



Original article

Diarrhea and flatulence are major bowel disorders after radical cystectomy: Results from a cross-sectional study in bladder cancer patients

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Abstract

Objectives: We had previously demonstrated changes in defecation after radical cystectomy (RC). Reports addressing long-term bowel disorders following RC are rare. This cross-sectional study evaluates long-term bowel issues in a large cohort.

Material and methods: A questionnaire assessing changes in bowel function (diarrhea, constipation, urge to defecate, sensation of incomplete defecation, and flatulence) and its effect on quality of life was developed based on the gastrointestinal quality of life index and distributed in collaboration with the German bladder cancer support group. There were 431 evaluable questionnaires. For the analyses, we focused on patients that had the RC > 1 year ago ($n = 324$).

Results: Current bowel problems were reported by 42.6% of patients. The most frequent bowel problems were flatulence (48.8%), diarrhea (29.6%), and sensation of incomplete defecation (22.5%). In cases of bowel problems, 39.7% and 59.8% of the patients indicated life restriction and dissatisfaction, respectively. Prevalence of diarrhea and flatulence were significantly higher > 12 (vs. ≤12) months following RC. Both symptoms significantly correlated with younger age at RC, life restriction, lower quality of life, lower health state, and lower energy level. Additionally, diarrhea significantly correlated with pouches as urinary diversion (vs. ileal conduit or ureterocutaneostomy) and higher dissatisfaction level.

Conclusions: To our knowledge this is the largest cohort evaluating long-term bowel symptoms after RC. Diarrhea is a prominent symptom after RC with a high impact on daily life that leads to dissatisfaction. A better understanding of long-term bowel symptoms could be translated into optimized surgical procedures, postoperative medication/nutrition, and patient education. © 2018 Elsevier Inc. All rights reserved.

Keywords: Bladder cancer; Bowel disorder; Diarrhea; Quality of life; Questionnaire; Radical cystectomy; Urinary diversion

1. Introduction

Approximately, 79,030 estimated new bladder cancer cases and around 16,870 bladder cancer deaths are expected in 2017 in the United States of America. For men, bladder

cancer is among the 10 leading cancer types, making up 7% of all new cancer cases expected for 2017 [1]. Radical cystectomy (RC) followed by a urinary diversion is the gold standard for localized muscle-invasive bladder cancer [2]. With the exception of ureterocutaneostomies or nephrostomies, all other urinary diversions, such as ileal conduits or pouches, include preparation of the bowel. In general, urinary diversions can be categorized as incontinent (such as ileal conduit) or continent (such as neobladder).

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The proportion of patients receiving a continent urinary diversion continuously increased from 6.6% in 2001–2002 to 9.4% in 2007–2008 [3].

Although most of postoperative management reports of RC describe the 30- or 90-day mortality and complication rates, including infections, or stomal problems [4], there are only a few reports of chronic bowel problems after RC and urinary diversion. As shown before by our working group, up to 46% of the patients report changes in bowel habits, and 26% feel dissatisfied because of these changes in bowel habits. Of those, 78% acknowledge the RC as being responsible for their bowel problems [5].

There are several hypotheses addressing this phenomenon of bowel disorders after RC. The cystectomy itself might cause iatrogenic damage of the surrounding nerves that play a crucial role during the defecation process. The urinary diversion most often includes resection of the ileum, sometimes including the ileocecal valve, which may result in a faster bowel transit time. Resection of the distal ileum leads to an excess of bile acid in the colon due to a disruption of the enterohepatic bile acid

circulation, and reabsorption of the urine in the new urinary diversion can cause metabolic changes. All these circumstances can lead to changes in stool consistency [5–7]. Possible medications to regulate stool consistency are loperamide for diarrhea, cholestyramine for bile acid-induced diarrhea, or psyllium for both diarrhea and constipation [5,8].

It is important that patients are well-informed not only about short-term complications, but also about long-term and chronic complications when explaining the planned surgery.

This cross-sectional study was performed to validate our recent results in a larger cohort.

2. Material and methods

We developed an issue-tailored questionnaire to assess bowel function and its effect on daily life of bladder cancer patients after RC (Table 1). The questionnaire was designed to give a detailed overview about bowel habits and well-being with regard to quality of life, satisfaction, energy

Table 1
Questionnaire

What is your current defecation frequency? approx. _____times per day			
What was your defecation frequency prior to RC? approx. _____times per day			
Do you currently suffer from bowel problems?	<input type="radio"/> Yes	<input type="radio"/> No	
Did you suffer from bowel problems prior to RC?	<input type="radio"/> Yes	<input type="radio"/> No	
Did the bowel problems occur following RC?	<input type="radio"/> Yes	<input type="radio"/> No	
Do you consider the bowel problems to be a consequence of RC?	<input type="radio"/> Yes	<input type="radio"/> No	
How often have you been troubled by the following symptoms within the last 4 weeks?			
diarrhea	<input type="radio"/> always	<input type="radio"/> often	<input type="radio"/> rarely <input type="radio"/> never
constipation	<input type="radio"/> always	<input type="radio"/> often	<input type="radio"/> rarely <input type="radio"/> never
urge to defecate	<input type="radio"/> always	<input type="radio"/> often	<input type="radio"/> rarely <input type="radio"/> never
sensation of incomplete defecation	<input type="radio"/> always	<input type="radio"/> often	<input type="radio"/> rarely <input type="radio"/> never
uncontrolled stool loss	<input type="radio"/> always	<input type="radio"/> often	<input type="radio"/> rarely <input type="radio"/> never
flatulence	<input type="radio"/> always	<input type="radio"/> often	<input type="radio"/> rarely <input type="radio"/> never
In case of bowel problems, ...have these caused any restrictions in daily life?	<input type="radio"/> Yes	<input type="radio"/> No	
...are you currently dissatisfied?	<input type="radio"/> Yes	<input type="radio"/> No	
...how unsatisfied are you? _____ (1 little unsatisfied – 10 very unsatisfied)			
How do you rate your current quality of life? _____ (1 very bad – 10 very good)			
How do you rate your current health state? _____ (1 very bad – 10 very good)			
How do you rate your current energy level? _____ (1 very bad – 10 very good)			

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