Long term follow-up of patients with diminutive colorectal adenomas

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J REGULA, W BARTNIK, E CZACZKOWSKA-SZMIT, E BUTRUK. Long term follow-up of patients with diminutive colorectal adenomas. Can J Gastroenterol 1993;7(1):33-36. A long term follow-up of patients with small colorectal adenomas was conducted in order to evaluate the occurrence and growth rate of such polyps. The study involved 95 patients (56 men and 39 women; mean age 58 years) in whom total colonoscopy and histological examination revealed colorectal adenoma(s) of up to 7 mm in diameter. In some patients all detected polyps were removed during the first examination, while in others the polyps were left in situ for further colonoscopic observation. Control colonoscopies were performed in 66 patients (70%) after a mean period of 4.8 years (range nine months to 13 years). One patient examined 10 years after initial colonoscopy was found to have cancer (Dukes A) in the ascending colon. Twenty patients had new adenomas ranging from 1 mm to 2 cm in size, and in 16 of those in whom the adenomas were left in situ, the polyp diameters increased by at least 2 mm. Altogether, the polyps grew or appeared as new lesions in 45% of the patients. This percentage should be taken into account when planning a management strategy for patients with small colorectal polyps.

Key Words: *Adenoma, Colon, Colonoscopy, Follow-up study, Rectum, Small colorectal polyps*

Suivi à long terme de patients atteints d'adénomes recto-coliques

RÉSUMÉ: Un suivi à long terme de patients porteurs de petits adénomes recto-coliques a été effectué de façon à évaluer la survenue et le taux de croissance de tels polypes. L'étude comprenait 95 sujets (56 hommes et 39 femmes, moyenne

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THE SIGNIFICANCE OF DIMINUTIVE colorectal polyps has not been precisely defined. Most authorities advocate removal of all small polyps when first detected during colonoscopy. Such a policy is supported by the existing risk of adenoma – carcinoma transformation (1) and by studies showing that up to 76% of diminutive colorectal polyps are adenomas (2-6). Although the risk of developing adenocarcinoma in polyps of up to 5 mm in diameter is low (0.1 to 0.6%) (4,6), as many as 15 to 22% of malignant adenomas are smaller than 1 cm in size (7,8).

A quite different point of view is presented by those authors who refer to older reports revealing that 72 to 90% of diminutive colorectal polyps are hyperplastic and thus without malignant potential (9,10). These authors tend to ignore small lesions that are 5 mm or less in diameter, regarding them as irrelevant (11). To support this view they quote a study which showed that removal of all small polyps (less than 1 cm in diameter) did not decrease the risk of later development of colorectal cancer (12).

Growth rate of diminutive colorectal polyps largely is unknown and was assessed endoscopically in only one

d'âge: 58 ans) chez qui la colonoscopie totale et l'examen histologique révélaient des adénomes recto-coliques d'au plus 7 mm de diamètre. Chez certains patients, tous les polypes décelés avaient été enlevés dès le premier examen, alors que chez d'autres, les polypes ont été laissés pour une observation colonoscopique ultérieure. Les colonoscopies de contrôle ont été accomplies chez 66 patients (70 %) après une période moyenne de 4,8 ans (variation 9 mois à 13 ans). Un patient examiné 10 ans après la colonoscopie initiale a présenté un cancer (Dukes A) au niveau du côlon ascendant. Vingt patients présentaient de nouveaux adénomes qui variaient de 1 mm à 2 cm de dimension et chez 16 de ceux chez qui les adénomes ont été laissés, le diamètre des polypes avait augmenté d'au moins 2 mm. De façon générale, les polypes se sont développés ou de nouveaux sont apparus chez 45 % des patients. Ce pourcentage doit être pris en considération lorsque l'on planifie le traitement chez les patients porteurs de petits polypes recto-coliques.

study in which polyps were observed for two years (13).

A long term follow-up of patients with small colorectal adenomas was conducted to evaluate the occurrence and growth rate of such polyps.

MATERIAL AND METHODS

The charts of 1420 patients who underwent total colonoscopy between 1976 and 1987 were reviewed. Of these, 149 patients were selected who had small colorectal polyps ranging from 1 to 7 mm in size but no additional or previous larger polyps were present. None of these patients had a history of colorectal carcinoma, inflammatory bowel disease or familial polyposis coli. After exclusion of 54 patients who had exclusively non-neoplastic polyps (12 hyperplastic polyps, six juvenile polyps, three lymphoid polyps, three inflammatory polyps, two fibromas, one lipoma, seven normal mucosa) or lesions without histological diagnosis (20 patients), the group was reduced to 95 patients who constituted the study population.

There were 56 men and 39 women. Their median age was 58 years (range 34 to 82 years). Of 179 polyps discovered in these patients, 144 (80%) were adenomas, six (3%) were hyperplastic, one (0.5%) was inflammatory and 28 (16%) were neither biopsied nor removed. All patients had at least one histologically proven adenoma.

The distribution of 144 adenomas was as follows: rectum 34 (23.5%); sigmoid colon 63 (44%); descending colon 19 (13%); transverse colon including splenic flexure 17 (12%); right colon including hepatic flexure 11 (7.5%). Solitary neoplastic polyps were present in 49 patients (52%). Tubular adenomas predominated and accounted for 132 of the 144 neoplastic polyps (92%). There were also 12 tubulovillous adenomas but no villous adenomas among the diminutive polyps. Most of the adenomas (89%) showed mild dysplasia and there was one (0.7%) tubular adenoma with severe dysplasia. The diameter of 121 adenomas (84%) was 5 mm or less. The remaining 23 polyps (16%) were 6 or 7 mm in size. After standard biopsy, 92 of the 144 polyps were left in the colon and/or rectum for further colonoscopic observation. Fifty-two remaining adenomas were removed by the diathermic snare or destroyed by hot-biopsy forceps. Randomization was not performed and no defined criteria were applied to choose the treatment method for small polyps during initial colonoscopies. However, there was a tendency to leave such polyps in situ for further observation in at least one-half of the patients.

Patients were invited by letter for follow-up examinations. Preparation of the large bowel consisted of clear liquid diet for 48 h, bisacodyl tablets and enemas. Colonoscopy was usually carried out on an outpatient basis using Olympus CF10HL or CF20HI colonoscopes. In most cases no sedation was used. In rare situations, 10 mg diazepam or 50 mg pethidine were administered intravenously. Location of the tip of the colonoscope was judged fluoroscopically. Three endoscopists were involved in the study; one performed 50% of all examinations.

A new polyp was defined as that found on control colonoscopy at a site remote from previously described polyp(s). Polyp diameter was assessed against the rule immediately after retrieval in case of diathermic snare polypectomy and against the opened biopsy forceps in the remaining cases. Polyp growth was recognized when its size increased by at least 2 mm compared with the size during index colonoscopy. The duration of follow-up was the interval between the date of polyp diagnosis and the last colonoscopy.

RESULTS

Of the 95 patients with diminutive colorectal adenomas who met the inclusion criteria, follow-up examinations were performed in 66 (70%). In the remaining 29 patients control colonoscopies were not possible. Eight of these patients did not accept colonoscopy, 11 died and 10 were lost to follow-up. None of the patients who did not accept control examination had symptoms suggestive of colorectal cancer and all deaths were due to unrelated causes. Overall, full or partial information about the large bowel was obtained in 85 patients (90%).

In 66 patients who underwent follow-up examinations, the time between initial diagnosis of small colorectal adenoma(s) and the last control colonoscopy was from nine months to 13 years (mean 4.8 years). Overall results of the follow-up colonoscopies are presented in Table 1.

One patient examined 10 years after total colonoscopy and removal of a single sigmoid adenoma was found to have cancer (Dukes A) in the ascending colon. This patient was successfully treated by surgery.

In 20 patients (30%) 57 new adenomas (at least one in each patient) were detected after a mean period of 4.8 years (range eight months to 9.5 years). The diameters of the new adenomas were below 1 cm in all except one patient, in whom a 2 cm tubulovillous sigmoid adenoma was discovered 8.5 years after initial colonoscopy. Among

57 new adenomas there were 50 tubular adenomas with mild dysplasia, one tubular adenoma with moderate dysplasia and six tubulovillous adenomas with mild dysplasia. In addition, 13 other new polyps were discovered (12 hyperplastic polyps and one polyp without histological diagnosis due to inadequate material). All but one of the hyperplastic polyps appeared in patients who also had at least one new adenoma.

Growth rate of small adenomas could be assessed in 40 patients in whom 64 adenomas were left in situ during initial colonoscopy. Follow-up period of this subgroup of patients ranged from 15 months to 13 years (mean six years). During that period the polyp diameter increased by at least 2 mm in the case of 23 adenomas (36%) present in 16 patients (40%). The diameters of six adenomas in five patients (13%) reached 1 cm or more and the diameters of 18 polyps in 12 patients (30%) doubled. The mean increase of the diameter of all polyps that grew was 4.3 mm. The histological pattern of 21 growing adenomas did not change. The remaining two polyps described previously as 3 mm and 5 mm tubular adenomas showed the structure of tubulovillous adenomas, together with a change in the degree of dysplasia from mild to moderate in one case and from moderate to severe in the other. These two adenomas reached sizes of 1 cm and 1.7 cm after 4.5 and 7.5 years, respectively. Altogether, after exclusion of one case of cancer, the adenomas grew or appeared as new lesions in 29 of 65 patients (45%). All the polyps detected were ultimately removed during control colonoscopies.

Of the 64 adenomas that were left in situ in 40 patients, 19 adenomas could not be demonstrated in 16 patients during follow-up colonoscopies. They were probably removed by standard biopsy forceps during initial colonoscopy. No complications occurred during follow-up colonoscopies.

TABLE 1
Results of the follow-up colonoscopies in 66 patients with diminutive colorectal adenomas

Follow-up finding	Number of patients (%)
Colon cancer	1 (1.5)
New colorectal adenomas	20 (30)
Adenoma growth left in situ	16 (40)

DISCUSSION

To the authors' knowledge, this is the first long term, endoscopic follow-up study of patients with exclusively diminutive colorectal adenomas. Most previous colon polyp follow-up studies dealt with adenomas of all sizes, and in studies that concerned small adenomas there was no long term follow-up. In addition, strict comparisons with other studies are limited because different definitions of diminutive polyps have been used in various studies. Some authors consider polyps no greater than 5 mm in diameter as diminutive (3,5, 13,14), whereas others take 6 mm (6), 9 mm (15) or even 1 cm (2,12) as the cut-off diameter. In the present study, 7 mm was chosen; this is the size of the opened biopsy forceps and it is easy to assess the size of the polyp by seeing if it is larger or smaller than the forceps. The only study comparable to the present study is from Sweden where patients with various colorectal polyps were re-examined two years after index colonoscopy, at which time larger polyps were removed and smaller ones (less than 5 mm) were left in situ (13).

In the present study one Dukes A cancer was detected in the ascending colon 10 years after initial colonoscopy; this is in accordance with the expected time of development of colorectal cancer (five to 10 years) (1). In the study of Hoff et al (13) no cancers were detected two years after index colonoscopy, while in studies dealing with polyps of all sizes, new cancers were detected in 0 to 3% of patients (11,16-18). In the retrospective analysis done by Morson and Bussey (19), the cumulative risk of cancer in patients 15 years after polypectomy was much higher (10%).

New colorectal adenomas occurred in 30% of patients in the present study, a rate similar to that calculated in follow-up studies of patients after polypectomy of adenomas of all sizes (19 to 45%) (16-18,20). In contrast, Hoff et al (13) found that new polyps appeared in only 6% of patients. One possible explanation for this difference is a longer surveillance period in the present study but other factors cannot be excluded, including environmental ones.

In the current study, 36% of the polyps left in situ in 40 patients showed growth after a mean time of six years. The proportion of polyps that grew could be even higher (51%) if 19 polyps that were biopsied and not found during control colonoscopy were deducted. Growth rate of the larger colorectal adenomas (larger than 1 cm) was assessed in studies done by Knoernschild (21), Welin et al (22) and Stryker et al (23). Their method of growth assessment was mainly radiological. In the most recent of these studies (23), the polyp growth was found in 37% of polyps after a mean time of nearly six years. Furthermore, the cumulative risk of large bowel malignancy after five, 10 and 20 years was found to be 4, 14 and 35%, respectively. In the only endoscopic study by Hoff et al (13), the polyp growth was detected in 49% of small adenomas and their total mass increased by 136% after two years.

Altogether, new polyps or growths were observed in 45% of patients in the study presented here. This percentage should be taken into account when planning a management strategy for patients with small colorectal polyps. In the authors' opinion, this figure of 45% is high enough to justify the need for removal of small polyps and for follow-up colonoscopic examinations. Timing of such examinations should be the matter of further studies. The time between the first and subsequent colonoscopies would not have to be shorter than five years, since the main purpose of control examinations is to avoid cancer and not just to 'hunt for the polyps'.

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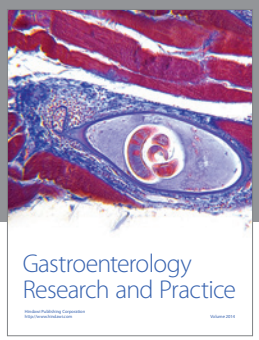

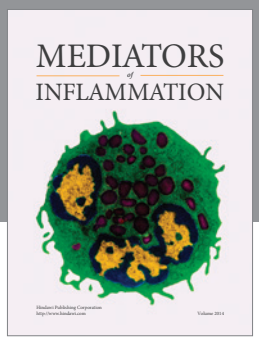

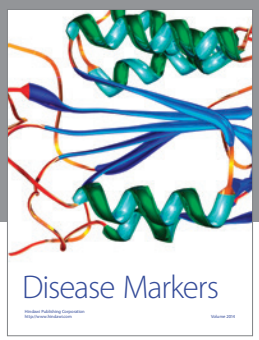

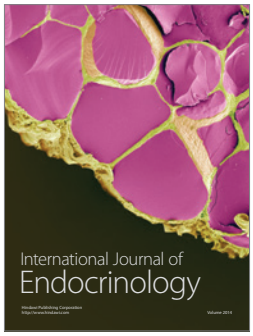

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