Journal of Crohn's and Colitis (2014) xx, xxx–xxx

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Neoplasia in the ileoanal pouch following colectomy in patients with ulcerative colitis and primary sclerosing cholangitis

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Received 11 February 2014; received in revised form 3 March 2014; accepted 18 March 2014

KEYWORDS
Colorectal cancer;
Autoimmune liver disease;
Inflammatory bowel disease

Abstract

Background & Aims: Primary sclerosing cholangitis (PSC) is typically associated with inflammatory bowel disease (IBD), particularly ulcerative colitis (UC). PSC–IBD patients are at an increased risk for colorectal neoplasia. The ileal pouch-anal anastomosis (IPAA) is a treatment option for patients with medically refractory UC or neoplasia. However, little is known about the development of pouch neoplasia in PSC–UC patients following an IPAA. We aim to describe the incidence of pouch neoplasia in PSC–UC patients after an IPAA.
Methods: We conducted a retrospective chart review of patients with a confirmed diagnosis of PSC and IBD who underwent colectomy with IPAA followed by pouch surveillance between 1995 and 2012.
Results: Sixty-five patients were included in the cohort and were followed up from the time of colectomy/IPAA for a median of 6 years. The most common indications for surgery were low-grade dysplasia (LGD) and refractory colitis. Only 3 patients developed evidence of neoplasia (LGD n = 1, high-grade dysplasia n = 1, adenocarcinoma n = 1). The cumulative 5-year incidence of pouch neoplasia was 5.6% (95% confidence intervals [CI], 1.8%–16.1%).

Abbreviations: CRC, colorectal cancer; ERCP, endoscopic retrograde cholangiopancreatography; HGD, high-grade dysplasia; IPAA, ileal pouch-anal anastomosis; IBD, inflammatory bowel disease; LGD, low-grade dysplasia; PN, pouch neoplasia; MRCP, magnetic resonance cholangiopancreatography; PSC, primary sclerosing cholangitis; UDCA, ursodeoxycholic acid.

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http://dx.doi.org/10.1016/j.crohns.2014.03.011

Conclusion: Based on our short-term follow-up, surveying the pouch frequently appears to be an unnecessary practice in PSC–IBD patients. Longer follow-up will be needed to develop an optimal surveillance strategy for the development of dysplasia and cancer in such patients.

1. Introduction

Primary sclerosing cholangitis (PSC) is a chronic cholestatic liver disease, characterized by progressive inflammation and fibrosis of the bile ducts which can lead to cirrhosis [1–6]. PSC is associated with inflammatory bowel disease (IBD), particularly ulcerative colitis (UC). Patients with PSC–UC have an increased risk of colorectal cancer compared to those with UC alone [7]. Medical therapy is fundamental in the management of patients with IBD; however, colectomy is required in up to 30% of patients with UC [8]. For patients with UC the surgical procedure of choice is typically a proctocolectomy with ileal pouch-anal anastomosis (IPAA) [9].

The cumulative incidence for pouch neoplasia (PN) in a large IBD cohort was 0.9% and 1.3%, at 5 and 10 years, respectively [10]. Thirty-eight patients (1.19%) had PN (dysplasia or cancer). Fifty cases of cancer arising in the ileoanal pouch have been reported to date. The majority consisted of adenocarcinoma (42/50; 84%), and less commonly, lymphoma (2/50; 4%), squamous cell carcinoma (3/50; 6%) and non-specified cancer (2/50; 4%) were reported [11]. In clinical practice, many gastroenterologists believe that the presence of PSC could increase the risk of PN. Consequently, some recommend an annual pouchoscopy for individuals with PSC who have undergone an IPAA [12]. However, evidence supporting this practice is limited by few studies on PN which included a sufficient number of PSC patients to draw meaningful conclusions.

Risk stratifying individuals who undergo an IPAA will be helpful in determining the intensity of pouch surveillance. Although PSC–UC patients are at an increased risk of colorectal neoplasia in an intact colon, the risk of PN is ill-defined. Consequently, we sought to describe the occurrence of pouch neoplasia in patients with PSC who underwent an IPAA at our institution.

2. Methods

2.1. Patient population

We identified patients with a confirmed diagnosis of PSC and IBD who underwent pouch surveillance between 1995 and 2012. This was done by utilizing a master computer system at Mayo Clinic Rochester and then manually reviewing the charts to confirm the diagnosis of PSC–IBD and confirm pouch surveillance during follow-up.

2.2. Primary sclerosing cholangitis

The diagnosis of PSC was confirmed based on laboratory data showing a cholestatic liver profile, and pathology or imaging tests (endoscopic retrograde cholangiopancreatography [ERCP] or magnetic resonance cholangiopancreatography [MRCP]) showing characteristic bile duct changes with multifocal strictures and segmental dilatations, following the exclusion of secondary causes of sclerosing cholangitis. The date of PSC diagnosis was defined as when a suspected case was first described in the medical record.

2.3. Inflammatory bowel disease

Diagnosis of IBD was made on the basis of clinical suspicion supported by appropriate macroscopic findings on sigmoidoscopy or colonoscopy, typical histological findings on biopsy, and negative stool examinations for infectious agents.

The date of IBD diagnosis was defined as when a diagnosis was first described in the patient's medical record and the diagnosis was then confirmed histologically at the Mayo Clinic. Pouchitis was diagnosed endoscopically when features of pouchitis (mucosal erythema, mucosal friability and loss of pseudo-colonic architecture) were present or biopsies showed inflammation in the lamina propria and hence pouchitis was mentioned on the pathology report. Recurrent pouchitis was the occurrence of pouchitis after successful medical management and remission of the pouchitis. This was determined by the recurrence of symptoms followed by endoscopic/histologic confirmation. Persistent pouchitis was defined as pouchitis not responding to medical management with persistent symptoms and histological changes.

2.4. Neoplasia

Neoplasia was defined as the presence of histologic evidence on endoscopic/surgical specimen of low-grade dysplasia (LGD), high-grade dysplasia (HGD), or colorectal cancer (CRC). The diagnosis of neoplasia was determined by 2 expert pathologists at the time of the original diagnosis. The grade of dysplasia was determined using the criteria from the Inflammatory Bowel Disease/Dysplasia Morphology Study Group [13].

2.5. Data collection and analysis

Patient charts were manually reviewed for demographics and pertinent clinical data including dates of diagnosis of PSC and IBD, date of colectomy and surveillance of the ileoanal pouch following colectomy. Occurrence of PN was also recorded. Continuous variables were reported as median with range. Categorical variables were reported as unique count and percentage of the sample and were compared using Pearson chi-square test. The cumulative incidence of PN was determined using the 1-Kaplan–Meier method. Time to event analysis for the development of PN was determined using the Kaplan–Meier method. Patients who did not develop PN were censored at the time of their last surveillance pouchoscopy.

Please cite this article as: Imam MH, et al, Neoplasia in the ileoanal pouch following colectomy in patients with ulcerative colitis and primary sclerosing cholangitis, *J Crohns Colitis* (2014), http://dx.doi.org/10.1016/j.crohns.2014.03.011