Multiple Lymphoid Polyposis and Familial Polyposis of the Colon: A Genetic Relationship*

P. S. Venkitachalam, M.D., Edward Hirsch, M.D., Alberto Elguezabal, M.D., Leon Littman, M.D.

Familial polyposis of the colon is a well-known premalignant condition. Lymphoid polyposis is considered benign by most investigators. However, there is a genetic relationship between the two conditions and, more importantly, they can be mistaken for each other clinically as well as radiologically. A case of multiple lymphoid polyposis occurring in a family affected by familial polyposis of the colon is presented, and the literature is reviewed.

Report of a Case

A 12-year-old boy was admitted with the diagnosis of familial polyposis of the colon. His grandfather and aunt had died of carcinoma and polyposis of the colon. His mother had undergone total colectomy and ileostomy for familial polyposis. The family tree is represented in Figure 1.

All routine laboratory data were normal. Sigmoidoscopy showed numerous polyps in the rectum and sigmoid. Biopsy was not done. A barium-enema air-contrast study showed polyps throughout the colon (Fig. 2). The x-rays were interpreted as familial polyposis of the colon.

Family history and sigmoidoscopic and x-ray findings suggested beyond doubt a case of congenital familial polyposis, and subtotal colectomy was considered the operation of choice. Electrofulguration of polyps in the terminal 7 inches of the rectum was performed a few days preoperatively. At operation the terminal 2 inches of the ileum and the entire colon, including the upper rectum, were excised. The cut end of the ileum contained numerous small polyps, and hence a further 9-inch segment of the terminal ileum was resected and ileorectal anastomosis was performed.

On opening the specimen, the entire colon, rectum, appendix and terminal ileum were found to be studded with small polyps, each 3-4 mm in diameter (Figs. 3-5).

The polyps were rounded, smooth, nonpedunculated, covered by intact mucosa, with central pitting. No other type of polyp was present. There were also many enlarged mesenteric lymph nodes, biopsy of which showed no evidence of malignancy.

Microscopically, all the lesions were found to be mucosal lymphoid polyps and not adenomatous polyps. The polyps represented collections of lymphatic tissue in the submucosa projecting into the lumen. No evidence of atypia, malignancy, or adenomatous polyposis was found. The polyps had well-defined germinal centers, surrounded by a rim of lymphocytes without encapsulation. The mesenteric nodes showed hyperplasia (Figs. 6 and 7).

Discussion

Previous investigators credit Briquet with first having reported a case of lymphoid hyperplasia of the entire gastrointestinal tract, in 1838. Cohnheim, in 1865, described another case and proposed the name gastrointestinal pseudoleukemia. Fieber and Shafer, in 1966, collected eight cases from the literature, as the only pathologically verified cases of lymphoid hyperplasia of the terminal ileum.

The exact etiology of this condition is not well understood. Early investigators considered it to be a benign variety of lymphoma. Others suggested a chronic inflammatory origin. Still others thought it represented an intermediate stage between acute mesenteric lymphadenitis or regional enteritis and giant follicular lymphoma.

There appears to be a strong genetic factor in the etiology of this condition. Louw, in 1968, postulated that lymphoid polyposis could occur as a genetic variant of familial adenomatous polyposis. He had no proof of actual cases for this at that time. Gruenberg and Mackman, in 1972, reported the first case to support this, and ours will be the second such case.

We have made efforts to verify the diagnosis of polyposis in the affected members of this patient's family.

We feel that the information recorded in the family pedigree (Fig. 1) is wholly reliable. Where positive
findings have been recorded, their presence has been confirmed by a survey of hospital documents covering hospitalizations of these individuals. In those instances where we have not had the opportunity to examine non-affected members of the kindred, word-of-mouth confirmation from members of the kindred has been accepted for inclusion in the pedigree.

In the past there have been few reported cases where an association between lymphoid polyposis and familial polyposis of the colon was mentioned. A summary of the literature on this subject is shown in Table 1.

There has never been a biochemical definition of familial multiple polyposis. It is entirely possible that one chemical reaction or genetic code gone wrong would account for most of the various pathologic changes that are known to occur in association with familial multiple polyposis.

Unfortunately, the term "lymphoid polyposis" also has been used by various authors to describe a malignant condition, and this has created some confusion. Cornes, in his discussion of lymphomatous polyposis of the intestinal tract, included lymphosarcoma, Hodgkin's disease, reticulum-cell sarcoma and giant follicular lymphoma. Similarly, Thompson included a case of reticulum-cell sarcoma under the same heading. These investigators refer to polyps in older patients, in whom the polyps are fewer in number and larger (0.5-5 cm), and there is evidence of malignancy from the onset. The condition to which we refer occurs in younger patients who have diffuse involvement of the entire mucosa by small polyps (3-4 mm) that are benign histologically and, on follow up, have a benign course.

Clinically, the patients occasionally have intermittent abdominal pain, diarrhea, or constipation. Rectal bleeding and intestinal obstruction have been reported. These cases have been mistaken for acute appendicitis, intussusception, and Meckel's diverticulitis. Association with hypo- and dysgamma-globulinemia and resultant recurrent infection are