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Awareness and management of low anterior resection syndrome: A Dutch national survey among colorectal surgeons and specialized nurses

Gwendolyn Thomas [a, 1], Maarten van Heinsbergen [b, 1], Joost van der Heijden [a], Gerrit Slooter [a], Joop Konsten [b], Sabrina Maaskant [a, *]

[a] Department of Surgical Oncology, Máxima Medical Center, Veldhoven, the Netherlands
[b] Department of Gastro-intestinal Surgery, Viecuri Medical Center, Venlo, the Netherlands

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ABSTRACT

Introduction: Substantial progress has been made in the treatment of rectal cancer in the past two decades. Low anterior resection is a cornerstone in current treatment, combined with neo-adjuvant (chemo-) radiation in selected cases. However, side effects such as increased frequency, urgency and incontinence are seen in a majority of patients postoperatively. These symptoms, referred to as low anterior resection syndrome (LARS), have a severe impact on quality of life. Management of LARS is complex, and surgeons seem to underestimate and misinterpret the impact of symptoms associated with LARS.

Aim and methods: We investigated the awareness and management of LARS in The Netherlands, conducting a national survey in which colorectal surgeons and colorectal care nurses were asked for their views on this complex syndrome.

Results: 242 health-care professionals participated in the survey. Most participants estimate the prevalence of major LARS is 20–40% after low anterior resection (LAR); a severe underestimation of actual prevalence - around 70%. Only 10% of surgeons use LARS screening tools in the preoperative period, and fewer than half of surgeons use LARS scores before or after a LAR. Although most surgeons inform their patients preoperatively about the changes in bowel function that they may experience after rectal cancer treatment, a majority of these surgeons indicate more information and patient counselling would improve the quality of life of their patients.

Discussion: Impact and prevalence of LARS is underestimated by their physicians. Uniform clinical guidelines should be developed to guide physicians in adequate management of patients with LARS.

Introduction

Treatment for rectal cancer has improved dramatically in recent decades. Advances in surgical techniques, as well as better locoregional and systemic treatment options, have improved survival and functional outcome [1,2]. At present, the mean 5-year survival rate after the treatment of rectal cancer is approximately 65%. When disease is detected in an early stage, 5-year survival can even be as high as 90% [3]. These improvements in prognosis have resulted in a rapid increase in the number of rectal cancer survivors [4]. There are now more than 20,000 patients in the Netherlands who have survived rectal cancer and live with the consequences of their illness and treatment [5]. Researchers and clinicians are therefore focusing increasingly on long-term outcome and quality of life (QoL) after rectal cancer treatment.

Low anterior resection (LAR) with total mesorectal excision (TME) and reconstruction with a colo-anal anastomosis is now the gold standard for the treatment of non-disseminated rectal cancer in selected cases. However, there are still bothersome functional bowel complaints associated with both this surgery and locoregional radiotherapy [6]. The most common complaints relate to sphincter dysfunction, which can lead to faecal incontinence, urgency and frequent bowel movements. These sequelae, which are

* Corresponding author. Máxima Medical Center, Department of Surgery, P.O. Box 7777, Veldhoven, the Netherlands.
E-mail address: sabrina.maaskant@mmc.nl (S. Maaskant).
[1] Shared first, authors contributed equally to this study.

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collectively referred to as low anterior resection syndrome (LARS), have a severe adverse effect on the QoL of surviving patients [7,8].

The pathophysiological mechanisms associated with LARS are complex and depend on both a wide range of patient characteristics – such as age, gender or pre-existent sphincter function – and treatment variables such as neo-adjuvant chemo-radiation and the surgical technique employed. Other factors that seem to affect the onset and severity of LARS are linked more directly to variations in surgical procedure: increased blood loss and the distance of anastomosis from the anal verge are both linked to more faecal incontinence and therefore to poorer QoL after rectal surgery [9]. Although LARS is thought to occur in a majority of patients after LAR for the treatment of rectal cancer, until a few years ago exact prevalence rates were difficult to establish due to the lack of strict diagnostic criteria and standardised questionnaires. The recent development of the LARS score – a self-administered patient questionnaire evaluating bowel function – is an important step towards a more routine approach to the evaluation and registration of LARS [10,11]. Studies using this score found a prevalence of major LARS up to 60–90% [9,12]. Even so, there are no clear guidelines for the management of LARS: evidence-based practice in this area still requires substantial elaboration and implementation.

In this study, an online clinical questionnaire was used to ask surgeons and colorectal care nurses about their knowledge and management of patients with major LARS. Besides medical specialists, colorectal nurses play an important role in postoperative follow-up and treatment in the Netherlands. The colorectal care nurse is present at the time a patient is informed of the diagnosis of colorectal cancer. He or she supports and communicates with the patient throughout their care, explaining the diagnosis and the treatment options. We therefore extended our survey to include a group of colorectal care nurses in order to establish a clearer picture of awareness throughout the colorectal care pathway.

Methods

Participants

This Dutch national survey questionnaire was sent to all members of the Dutch Society of Gastrointestinal Surgery (NVGIC) in January, February and March 2017. Potential respondents received an email describing the goal of the survey and surgeons were asked to participate anonymously using a link in the email to the online questionnaire. Two months after the initial approach, a reminder was sent. There were 577 NVGIC members at the time of the survey. Colorectal care nurses were approached at a national conference for colorectal care nurses and asked to complete the questionnaire on paper. The completed questionnaires were then collected immediately. For this study, ethical approval was not needed.

Survey

The online questionnaire consisted of 25 questions, either in multiple-choice form or asking the respondents to rank symptoms. At the end of the questionnaire, participants were given the opportunity to ask additional questions or state comments. The survey was developed internally by the main author (GT), using input of 2 surgeons (SM and GS) who did not participate in the survey.

Statistical analysis

A quantitative analysis of the views of health-care professionals and patients was made using SPSS, version 24. The results of the multiple-choice questions were shown as frequencies, and medians were calculated for continuous variables such as age or number of patients treated per hospital. Multivariate analysis was used to calculate correlations between participant-related factors (hospital, years of experience) and question outcome. A p-value < 0.05 was considered statistically significant. Additional open questions such as suggestions for improvements in care were described in a qualitative fashion.

To compare the rankings of symptom severity by health-care professionals and patients, a two-tailed *t*-test or Mann-Whitney *U* test was used depending on the normality of the distribution of these variables.

Results

Respondents

In total, 142 Dutch surgeons participated in the survey – this is a response rate of 25%. Characteristics of the participants are given in Table 1. Most participants were male (105, 74%); thirty-seven participants were female (26%). The majority of the participants worked in a community hospital (79%); the remaining 21% worked in a university hospital. The median age of the participants was 42 (interquartile range 35–49). Thirty-three participants (23%) had less than five years of experience with the treatment of patients with colorectal cancer, forty-seven (33%) had 5–10 years of experience, and sixty-three (44%) had over 10 years of experience.

The questionnaire was completed by 101 colorectal care nurses, and 92% of the questionnaires that were handed out were returned. Participants were mostly female and had more experience with the treatment of LARS patients than the participating surgeons: 60% had over 10 years of experience.

Prevalence and impact of LARS

A majority of participants (81%) estimated that less than 60% of patients had major LARS and 37% believed that only 20–40% of patients experience major LARS symptoms after a rectal resection (Fig. 1). A low estimate of the prevalence of major LARS was closely correlated with years of experience: more experienced surgeons thought that major LARS was more prevalent after rectal resection ($p < 0.05$). Most surgeons and colorectal care nurses mentioned faecal incontinence as the most important factor affecting QoL in patients with major LARS (Fig. 4).

Screening

The results of our clinical questionnaire indicate that pre- and postoperative screening for LARS is currently not being performed systematically. Preoperative stool function is scored by little over a half of all surgeons (Fig. 2). Even when preoperative assessment is performed, most surgeons use loosely-formulated categories ("no complaints", "poor stool function", etc.). Only fourteen surgeons (10%) use the LARS score to assess bowel function preoperatively, and fifty surgeons (35%) use LARS scores after surgery. Frequency of stool is used most often to assess changes in bowel function; other frequently-used methods include faecal incontinence score (28%), QoL questionnaires (30%) and loosely-formulated categories (16%). Some surgeons used screening methods, and most of them explained in the free text field that they discuss symptoms with the patient in a non-quantitative fashion (dialogue), or refer patients to other health-care professionals (for example a colorectal care nurse). Thirteen percent of the respondents do not assess bowel function postoperatively (Fig. 3). Colorectal care nurses also observed a low rate of pre- and postoperative screening: 77% stated that they do not screen for LARS symptoms preoperatively, and only 22% use LARS scores for postoperative assessment (See Fig. 5).

Table 1
Characteristics of Dutch colorectal surgeons and colorectal care nurses that responded to the clinical survey between January and June 2017.

	Surgeons n = 142	Colorectal care nurses n = 100
Hospital		
University hospital	27 (19%)	8 (8%)
Community or teaching hospital	115 (81%)	92 (92%)
Experience (years)		
<5	33 (23%)	7 (7%)
5–10	47 (33%)	24 (24%)
10–15	24 (17%)	15
>15	38 (27%)	55
Number of LARs in hospital per year		
<20	3 (2%)	5 (5%)
20–40	44 (31%)	35 (35%)
40–60	47 (33%)	31 (31%)
60–80	24 (17%)	14 (14%)
80–100	11 (8%)	12 (12%)
>100	7 (5%)	3 (3%)

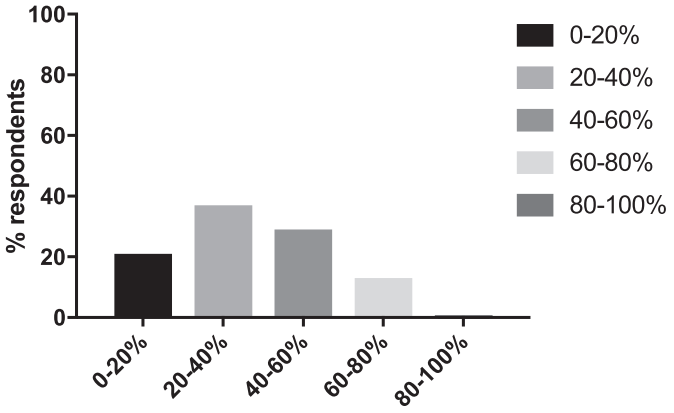

Fig. 1. Prevalence of LARS after LAR for colorectal cancer as estimated by Dutch surgeons and colorectal care nurses (n = 242).

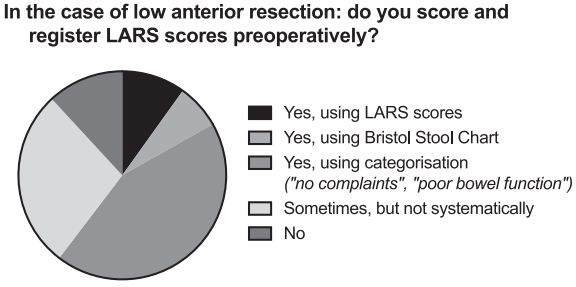

Fig. 2. Preoperative screening for LARS in patients planned for low anterior resection in current practice.

Management

The literature describes approaches in which symptom management may lead to improvements in QoL in patients with major LARS after surgical treatment for rectal cancer. They range from education and life-style changes to physiotherapy or sacral nerve stimulation. Many surgeons (86%) indicated that more patient education would improve quality of life of their patients, and most surgeons (65%) believed that this information should be given preoperatively. As primary treatment, 9 out of 10 respondents recommended life-style changes, often in combination with pharmacological treatment (61%), for the primary treatment of LARS. Many surgeons (82%) also use pelvic floor rehabilitation. Trans-anal irrigation is also used (43%), and 5% use sacral nerve stimulation. In addition, we observed a lack of confidence in more experimental treatment options. Sacral nerve stimulation for example, is considered to be ineffective by 95% of surgeons and colorectal care nurses. We can conclude that we found a considerable variation in the treatment methods and how they were combined, suggesting a lack of standardization. This was also seen in the comments section of the questionnaire, where many surgeons indicated that the development of a uniform national guideline would help to improve care for patients with LARS.

Discussion

Past surveys have shown that a detailed knowledge of LARS is not widespread among health practitioners [9,12]. In addition to underestimating the prevalence of major LARS, doctors misjudge the impact of different symptoms on the QoL of their patients [9]. The findings of a smaller survey also suggested that doctors severely overestimate the impact of faecal incontinence on QoL but underestimate the impact of other symptoms such as clustering [12]. However, that study was limited to doctors who were not familiar with the LARS score and it may therefore have excluded more experienced surgeons and underestimated the knowledge of health-care professionals in this area. The present study shows that knowledge and awareness about LARS is still insufficient. Not only participating surgeons but also colorectal care nurses seem to underestimate the incidence of LARS. Fewer years of experience with the treatment of colorectal cancer is associated with an even larger underestimation of the prevalence of LARS among surgeons. More experience with the treatment and follow-up of these patients may increase the awareness of the impact of rectal cancer surgery on postoperative quality of life. However, professional education in an early phase of surgical training could also lead to substantial benefits in terms of the quality of care provided by less experienced surgeons. Also, integration of LARS in current outcome sets, such as the ICHOM database, could lead to better integration of evidence-based management of LARS in current care.

Screening tools for the presence and severity of LARS may include the LARS score, faecal incontinence scores, anal manometry, frequency of stool or QoL questionnaires. Most participants in our survey did apply the LARS score as a preoperative screening tool, and a third of clinicians stated that there was no systematic postoperative screening of LARS in their hospitals.

However, patients may find it difficult to discuss stool function with their physician and they can even think that problems with their bowel function after surgery for cancer are a normal part of the postoperative recovery. Health-care professionals should

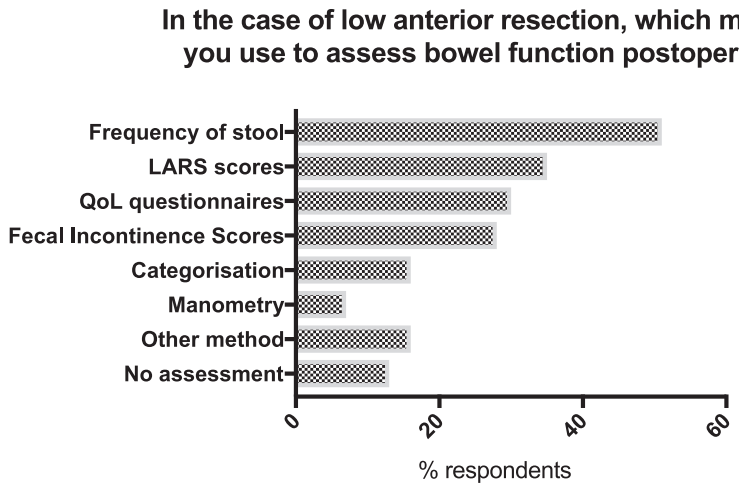

Fig. 3. Methods used by Dutch surgeons to assess postoperative bowel function.

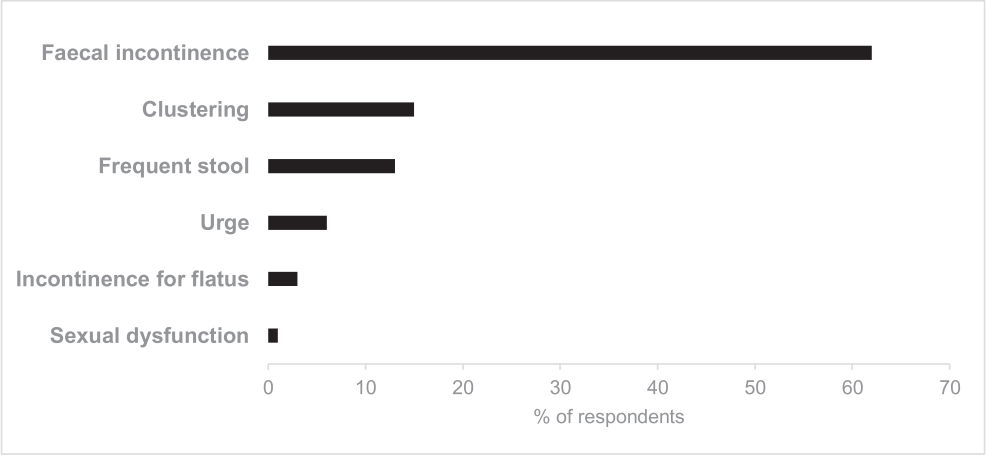

Fig. 4. Most important cause for impairment of QoL according to Dutch surgeons.

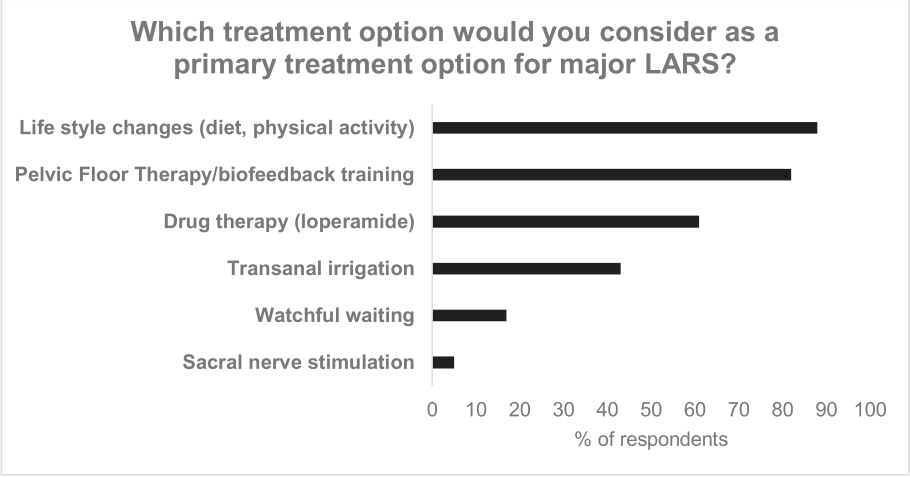

Fig. 5. Treatment options selected by Dutch surgeons for the primary treatment of LARS.

therefore adopt a proactive approach to discussing LARS and treatment options for their patients [13]. Screening for symptoms of LARS could serve as a tool to evaluate the presence and impact of symptoms for clinicians and patients, possibly concentrating on patient, tumour and treatment related risk factors for pre-existent suboptimal bowel function. Previous literature already identified

female gender, a tumour close to the anal verge, the presence of a diverting stoma and the use of neo-adjuvant chemoradiation therapy as well known risk factors for the development of post-operative major LARS [14–17]. These risk factors and the pre-operative presence of LARS-like complaints or symptoms should therefore be assessed before surgical intervention. This information is indispensable for good patient counselling before surgery in order to help patients understand the risk of bowel dysfunction and to preoperatively select patients who may require additional postoperative support [13]. Furthermore, in addition to the important role it can play in daily patient care, the resulting comparison of preoperative and postoperative status could be useful in identifying the symptoms that may have a severe impact on quality of life and may influence their treatment options.

Besides the variety of contributing patient, tumour and treatment characteristics, there is also a wide range of treatment options for LARS described in current literature, including biofeedback methods, sacral nerve stimulation, trans-anal irrigation, medication and lifestyle adjustments [18,19]. This divergence in available treatment options without any preference based on hard evidence, most likely determined the results of our clinical survey. In this survey we found a considerable variation in the treatment methods and how they were combined, suggesting a lack of standardization in the treatment of LARS. Many participants also indicated that the development of a uniform national guideline would help to improve care for patients with LARS. Lifestyle changes and pelvic floor rehabilitation are the cornerstone of treatment; sacral nerve stimulation and trans-anal irrigation are also used, but less often. Our survey did not address the timing of this treatment. Conventional treatment for LARS has been given after surgery. However, ongoing studies such as a randomized controlled trial in Norway (NCT02538913) may show that preoperative intervention has the potential to reduce bowel function complaints after rectal surgery. The development of clear guidelines that reflect state-of-the-art research on LARS are essential if surgeons are to provide LARS patients with optimal treatment.

Strengths

In the context of the improvement of care for patients with LARS, our study provides an overview of current practice in the Netherlands. We conducted our survey in a relatively large cohort of almost 250 health-care practitioners and included colorectal care nurses as well as surgeons. The results of our survey are therefore indicative of the knowledge and current practice in the care pathway for patients with rectal cancer. Also, we looked at years of experience, which was associated with poorer knowledge about prevalence of LARS. This highlights the need for adequate education on the impact of LARS in an early stage of surgical training.

Limitations

Our survey was limited to Dutch health-care professionals and drawing conclusions regarding worldwide practice is therefore not possible on the basis of these results. Furthermore, surveys suffer by definition from non-response bias and self-reporting. The response rate in our survey was high for colorectal care nurses but lower for surgeons. Little is known about non-responder bias in clinical surveys and we cannot therefore accurately predict how LARS is managed by the surgeons who did not participate in our survey [20]. It would, however, not seem unreasonable to surmise that the surgeons who did not respond may be less interested in the topic and that levels of awareness in this group may be even lower than in our respondents.

Conclusion

Our survey shows low levels of awareness among surgeons and colorectal care nurses of patient impairment after rectal surgery. In order to determine patients' needs in terms of education and treatment, it is incumbent upon health-care professionals to objectify the presence of LARS symptoms before and after surgery and to discuss them with their patients according to the principles of shared decision-making. Currently, evidence is being gathered about effective treatment before and after rectal surgery. Uniform clinical guidelines should be developed to help physicians choose the appropriate education and treatment in collaboration with their patients and a multidisciplinary team.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ejso.2018.11.001.

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