Original article

Low anterior resection syndrome (LARS): conservative nursing management

ABSTRACT

Rectal cancer treatment, such as surgery termed an anterior resection, can result in bowel symptoms termed low anterior resection syndrome (LARS). Globally thousands of people each year are likely to experience LARS, which can reduce quality of life. Nursing intervention, such as supporting self management of symptoms by providing advice, can improve symptoms. Understanding LARS and its causes can help nurses to provide support to patients, and knowing what interventions might be useful in specific situations can assist nurses with limited experience of LARS to have confidence to provide the necessary patient care.

Keywords conservative management, LARS, low anterior resection syndrome, nursing, rectal cancer.

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INTRODUCTION

Rectal cancer is reported worldwide with an estimated incidence of about one in every 4550 people.[1] Treatment for rectal cancer depends on patient-related factors, such as general health, co-morbidities and location of the tumour, as well as personal choices about treatment options and subsequent risks. Treatment may, in some countries, depend upon financial factors, such as health insurance or treatment availability. Treatment is likely to include surgical removal of the cancer and possibly adjunct treatment, such as chemotherapy or radiotherapy. The consequences of rectal cancer can include temporary or permanent symptoms. Symptoms will occur in most people after treatment for rectal cancer, if the operation is an anterior resection, a sphincter-saving surgery, enabling defecation via the anus.[2]

Symptoms are usually present from the primary surgery if there is no ostomy or after reversal of a temporary ostomy. Symptoms are often more severe and more frequent in the first three months after surgery but can persist for over 15 years.[3] Patients generally report three main types of symptoms relating to bowel, urinary or sexual function. This article will concentrate on bowel symptoms in low anterior resection syndrome (LARS) patients. It is suggested that up to 80% of people will experience bowel changes after rectal cancer surgery.[2] Furthermore, the focus of this article will be the use of conservative nursing interventions to enable patients to self-manage their bowel symptoms with the aim to ameliorate or resolve symptoms. There will also be exploration of additional management options, evaluation of treatment efficacy and recommendations for future research. Nursing interventions are important to reduce the severity and duration of LARS. Nonetheless, it is likely that most patients will have some LARS symptoms three years after surgery.[4]

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LARS

LARS was described by Keane et al[5] as one or more of eight bowel symptoms, such as anal incontinence, that result in one or more consequences, such as toilet dependency, or has impacts on effects on the person's wellbeing (see Table 1). It is important to understand the meaning and implications for patients of each of the eight LARS bowel symptoms.

Variable, unpredictable bowel function

The predictability of bowel function can change for patients after treatment for rectal cancer. This differs for each patient and can vary from day-to-day with individual patients. Changes can include nocturnal defecation, as well as difficulties in being able to determine what is in the rectum; with uncertainties if it is flatus or faeces. Reduced predictability in bowel function occurs with most patients after rectal cancer treatment.[6]

Altered faecal consistency

The term 'altered stool consistency' relates to constipation, loose stool and diarrhoea. For some people the consistency will not be the same each day, others have a tendency towards

Table 1. LARS definition (Keane et al 2020)[5]

Symptoms	Consequences	Impacting on
Variable, unpredictable bowel function Altered faecal consistency Increased faecal frequency Repeated painful defecation Bowel emptying difficulties Bowel urgency Anal incontinence Faecal soiling	Toilet dependence Preoccupation with bowel function Dissatisfaction with bowels Use of strategies and compromises to manage symptoms	Mental and emotional wellbeing Social and daily activities Relationships and intimacy Roles, commitments and responsibilities

a changed consistency compared to before the rectal cancer treatment. Patients are more likely to report loose faeces than firmer faeces and this will not always resolve but it can be managed.[3]

Increased faecal frequency

The increase of faecal frequency is subjective and can be different for each patient, as it relates to a change compared to preoperative bowel frequency.[5] In the first few months after surgery, bowel frequency can be more than seven bowel motions passed daily but this will often reduce to three per day.[7] After about a year the bowel frequency will not improve in a meaningful way,[8] and it will be necessary to develop strategies if symptoms are not acceptable to the patient.

Repeated painful stools

Painful defecation includes tenesmus and pain felt before, during or post-defecation.[5] About one in five people report pain associated with the urge to defecate.[9]

Bowel emptying difficulties

The term 'emptying difficulties' encompasses a range of bowel changes. This can be a feeling of incomplete evacuation after passing a bowel motion or passing multiple small bowel motions in a short timeframe, such as an hour. Changes in emptying the bowel occur for most people but improves over time.[8]

Bowel urgency

There is no exact definition of 'bowel urgency', but it is likely to relate to a strong desire to defecate that cannot be delayed for more than 15–30 minutes. Bowel urgency is more common after the removal of low rectal cancers compared to ones in the upper rectum.[10]

Anal incontinence

Anal incontinence incorporates faecal incontinence and flatus incontinence, which can be with or without warning. Faecal incontinence is more likely if there are liquid faeces, as this is more difficult to control than formed faeces. Faecal leakage can also occur at night. Anal incontinence will usually improve over time.[11] About half of all patients following LARS have some anal incontinence three months after surgery.[8]

Faecal soiling

Soiling is seen as the unplanned passage of a small faecal smear onto a pad or underwear and is commonly seen some time after defecation. Soiling is experienced by about two-thirds of patients.[6]

CAUSE OF LARS

The cause of LARS is not fully understood in all patients. That said, it is likely that the three main treatment modalities for rectal cancer; surgery, radiotherapy and chemotherapy can all result in changes to the bowel function. Changes might be the result of damage to the nerves of the rectum and descending colon, a reduced rectal capacity or changes to the gut flora. These physical changes may then result in altered colonic transit times and poor control of the pelvic floor or anal sphincters.[12] In some situations, the nerve damage may be temporary and therefore function may improve, but not for all patients.[13]

LARS ASSESSMENT

The current assessment tool developed specifically for LARS is the LARS score.[1] It is a short and quick to complete tool. However, it is dated and does not reflect the current understanding of LARS, nor was it designed to interpret improvements over time, so it is being updated. Nonetheless, it provides three categories; no LARS, minor LARS or major LARS, which serve as a basis to determine the severity of LARS symptoms. This is important as having major LARS is linked with a poor quality of life.[14] However, the LARS score is not designed to determine treatment needs[15] and so it will not help determine which aspect of conservative management might be most appropriate. It is often advisable to undertake further assessment, as highlighted by the LARS score, by using specialist tools, to explore the most bothersome symptom that the patient reports. It is also ideal to assess the patient's goals for treatment, to appropriately set expectations of intervention efficacy, as well as to determine what is an important outcome for individuals.

CONSERVATIVE MANAGEMENT

Pape et al[16] undertook a systematic review of the published LARS intervention pathways. There were 12 pathways discovered, all of which mentioned conservative management of LARS, seen as five interventions: 1) patient information, 2) exercise, 3) lifestyle changes, 4) medication and 5) dietary advice. That said, all intervention pathways were different, only three described all five aspects of conservative management, with either the exclusion of lifestyle changes or lifestyle changes and patient information. The rationale behind these exclusions could include, patient information provision not being considered an intervention and lifestyle changes often being patient-initiated. However, it is uncertain why

the authors, who were healthcare professionals with LARS experience, did not include all five aspects of conservative management. There is some research to support the use of conservative management for LARS symptoms (see Table 2).

EXERCISE

Exercise is commonly recommended to strengthen the pelvic floor and anal sphincters.[17] It is likely that exercises will be more effective for people with weakened muscles that might have occurred prior to the rectal cancer treatment or as a direct result of treatment, such as low rectal resections.

Table 2. Conservative management of LARS symptoms

LARS symptom	Conservative management intervention	Supporting evidence
Variable, unpredictable bowel function	Patient information Dietary advice Medication	Ng and Gladman[24] Pieri and Patton[25] Sun et al[26]
Altered faecal consistency	Patient information Medication Dietary advice	Shaw and Ivatury[27] Sun et al[26]
Increased faecal frequency	Patient information Exercise Lifestyle changes Medication Dietary advice	Chan et al[28] Shaw and Ivatury[27]
Repeated painful defecation	Patient information Medication	Christensen et al[13]
Bowel emptying difficulties	Patient information Exercise Lifestyle changes Medication Dietary advice	Christensen et al[13] Dalsgaard et al[20] Lin et al[29] Pieri and Patton[25]
Bowel urgency	Patient information Exercise Lifestyle changes Medication Dietary advice	Martellucci[2] Pieri and Patton[25]
Anal incontinence	Patient information Exercise Lifestyle changes Medication Dietary advice	Afshari et al[7] Assmann et al[30] Garfinkle and Boutros[31] Haas et al[32]
Faecal soiling	Patient information Exercise Lifestyle changes	Pape et al[23] Yin et al[33]

LIFESTYLE CHANGES

There are multiple lifestyle changes that might be effective to reduce LARS symptoms. These include ways to increase confidence in case of an accident. Such as using a pad or continence pants when leaving the house. Some people choose to wear black instead of white underwear. Some people choose to wear pads at nighttime, in case they have nocturnal faecal incontinence. People report having a 'kit' at work, in the car etc in case of issues, such as an episode of faecal incontinence. The kit might include cleaning cloths, rubbish bags, pads and even a spare set of clothes. Patients might choose to adopt a more effective sitting position on the toilet to aid evacuation, which can include having knees above hips, enabled by a small stool under the feet and allowing enough time to feel relaxed. It is important to keep the perianal skin dry and intact. Wet wipes or soft tissues can help if perianal skin is painful and broken. Any ointment suitable for use on a baby's bottom can also potentially be effective to soothe broken skin, such as barrier creams, nappy rash cream or Vaseline. Using a bidet to clean the perianal skin or a sitz bath, if skin becomes painful. Commonly, people report increased levels of planning when leaving the house, socialising or undertaking sporting activities, such as knowing where toilets are located.

MEDICATION

The three most common medications used to help management LARS symptoms are anti-diarrhoeal bulking agents, which can include psyllium husk and laxatives. Anti-diarrhoeal medication can be used to prevent issues when socialising by taking 30–60 minutes before eating. It is important to remember that some people are sensitive to the effects of anti-diarrhoeal medication and may become constipated. Some people even report positive effects from probiotics, but caution is needed if the person is immunosuppressed. It is likely that people who choose not to take medication, such as loperamide, will need to make more changes, such as eating a restricted diet.

DIETARY ADVICE

It is important to eat food regularly and to chew it well. It is also necessary to eat a balanced diet. Some people report certain foods and drinks can 'trigger' bowel symptoms (see Box 1). Other people can consume most foods and drinks but only in moderation. While others are more adventurous with their diet when at home than if they are out in a restaurant. Despite a lack of research, many people report that manipulation of their diet improves their bowel function. People who have additional dietary needs, such as being a diabetic or vegetarian, might need to have more specialist advice from a trained healthcare professional, such as a dietitian. Many people try to adjust their fibre intake, and substitute wheat-based products with oat-based products, but gradual introduction is needed to avoid bloating.

Box 1. Potential trigger food and drinks

Spicy food
Rich, fatty food
Chocolate
High fibre foods with skins and pips
Alcohol
Coffee
Tea
Cola

PATIENT INFORMATION

To determine what patients wanted to know a series of online semi-structured interviews were undertaken.[18] The results showed that many patients have a desire for knowledge about LARS; this includes knowing the term LARS, so that they can feel that their symptoms are recognised and because it enables them to research the topic. Patients want to understand how their guts function in health and to have knowledge about cancer, treatment options, recovery after treatment and getting back to normal. Patients also want to know about what changes might occur after treatment and how to manage them themselves or what other options are available. Further, patients wish to know who they and their families or carers can ask for help, such as healthcare professionals and peer support groups. Patient information is readily available from a variety of sources, such as from online searches, but Garfinkle et al[19] described it as often poor quality and containing medical jargon, making it difficult to understand. Thus, new patient information was developed to cover the LARS topics that patients want to know about.

SUPPORTED SELF-MANAGEMENT

To support patients, it is important to set small, achievable goals, such as to leave the house and walk to the shops to build confidence. It is also advisable to initiate one change at a time to see its effects. Interventions, such as conservative management, need to be used for about four weeks to determine effectiveness but most people will see some changes within a week or so. It is unlikely that an intervention will work if it has been used for three months without effect. To enable nurses to support patients to self-manage, a healthcare professional resource has been developed with information and additional advice. (Please contact author on email ae4984@coventry.ac.uk to obtain the professional resource).

SETTING EXPECTATIONS

It is important for nurses to set appropriate expectations for life after rectal cancer treatment and the management strategies. It is recognised that there is limited research available to support the management of LARS, so outcomes can be uncertain. Additionally, everyone has slightly different bowel changes and different goals. For some people the intervention may be worse than the symptoms, in which case it should be stopped.

It is known that symptoms will improve most rapidly in the first three months for most people with or without using interventions. Whereas subsequently, the improvement is slower, unless interventions are used. For some people it will be uncertain if changes to the bowel function will be temporary or long-lasting. Although people with low and very low rectal cancers are more likely to have LARS than people with a high rectal cancer.

It is important for the individual to determine what outcomes they want and what bowel changes they cannot live with. This can help plan treatment and enable expectations to be managed. It is known that conservative management of LARS is likely to improve LARS symptoms, but this often requires the use of more than one intervention concurrently. It is also recognised that most people do not progress from conversative management but other more specialist interventions are available.[20,21] Additionally, it is necessary to ensure that patients are aware of when to seek assistance for their concerns. It is necessary to seek urgent medical review if new symptoms occur, such as rectal bleeding, pain or unplanned weight loss, as these symptoms could indicate rectal cancer recurrence and review is needed to exclude a recurrence, prior to addressing the new symptom.

SPECIALIST INTERVENTIONS

If conservative management is ineffective then there are further options available, but the availability of these can vary within each institution. A specialist nurse or physiotherapist can provide pelvic floor rehabilitation or biofeedback. A specialist dietitian can be useful for specialist and personalised dietary advice. Transanal irrigation, also called a water enema, can be useful to manage anal incontinence and emptying difficulties. Percutaneous tibial nerve stimulation requires multiple sessions and effects wear off over time, but it may improve anal incontinence. A gastroenterologist can prescribe specialist medication, which could be useful for a diagnosis of small bowel bacterial overgrowth or salt malabsorption. Sacral neuromodulation, also termed sacral nerve stimulation, can improve bowel control. Very few people choose to have a permanent colostomy to improve their LARS symptoms.

GAPS/INCONSISTENCIES

There are numerous research gaps in the conservative management of LARS. The lack of research relates to difficulties in gaining research funding for research, as well as difficulties in managing research when multiple interventions are often needed consecutively and many additional known and unknown factors, such as stress, can result in LARS symptoms. There are inconsistencies about what conservative management entails, but it is generally considered to be the five factors, discussed in this paper. There is, however, consistency in the understanding that LARS symptoms will improve over time with or without intervention. It is noted that the use of interventions for most people will result in faster improvements in symptoms than they would experience without the use of interventions.

CRITICAL EVALUATION

In 2020, in the UK, NICE[22] undertook a review of the optimal management of LARS. The review included the use of conservative management, specifically dietary manipulation and medications (laxatives, anti-diarrhoeal agents and bulking agents). In addition, the review also included more specialist interventions, such as a stoma formation. The outcome measures were quality of life, in general and bowel specific, as well as a reduction in the LARS score. The latter is known not to be responsive to changes, despite improvement in conditions. The conclusion was that there was no optimal management. This is important in that there is a lack of evidence to support advice provided. Nonetheless, there is evidence to support treatment, but a definitive optimal management option is not available. Due to the variations in treatment options available throughout the world, as well as the different goals of individual patients, it is not possible to determine a single definitive treatment algorithm for LARS management. However, nurse-led intervention using conservative management is likely to improve LARS symptoms and thus improve quality of life after rectal cancer treatment.

RECOMMENDATIONS FOR FUTURE RESEARCH

More evidence is required to support the use of conservative management for LARS symptoms. This could be determining further what interventions and strategies patients use and what they think is effective, following up on work by Hou et al[6] and Pape et al.[23]

CONFLICT OF INTEREST

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