

# Dysplasia risk in ileal pouches after reconstructive surgery for ulcerative colitis

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## ARTICLE

Thompson-Fawcett MW, Marcus V, Redston M, Cohen Z, McLeod RS. Risk of dysplasia in long-term ileal pouches and pouches with chronic pouchitis. *Gastroenterology* 2001;121:275-281.

## BACKGROUND

An important goal for the surgeon after performing proctocolectomy for ulcerative colitis is the preservation of continence, with the formation of a pelvic ileal pouch. In most patients who have required this procedure, clinical results have been satisfactory. In recent years, it has become appreciated that many patients with a satisfactory surgical result are still at risk for pouchitis and pouch neoplasia. This is not surprising because creation of a pouch leads to an environment characterized by stasis, with associated mucosal adaptive changes. In some patients, the ileal mucosa in the pouch may assume the appearance of colonic mucosa.

For some patients, an ileoanal anastomosis is created with a hand-sewn anastomosis, while in others, the ileal pouch mucosa is mechanically stapled to a distal rectal cuff – the latter procedure presumably carries the potential risk

of superimposed cancer in the residual rectal cuff. Some studies, particularly those from Sweden, have indicated that the pelvic pouch mucosa, independent of anastomotic inflammatory changes or the hypothetical risk of cancer in the adjacent residual colonic cuff mucosa, has a risk for neoplastic change, especially dysplasia.

## PATIENTS AND METHODS

In this pathologically based study from Toronto, Thompson-Fawcett et al performed a systematic endoscopic biopsy evaluation of 106 recruited ileal pouch patients with prior ulcerative colitis. The study comprised 77 patients with a pelvic pouch and 29 with a long standing Koch pouch (more than 14 years). The pelvic pouch categories evaluated were: chronic or 'troublesome' pouchitis (arbitrarily defined on the basis of symptoms and pathological evidence of inflammatory change, n=34); pelvic pouch of over 12 years' duration (n=34); and a prior history of proctocolectomy for colonic neoplasia (n=9). Biopsies were endoscopically obtained from standardized sampling sites, including the pouch and the rectal cuff mucosa, and used for light microscopy and p53 labelling; additional pouch biopsies were examined by flow cytometry for aneuploidy. Pouch biopsies were evaluated on the basis of 'consensus' by

two pathologists (not blinded studies) and graded using a published schema. Although intraobserver and interobserver agreement were not detailed, disagreement led to external histological review of pouch biopsies.

The study population was recruited from a large cohort of ileal pouch patients; the results were as follows.

- About one-third of patients had severe villous atrophy in the pouch mucosa, more often in the pouchitis category.
- Low grade dysplasia was defined in a single biopsy from a single patient nine years after creation of the pelvic pouch.
- After the pelvic pouch was resected in this particular patient, multifocal dysplasia was observed in several sites elsewhere in the pouch.
- Additional cases without detected dysplasia or aneuploidy were considered to be positive for *p53*.
- Aneuploid cell populations on flow cytometry were detected in three cases, including the single case with histologically defined dysplasia. Polypoid lesions all proved to be benign, and were usually inflammatory.

### DISCUSSION

This is an important Canadian contribution to the pathological data available in this population group with an ileal pouch for ulcerative colitis. In a large and extensive experience from Toronto, the risks of detected dysplasia or abnormal flow cytometric changes were definite but, fortunately, limited, even in those followed up for prolonged periods of more than a decade after creation of the pouch. In 106 systematically evaluated patients, the biopsy results appeared to alter the course of clinical management in only a single case because ileal pouch dysplasia was detected about nine years after creation of the pelvic pouch. The patient elected to have the pouch removed due to the information provided from the pouch biopsies. Difficulties inherent in sam-

pling were also emphasized in this case because multiple focal areas of dysplasia were detected in the resected specimen along with DNA aneuploid changes. While the risk of detecting dysplasia in an ileal pouch mucosa is low, it is clearly a real risk. At this point, of course, the significance of dysplasia in an ileal pouch is not entirely clear. There are only very rare reports of carcinoma occurring in this setting, and the natural history of dysplasia in the ileal pouch mucosa needs to be defined. The implication may be that an invasive carcinoma is a rare but material risk in the ileal pouch mucosa; this likely translates into an additional piece of data that the ill patient needing a colectomy will have to digest before making an informed decision and committing to a continence-preserving procedure. Unfortunately, in this report, results of the rectal cuff mucosal biopsy studies were not provided but would be very interesting. Carcinoma in this setting, including one reported by some of these authors, have been described closer to the anastomosis, possibly originating from displaced rectal rather than ileal mucosa. Potentially, systematically collected information on rectal cuff mucosa might have even more significance because colectomy alone would not appear to reduce the risk of subsequent rectal cancer development in pelvic pouch patients with a stapled anastomosis and a rectal cuff.

This study confirms that dysplasia can occur in an ileal pouch and suggests that the risk is low. It also emphasizes the potentially significant sampling issues in patients with pelvic pouches that, at least on the basis of apparent surface area, suggest a less formidable problem than is evident from sampling for dysplasia in long-standing colitis. Current enthusiasm for pelvic pouch reconstructive surgery may have to be tempered with the knowledge that the risk of neoplasia and the possible need for systematic surveillance evaluations are not necessarily being eliminated. Additional studies will hopefully be able to select some patients who would benefit from such evaluations, but risk factors for dysplasia in ileal pouches and the development of carcinoma are currently largely unknown.




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