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ORIGINAL ARTICLE

Low prevalence of dysplastic polyps in patients with ulcerative colitis

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Summary
Background and aims: Patients with ulcerative colitis (UC) are prone to colorectal cancer and dysplastic polyps and also have sporadic adenomas. There is scant information, however, relating the prevalence of sporadic adenomas in UC patients compared with normal subjects. The aim of this study was to assess the prevalence of all dysplastic lesions in UC and compare the prevalence of adenomas to that in the general population.
Methods: A single-center retrospective study, in which all patients with diagnosed UC were followed during a ten-year period. The incidence of polyps and colorectal cancers were recorded and compared to that of an age-matched group in the general population who had screening colonoscopy.
Results: A total of 229 UC patients were included compared with 450 age-matched subjects who underwent a single colonoscopy. The average number of colonoscopies per UC patient was 3. The rate of sporadic adenomas among UC patients (9.6%), as well as the rate of all dysplastic polyps (11.2%) in these patients, were significantly lower than the rate of adenomas among the control population (24%; OR 0.33—0.44; $P < 0.0001$). Despite this, the rates of colon cancer were comparable between the groups (2.1% vs. 1.5%, $P = 0.55$).
Conclusions: In spite of the observed lower rate of dysplastic polyps in UC patients, this should not preclude tight surveillance in this high-risk population.

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Introduction

Patients with ulcerative colitis (UC) are prone to dysplastic lesions and colorectal cancer (CRC) [1,2]. Dysplasia can appear as a flat lesion in random biopsies (flat dysplasia) or more frequently as raised lesions [3,4]. On the basis of their location related to the active inflammatory process, polypoid dysplastic lesions can further be divided into sporadic adenoma, which occurs on normal, uninvolved mucosa, and adenoma-like dysplasia (ALD) occurring in tissue with endoscopically or histologically active inflammation. While sporadic adenoma can be safely resected endoscopically [5,6], the treatment of ALD is more varied and depends on its resectability. Recent studies have shown that discrete, well-defined polypoid lesions, also called adenoma-like lesions or masses (ALM) are amenable to endoscopic resection due to their benign natural history [7—9], while irregular, poorly defined lesions, formerly known as dysplasia-associated lesions or masses (DALM), are strongly associated with concurrent or subsequent malignancy, and are indications for colectomy [10].

The distinction between ALD and sporadic adenomas can be challenging, although several clinical, pathological and molecular features may help differentiate between the two. Obviously, patients with ALD have more extensive, prolonged and active disease than patients with sporadic lesions [11,12]. Sporadic polyps are defined as those proximal to a site of known disease; therefore, proximal sporadic colonic polyps are more common than proximal ALD. Although there are some pathological differences between the two [11], histology can be virtually identical. Based on the different carcinogenesis sequence between ALD ('inflammation—dysplasia—carcinoma') and sporadic adenoma ('adenoma—carcinoma'), molecular markers may provide additional tools to distinguish between them [13]. To date, however, these analyses are not applicable to routine clinical practice.

While the benign nature of sporadic adenomas in UC is supported by a mounting evidence [7—9], there is scant information about their prevalence in UC. The incidence of all dysplastic lesions was reported to be 4—25% in population-based studies [14,15], but they were not compared with healthy populations. The primary aim of the present study was therefore to study the prevalence of all dysplastic lesions, including sporadic adenomas, in patients with UC compared with a control non-IBD population undergoing screening colonoscopy and to evaluate the association of various illness parameters on their development. In addition, we compared clinical characteristics of UC patients with sporadic adenomas and ALD.

Patients and methods

This retrospective, cross-sectional study was conducted at Meir Medical Center, a tertiary referral center for patients with IBD in Israel. The computerized database of our institute was used to identify UC patients who were followed-up in the outpatient clinic during 2005 through 2014. Only patients above the age of 40 were included in order to compare them with a non-IBD population undergoing screening colonoscopy. Exclusion criteria included previous colectomy, inadequate preparation or incomplete colonoscopy. The diagnosis of UC was based on the combination of a compatible clinical picture and characteristic endoscopic and histopathological findings. The anatomical extent of the disease as determined by colonoscopy was classified according to established criteria, i.e. distal colitis (inflammation up to the sigmoid colon), left-sided colitis (inflammation up to the splenic flexure) and extensive colitis (inflammation proximal to the splenic flexure).

Surveillance policy and pathology

Routine colonoscopic initial evaluation includes obtaining biopsy specimens from all segments of the colon to assess the disease activity extent. In addition, any suspicious raised lesions, either pedunculated or sessile, are removed with cold biopsy or hot/cold snare, and additional biopsies are taken near the base of the polyp to eliminate flat dysplasia. Specimens are recorded as either negative for dysplasia or indefinite for dysplasia, or as positive for low-grade dysplasia (LGD), high-grade dysplasia (HGD) or CRC. Dysplastic polyps are categorized into sporadic adenomas (if encountered in a bowel segment that is entirely free of endoscopically-visible or microscopic disease) and ALD (encountered in a segment of active disease).

In long-duration disease (>8—10 years) endoscopic surveillance examinations are planned every 1—2 years, in which random biopsies (4 every 10 cm) are performed. If a well-defined, resectable ALD is found, close surveillance of 6 months to 1 year is recommended. If the ALD was not resectable or a flat dysplasia was diagnosed (either LGD or HGD), colectomy is recommended. Patients with sporadic adenomas continue under routine surveillance. All diagnoses of dysplasia were established by a GI pathologist from our institution based on established criteria.

Colonoscopy procedure

Most procedures (about 85%) were performed with a standard white-light colonoscope, the rest were performed with chromoendoscopy or narrow band imaging (NBI). Standard endoscopic techniques for cleansing, detection and resection of polyps were used, including cecal intubation and a withdrawal time of at least 6 min. Polyp size was measured by the operative endoscopist and verified by pathology.

Data extraction

Data extracted from medical records of UC patients included demographics, family history of CRC, the presence of primary sclerosing cholangitis (PSC), extent and activity of inflammation in each segment, disease duration, the presence of any dysplastic polyps and advanced adenoma (villous histology, high-grade dysplasia or >10 mm), subsequent development of CRC (diagnosed at either colonoscopy or colectomy) and the number of surveillance colonoscopies. The age recorded *t* at first colonoscopy during the research period was used, unless a patient had a polyp, in which case the age at this index colonoscopy was documented.