations can be made of the desirable frequency of colonoscopy. These indicate that about 160 colonoscopies per 100 000 population per year are required. At present facilities in the United Kingdom fall well below that figure.

### **The need for colonoscopy**

Despite advances in radiological and surgical techniques the survival rates for colorectal cancer have not improved in the last three decades. It is well known, however, that colorectal cancer, if detected and resected at an early stage, can be associated with five year survival rates in excess of 90%. Furthermore, in the light of evidence for the adenoma-carcinoma sequence and the impressive results obtained by Gilbertsen in reducing the expected incidence of rectal cancer by polypectomy,<sup>1</sup> many cases of colorectal cancer should be preventable by prophylactic polypectomy and appropriate follow up. The barium enema service available to the NHS falls short of the ideal, with long waiting lists and too often poor quality films – 30% of radiologists still performing single contrast examinations,<sup>2</sup> and a similar figure for neoplastic lesions discovered by colonoscopy in patients with a 'normal' barium enema.<sup>3</sup> Early cancers and polyps are also frequently missed among diverticular disease.<sup>4,5</sup> Colonoscopy, or possibly a combination of flexible sigmoidoscopy and high quality double contrast radiology, offer improved accuracy and are the ideal techniques for accurate colonic diagnosis.

Regular colonoscopic follow up is required of both polyp and successfully treated cancer patients because of the likelihood of recurrent or metachronous lesions. Surveillance is also required for longstanding ulcerative colitis patients, the trend being towards annual or biennial colonoscopy and biopsy<sup>6,7</sup> rather than automatic colectomy after 10 years of extensive disease.

\*This report of the Endoscopy Committee of the BSG was originally prepared for the Liaison Committee with the DHSS, two years ago. The Endoscopy Committee became interested in the issue and decided to bring it up to date and improve it. It is probably the first calculation of a demand for a specific service, which health authorities in the UK, and possibly abroad can take as a yardstick. The members of the Endoscopy Committee responsible for the report are as follows: Drs J R Bennett, D L Carr-Locke, A T R Axon, C B Williams, P M Smith, R C Heading, and Surgeon Commander R J Leicester.

## Indications

The main indications for colonoscopy are:

- 1 Diagnostic – elucidation of equivocal radiological appearances
  - investigation of rectal bleeding or anaemia
  - investigation of altered bowel habit
  - differentiation or assessment of extent and activity of inflammatory bowel disease
- 2 Therapeutic – polypectomy
  - coagulation of angiodysplasia
- 3 Surveillance – follow up of polyp patients
  - detection of premalignant changes in colitis
  - follow up of postoperative cancer patients

An accurate figure for demand in the diagnostic section is difficult to give, as it depends on the clinician's preference for a particular diagnostic approach, availability, and quality of radiology, etc. This category probably accounted for most of the examinations done between 1975 and 1980, however, and now comprises between 55% and 60% of the workload.<sup>7</sup>

## SURVEILLANCE

Follow up colonoscopy accounts for about half of all examinations.

### 1 Polyps

The incidence of colon polyps is unknown though two series (from Haslar and Dublin) found polyps in 28% of new patients undergoing colonoscopy (unpublished data).

Any recognised incidence must be presumed to be an underestimate, many polyps being found incidentally at endoscopy for symptoms unlikely to be caused by the polyp. Nevertheless, the adenoma-carcinoma sequence indicates the desirability of removing all adenomatous polyps with subsequent colonoscopies at one year and then at three to five yearly intervals.

Common experience among colonoscopists is to discover (and deal with) about 30–40 polyp patients per 100 000 population each year. Even at five yearly review intervals this would produce about 50 colonoscopies/100 000 per year, with a steady rise until cessation of follow up or death occurred.

### 2 Carcinoma

The incidence of recurrent and metachronous carcinoma or of adenomatous polyps (which are potentially premalignant) in patients who have had a colonic resection for a first carcinoma is sufficient to justify postoperative surveillance.<sup>8–12</sup>

The incidence of colorectal carcinoma is approximately 30/100 000. About half of these patients are likely to have undergone curative resections, and current opinion suggests that in these a perioperative colonoscopy, either before or within three months of operation, and then about once every five years is a practicable and desirable aim. If polyps are found, then the same interval of follow up as outlined in (1) above is indicated. If this was extended to only 10 years that is, three colonoscopies per patient, 45 colonoscopies per 100 000 per year would be required.

### 3 *Ulcerative colitis*

The incidence of carcinoma in patients who have had total colitis for more than 10 years is such as to make colonoscopic surveillance desirable. Based on work at St Mark's Hospital (still in progress) it currently seems appropriate to carry out a total colonoscopy with multiple biopsies on all such patients every year or two in order to detect dysplastic changes.<sup>7</sup> A recent survey in High Wycombe<sup>13</sup> indicates that carrying out such a policy with examinations only every two years involves about 16 colonoscopies per 100 000 per annum, although recent results from St Mark's indicate that annual colonoscopy is the desirable aim.<sup>7</sup>

#### **Resultant demand**

The figures quoted above, although crude and probably conservative, indicate a need for colonoscopy per 100 000 population of about:

Diagnostic	50
Polyps	50
Carcinoma	45
Ulcerative colitis	16
Total	161

Even practised colonoscopists find five to six colonoscopies per session enough (taking into account some polypectomies and the need for discussion of findings with the patients, paperwork etc). Thus, ideally, the average 250 000 district requires at least two full sessions of colonoscopy each week.

#### **Present position**

In 1981 a BSG survey of endoscopy units in Britain showed that each unit (serving a population of 150–250 000) did 122 colonoscopies per year,<sup>14</sup> an increase of 56% over the previous survey six years earlier.<sup>15</sup> In 1986 this figure had risen to an average of 186 examinations amongst 39 units surveyed (colonoscopy comprising an average of 14.5% of all endoscopies performed). Two centres were not doing colonoscopy at all, 10 units performed more than 250 colonoscopies per year and six more than 400 (unpublished data). There is also a wide variation in the completeness of the examination, ranging from 55%<sup>4</sup> to 97%<sup>8</sup> total colonoscopy.

Over the last three years there has been an average increase of 19% per year in the number of colonoscopies undertaken at RNH Haslar, reaching a figure of 343 (230/100 000 population) in 1985, 13.5% of which were done for other hospitals in the region. A study in the Trent region<sup>16</sup> (regarded as under-provided in endoscopy) gave a figure of 30 to 50 colonoscopies per 100 000 population and in Brighton (personal communication) the frequency was 100 per 100 000 in 1984.

#### **Conclusion**

Although there has been an increase in the number of colonoscopies being done nationally, recent surveys indicate that only about one hospital in six is providing anywhere near the ideal service in numbers of colonoscopies and the completeness of examination varies considerably. If there is to be any hope of improving our diagnostic rate for colonic neoplasia and providing a

reasonable cancer surveillance service then there must be a concerted effort to equip and train more colonoscopists.

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