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Long-term functional outcome after ileal pouch anal anastomosis in 191 patients with ulcerative colitis

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Abstract

Background: A long-lasting good functional outcome of the pelvic pouch and a subsequent satisfying quality of life (QoL) are mandatory. Long-term functional outcome and QoL in a single-center cohort were assessed.
Patients and methods: A questionnaire was sent to all patients with an IPAA for UC, operated between 1990 and 2010 in our department. Pouch function was assessed using the Öresland Score (OS) and the 'Pouch Functional Score' (PFS). QoL was assessed using a Visual Analogue Score (VAS).
Results: 250 patients (42% females) with a median age at surgery of 38 years (interquartile range (IQR): 29–48 years) underwent restorative proctocolectomy. Median follow-up was 11 years (IQR: 6–17 years). Response rate was 81% (n=191). Overall pouch function was satisfactory with a median OS of 6/15 (IQR: 4–8) and a median PFS of 6/30 (IQR: 3–11). 24-hour bowel movement is limited to 8 times in 68% of patients (n=129), while 55 patients (29%) had less than 6 bowel movements. 12 patients (6.5%) were regularly incontinent for stools, while 154 patients (82%) reported a good fecal continence. Fecal incontinence during nighttime was more common (n=72, 39%). Pouch function had little impact on social activity (4/10; IQR: 2–6) and on professional activity (3/10; IQR: 1–6). 172 patients (90%) reported to experience an overall better health condition since their operation. The OS and the PFS correlated well (Pearson's correlation coefficient = 0.83). Overall pouch function was stable over time.
Conclusion: Majority of patients report a good pouch function on the long-term with limited impact on QoL.
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1. Introduction

Restorative proctocolectomy with ileal pouch anal anastomosis (IPAA) is the surgical technique of choice for patients with intractable UC or those who develop dysplastic or malignant lesions.[13] It provides a sphincter preserving alternative to Brooke's ileostomy. Beyond the fear for short-term surgical morbidity, many patients have concerns about long-term ileal pouch (dys-) function.[1–3,7,9] Fecal incontinence, urgency and a high number of bowel movements are the main concerns. The young median age of patients referred for surgery requires satisfying, long-lasting surgical outcome, resulting in good QoL. Reliable and validated tools are therefore necessary to assess pouch function.

This study aims to analyze long-term functional outcome of IPAA in a single-center cohort and to assess the evolution of pouch function over time. Some aspects of the impact on QoL are also described. The OS and the PFS were assessed and correlated.

2. Methods

We analyzed the functional outcome of ileal pouch patients operated in our department between 1990 and 2010, using two functional scoring systems: the 'Pouch Functional Score' and the 'Öresland score'.[21,22] The OS was already published in 1989 and was designed to assess the ileal pouch function. It has been designed in an arbitrary way, and even if it has been largely clinically used, no statistical base has been used for its development. On the other hand, the PFS aimed to assess the pouch function using symptoms that were withhold for having an influence on the QoL according to the Cleveland Global Quality of Life (CGQL) score. They assessed the CGQL in 4013 patients and isolated by linear regression all symptoms that significantly influenced the CGQL score. The β coefficient was used to weigh the symptoms on a scale of 30. This score has the advantage of being based on multivariate analysis of a very large cohort. To our knowledge, no external validation has been done evaluating those two scoring systems. We therefore correlated both scores. Besides analyzing the pouch function, we wanted to assess the evolution of the pouch function over time, having a cohort spread over a 20 year period.

A questionnaire was sent by mail to all patients that received an IPAA in our department between 1990 and 2010. Patients with an ileostomy with or without pouchectomy were excluded. The questionnaire comprised all different functional aspects to allow the authors to calculate the OS and the PFS. At the end of the questionnaire, some general questions concerning QoL and a VAS were added to evaluate the impact of bowel function on social and professional activities. A validated QoL score was not used to avoid making the questionnaire too long, which might have had a negative impact on the response rate. Patients had a prepaid response envelop to send their answers back. Patients not returning their questionnaires were contacted by phone as a reminder.

The Pearson's correlation coefficient was calculated to compare both scores and the impact of some risk factors on the long-term pouch function Table 2.

A linear regression model was used to study the association between the total score of both scales and the number of years since intervention. To account for the possible confounding factor of patient's age (older patients may have worse scores and may be over-represented among the long follow-up times), we corrected for age in the regression model. All analyses have been performed by a statistician using SAS software, version 9.2 of the SAS System for Windows.

The ethical committee approval for this study was obtained under registration number S-53357 and ML 7491.

3. Results

250 patients with a median age of 38 years (IQR: 29–48 years) (females: n = 104/250; 42%) underwent IPAA for UC between 1990 and 2010. They were operated for intractable disease despite optimized medical therapy, dysplasia or carcinoma, toxic megacolon, acute bleeding, fulminant colitis not responsive to medical treatment or colonic perforation. About half of the patients (49%) had a laparoscopic approach. 246 patients (98%) had a J-pouch constructed using two limbs of 18 cm–20 cm terminal ileum. 238 patients (95%) had a low-stapled anastomosis. At the time of analysis ultimate pouch failure rate, ending up with a Brooke's ileostomy, was 5.6% (n =14). Four failing pouches were rescued. A questionnaire was finally sent to 236 patients. Overall response rate was 81% (n =191, 106 males, 55%). No demographical differences were observed between the responders and non-responders. Median follow-up was 11 years (IQR: 6–17 years).

3.1. Medication

90 patients (47%) reported taking bowel-regulating drugs (loperamide, colestyramine, probiotics, absorbent agents,

Table 1   Functional outcome of IPAA in 191 patients.

Use of bowel regulating medication	
Yes	90 (47%)
No	101 (53%)
Bowel movements/24 h	
<6	55 (29%)
6 ≤ ≤ 8	74 (39%)
9 or 10	42 (22%)
>10	20 (10%)
Bowel movements during night time	
At least one, once a week	110 (58%)
Never	26 (14%)
Delay of bowel movement	
<15 min	20 (10%)
<30 min	60 (32%)
>30 min	111 (58%)
Fecal incontinence	
Daytime	
Never or seldom	154 (82%)
Sometimes	25 (13%)
Frequently	12 (6.5%)
Nighttime	72 (39%)
Functional score (median/IQR)	
OS	6 (4–8)
PFS	6 (3–11)