



Review of bowel dysfunction of rectal cancer patients during the first five years after sphincter-preserving surgery: A population in need of nursing attention

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A B S T R A C T

Keywords:

Rectal cancer
Bowel dysfunction
Post-operation

Purpose: The aim of the review was to summarize the longitudinal changes in bowel dysfunction among patients with rectal cancer within the first five years following sphincter-preserving resection.

Methods: A series of literature searches were conducted on six English-language electronic databases. Articles published after 1990 were searched. A total of 29 articles (reporting 27 studies) was found.

Results: Bowel dysfunction, including an alteration in the frequency of bowel movements, incontinence, abnormal sensations, and difficulties with evacuation, is reported among patients with rectal cancer within the first five years after sphincter-preserving resection. These problems are most frequent and severe within the first year, especially within the first six months, and stabilize after one year. Some of the problems may last for years.

Conclusion: Supportive care for bowel dysfunction is needed, and should include the provision of information and psychological support delivered in multiple steps. Oncology nurses can play an important role in providing supportive care for rectal cancer patients with bowel dysfunction.

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Introduction

Colorectal cancer is the third most common cancer in the world (Ferlay et al., 2010). Besides the high incidence rate, the prevalence rate of colorectal cancer is also high. It is estimated that around 3.2 million people have been living with colorectal cancer within the past five years, which makes it the third most prevalent cancer globally (Bray et al., 2013). Treatment for colorectal cancer may involve surgery, chemotherapy, radiotherapy or biological therapy (National Cancer Institute, 2012). Surgery is the corner stone of the treatment which varies according to the location and extent of disease. Surgery for rectal cancer can be simply classified into sphincter-preserving surgery and abdominoperineal resection (APR). The continuity of the intestine is maintained after sphincter-preserving surgery, which means that patients can still evacuate feces from the anus. By contrast, for patients undergoing APR, the continuity of the intestine is damaged and a permanent colostomy must be created on the abdomen for fecal evacuation. With the

advancement of surgical techniques, the use of sphincter-preserving surgery has increased. An American study reported a 10% decrease (from 60.1% to 49.9%) in the use of APR from 1989 to 2001 (Abraham et al., 2005). In another German rectal cancer trial, APR was used in less than 30% of patients (Sauer et al., 2004). Nowadays, most patients with rectal cancer can maintain the continuity of the intestine.

Despite the lack of accurate data regarding its prevalence, it is believed that bowel dysfunction is a frequent complication of sphincter-preserving resection (Böhm et al., 2008), and it significantly impairs the quality of life (QOL) of patients with rectal cancer (Bruheim et al., 2010; Pietrzak et al., 2007; Vironen et al., 2006). In the past, nursing professionals might not have paid sufficient attention to patients with rectal cancer suffering from bowel dysfunction. Few articles can be found on this issue from the perspective of nursing (Desnoo and Faithfull, 2006; Landers et al., 2011a, 2011b; Mizuno et al., 2007; Nikolett et al., 2008; Pan et al., 2011). Greater awareness of bowel dysfunction is needed among nursing professionals, and accurate knowledge of the condition is essential if nursing professionals are to be able to provide care for patients with rectal cancer.

Therefore, this review article aims to summarize the research evidence to facilitate our understanding of bowel dysfunction among patients with rectal cancer undergoing sphincter-preserving resection. The initial two objectives of this review

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article were to review the longitudinal changes in bowel dysfunction within the first five years after sphincter-preserving surgery, and to identify factors associated with bowel dysfunction. However, while this review was in preparation, a review article was published that summarized research on the factors contributing to the bowel dysfunction of patients with rectal cancer (Kwann, 2011). Thus, this critical review focused on the longitudinal changes in the bowel dysfunction of patients with rectal cancer within the first five years after sphincter-preserving surgery.

Methods

Search strategy

A series of literature searches were conducted on six English-language electronic databases: the British Nursing Index (BNI), Cumulative Index to Nursing and Allied Health literature (CINAHL), OVID, PsycINFO, PubMed, and Scopus. The following combination of key words was used: (colorectal OR rectum) AND (cancer OR neoplasm OR carcinoma) AND (bowel OR anorectal) AND (symptom OR dysfunction OR problem OR consequence OR sequelea). Articles published between January 1990 and January 2013 were searched. The year 1990 was considered as a starting point for several reasons. In the 1980s, two surgical techniques had been proposed: total mesorectal excision (Heald and Ryall, 1986) and colonic reservoir (Lazorthes et al., 1986). These two surgical techniques became the main surgical techniques for rectal cancer. In 1990, a consensus on adjuvant therapy for patients with colorectal cancer was published (National Institutes of Health, 1990). In addition to the above searches, reference lists of relevant review articles were checked to retrieve articles that had not been identified by the computerized searches.

Article inclusion criteria

The inclusion criteria of articles were as follows: (1) Articles should be published in the English language; (2) Subjects should

be patients with primary rectal cancer within the first five years after sphincter-preserving surgery; (3) At least 30 patients should be recruited in each study; (4) Subjective evaluation of bowel function assessed by questionnaires or clinical interviews was reported. The following articles were excluded: (1) Studies that only reported objective evaluation of bowel function assessed by lab tests; (2) Review articles; (3) Articles that introduced study protocol; (4) Commentaries, editorials, poster abstracts, and case reports. Thirty-three articles were found. Among them, four articles were not included because they did not contain results about the prevalence of bowel dysfunction (Canda et al., 2010; Hida et al., 1996), or studied mixed subjects including patients with colon cancer or rectal cancer (Nikoletti et al., 2008; Ohigashi et al., 2011). Finally, 29 articles (reporting 27 studies) were included in this review (see Fig. 1). Articles that reported the same study from different perspectives were counted as one study.

Results

Study design & settings

Of the 29 articles (see Table 1), a longitudinal design was adopted in 14 articles, and a cross-sectional design was adopted in 15 articles. One study including two articles was conducted in multiple countries (Fazio et al., 2007; Parc et al., 2009), while the others were each conducted in one country. The majority of studies were conducted in Europe, including Finland, France, Germany, Italy, Norway, Poland, Serbia, Sweden, the Netherlands, and the United Kingdom. Some studies were conducted in Asia, including Japan, mainland China, Singapore, and Taiwan.

Characteristics of the subjects

The subjects in most of the studies were recruited through convenience sampling from one institution. In six studies, the subjects were invited from multiple centers. Only one study used a

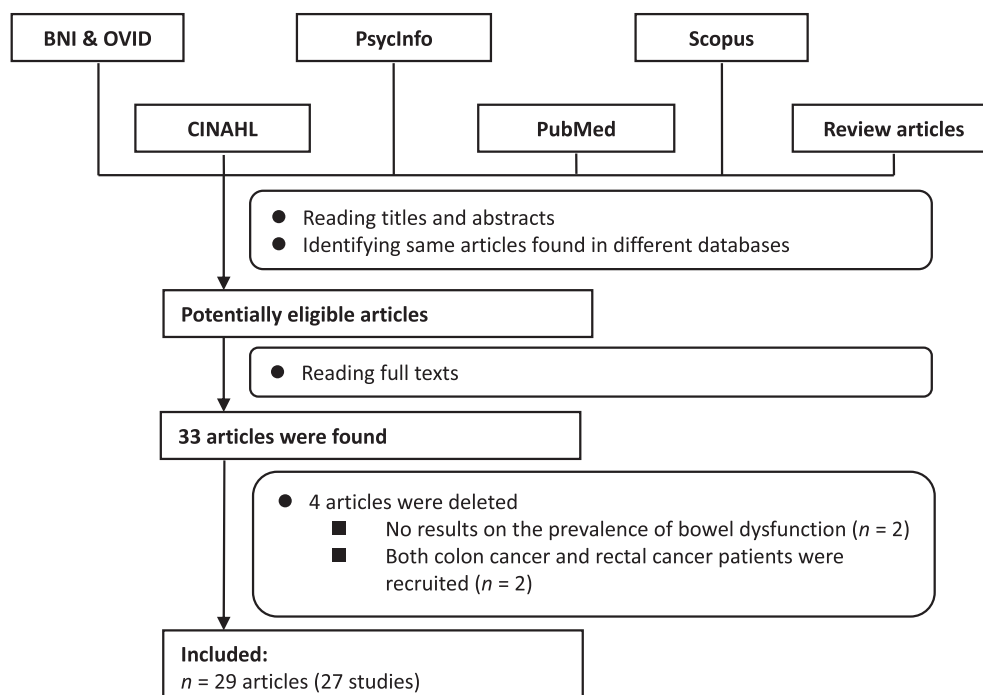


Fig. 1. Articles searching and screening flowchart.

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