

Follow-up Study of Patients with Benign Mucosal Polyps Discovered by Proctosigmoidoscopy*

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CONTROVERSY as to whether colorectal polyps and colorectal carcinoma are causally related still exists. The question could actually be resolved into two parts: 1) do all colorectal carcinomas evolve from polyps? and 2) can colorectal polyps progress to invasive malignancy? The answer to the former is probably "no," while to the latter is probably "yes."

Concern with these questions has obscured the more important matter of the neoplastic tendency of the colorectal mucosa in certain individuals. Thus, 4 to 11 per cent^{1, 2, 4, 5} of the general population will be seen to have polyps on routine proctosigmoidoscopic examination, and of these, 25 to 41 per cent^{6, 7} will be found to have metachronous polyps on follow-up study. It is well known that colorectal carcinoma will develop in all individuals with familial multiple polyposis and its variants, such as Gardner's syndrome. The tacit assumption made, whatever one's stance on the polyp-cancer question, is that the colorectal

TABLE 1. *Age and Sex Distribution of Patients with Polyps*

Age (Years)	Men	Women	Total
35-44	24	13	37
45-54	46	23	69
55-64	73	51	124
65-74	26	18	44
75+	5	4	9
TOTAL	174	109	283

mucosa has an overwhelming capacity to develop neoplasia which, by some method, eventuates in malignant disease. It is then logical to question whether this increased tendency to develop neoplasia and all its implications can be ascribed to the individual found to have one or a few colorectal polyps. Answering this question would define guidelines for rational follow-up and treatment of these patients.

With these problems in mind, a study⁷ was begun 12 years ago at the Lahey Clinic Foundation in conjunction with the National Cancer Institute. From January 1, 1954, to July 1, 1956, 4,400 patients were examined by proctosigmoidoscopy. Of these, 305¶ were found to have benign mucosal polyps, which were either fulgurated or excised when found; this number excludes

* Read at the meeting of the American Proctologic Society, Detroit, Michigan, June 10 to 14, 1973.

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¶ The original report included 307 patients. On review, two patients were found to have coexistent cancer and therefore were excluded.

those in whom evidence of coincidental carcinomas of the large bowel was found. The present study was a 15-year follow-up of these 305 patients, with particular attention to the incidence of colorectal carcinomas which subsequently developed.

Methods

Attempts were made to contact all 305 patients included in the study by telephone, in order to interview them in depth. If an examination or an operation had been performed by a physician not associated with the Lahey Clinic, he, too, was telephoned. If the patient had died, the physician in attendance was contacted, and the hospital record and autopsy report, when available, were obtained.

Results

Of the original 305 patients, 283 (93 per cent) were traced. Table I shows the age and sex distribution of those contacted at

TABLE 2. *Expected and Observed Carcinomas in Follow-Up Periods*

Follow-up (Years)	Expected Cases	Observed Cases
5	1.80	3
10	2.50	1
15	2.20	8
TOTAL	6.50	12

time of initial examination. Sixty per cent of those traced were alive; of the 40 per cent who had died, 25 per cent had had postmortem examinations. Of the 283, 28 per cent had not had any medical follow-up for the colorectal polyps. Of those who had undergone proctosigmoidoscopy or barium-enema examination, or both, after their initial treatment, 56 per cent had been seen at the Lahey Clinic and 44 per cent at other facilities. Only 32 per cent of the patients contacted had had either a proctosigmoidoscopic examination or a barium-enema study within the preceding three years.

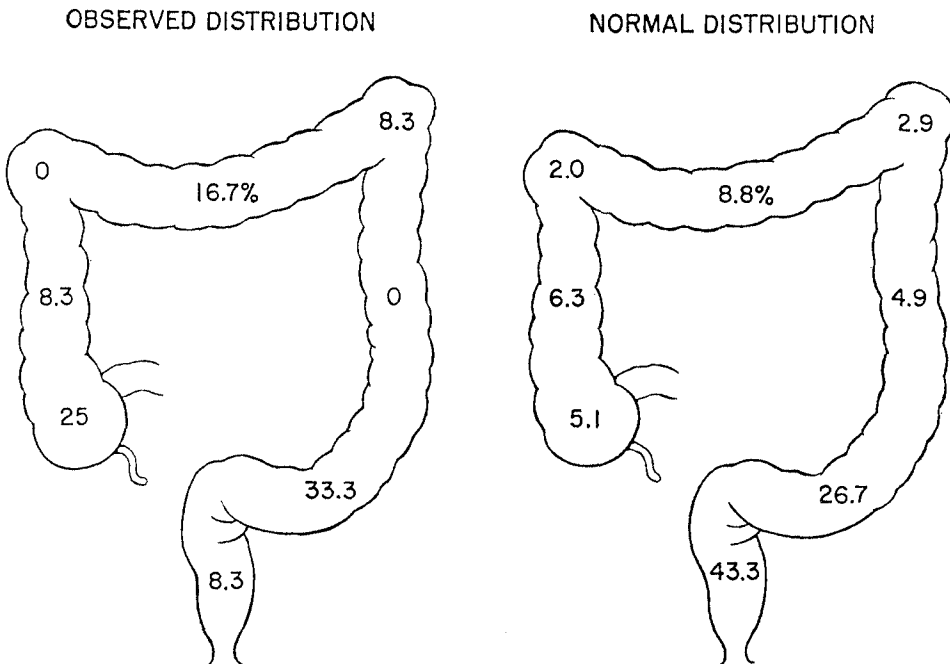


FIG. 1. Observed and normal distributions of carcinomas (per cent).

Of those traced, 95.4 per cent originally had had adenomatous polyps, while 4.6 per cent had had villous polyps. Forty-four patients (15.5 per cent) had recurrent polyps: 38 had adenomatous polyps and six had villous polyps. All of the villous polyps were found in patients originally found to have villous polyps.

Carcinoma was found in 12 patients. Table 2 includes the expected number of carcinomas for each five-year follow-up period and the number observed. Figure 1 compares the distribution of the observed carcinomas with the usual distribution of colorectal carcinomas. All sigmoidal carcinomas observed were above reach of the sigmoidoscope. Two of the 12 carcinomas occurred in patients who originally had had villous polyps; one patient had carcinoma *in situ* in a recurrent rectal villous adenoma, and one patient was found at necropsy to have had a metastatic cecal carcinoma. Of the 12 patients with carcinoma, five (42 per cent) had additional polyps on follow-up examinations.

Discussion

Two facts stand out. The number of observed carcinomas was twice the number expected, significantly different ($P < 0.05$ per cent), and their distribution was markedly different from the normal pattern. Both of these observations stimulate interrelated thoughts. To begin with, persons with colorectal polyps have a greater tendency to develop carcinoma of this organ than do individuals in the unaffected population. Second, the carcinomas evolve in areas not previously the sites of polyps. Third, the carcinomas are in areas of the bowel that are too high for diagnosis (and treatment) by proctosigmoidoscopy. Perhaps, as a fourth surmise, without discovery and treatment of the lesions within reach of the proctosigmoidoscope, the number of carcinomas in the polyp-bearing population would have

been greater yet. Last, there seems to be a definite tendency toward development of neoplasia and malignant disease in the colorectal mucosa of the polyp-bearing individual, less than that of patients with familial multiple polyposis but definitely greater than that of the general population.

On the basis of these conclusions, routine proctosigmoidoscopy is recommended as a screen for patients with polyps, and the patient with polyps should have proctosigmoidoscopy, colonoscopy, and barium-enuema examinations periodically for the rest of their lives.

Summary

In a long-term follow-up study, individuals with colorectal polyps had a significantly higher incidence of the development of colorectal carcinomas than the unaffected population. The vast majority of these carcinomas were not within the reach of the sigmoidoscope. Individuals who have had colorectal polyps should have careful follow-up studies for the rest of their lives.

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