

The Watford low anterior resection syndrome pathway for pre- and post-stoma reversal patients

Abstract

There is increasing awareness of the high incidence of bowel dysfunction experienced by patients after sphincter-preserving rectal resection, termed low anterior resection syndrome (LARS); there remains no agreement on effective methods of treatment or effective management strategies. There were no set protocols in place prior to the development of a nurse-led LARS clinic, which has ensured that all patients undergoing anterior resection surgery are monitored, encouraged and empowered to take an active role in their own care. While being the first point of contact for these patients, the nurse works as part of a wider multidisciplinary team (MDT) and the surgical consultants continue to have overall responsibility for patient care. The Watford LARS pathway is a guide with a method of how best to approach management of patients prior to stoma reversal and in preventing symptoms of LARS. In spite of its infancy, the pathway and clinics are already showing great success.

Almost 42 000 people are diagnosed with bowel cancer every year in the UK (Bowel Cancer UK, 2019). Of these, approximately 8680 patients will go on to have an anterior resection each year, with 6600 having a stoma (National Cancer Strategy, 2018).

One of the most noticeable advancements in colorectal surgery within the last decade has been the increasing use of sphincter-preserving rectal surgery with a low colorectal or colo-anal anastomosis (*Figure 1*) (Berger et al, 2016). This type of surgery avoids a permanent stoma, and the use of a temporary ileostomy is now considered to be standard practice for most colorectal surgeons in the UK (Powell-Chandler et al, 2018). Patients assume that, in preserving their sphincter, their bowel function will not change significantly following rectal resection, or effects will be short-term (Ridolfi et al, 2016). However, it is once the ileostomy is reversed that patients experience bowel dysfunction, which is characterised by a collection of symptoms including faecal incontinence, frequency,

urgency, constipation and incomplete evacuation, commonly known as low anterior resection syndrome (LARS) (Emmertson and Lauberg, 2013; Martelluci, 2016; Thomas et al, 2019). It is estimated that between 25% and 80% of patients develop one or more symptoms of LARS following sphincter-preserving rectal surgery (Ziv et al, 2013; Martellucci et al, 2018). There is some thought that symptoms can sometimes settle within 12 months (Collie and McFarlane, 2013), although literature from the National Cancer Strategy (2015) highlights how patients 1–3 years after diagnosis had no, little or only some control over their bowel function.

More recent long-term data of more than 10 years show persistence of symptoms and major bowel dysfunction in approximately 50% of patients (Battersby et al, 2016; Sturiale et al, 2016). Therefore, a significant number of patients are experiencing unpredictable, poor bowel function, which can affect daily activities and impact on quality of life (Bryant et al, 2012; Pachler and Wille-Jørgensen, 2012; Yin et al, 2018).

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- Transanal irrigation
- LARS
- Pathway
- Nurse-led
- Pre-stoma reversal

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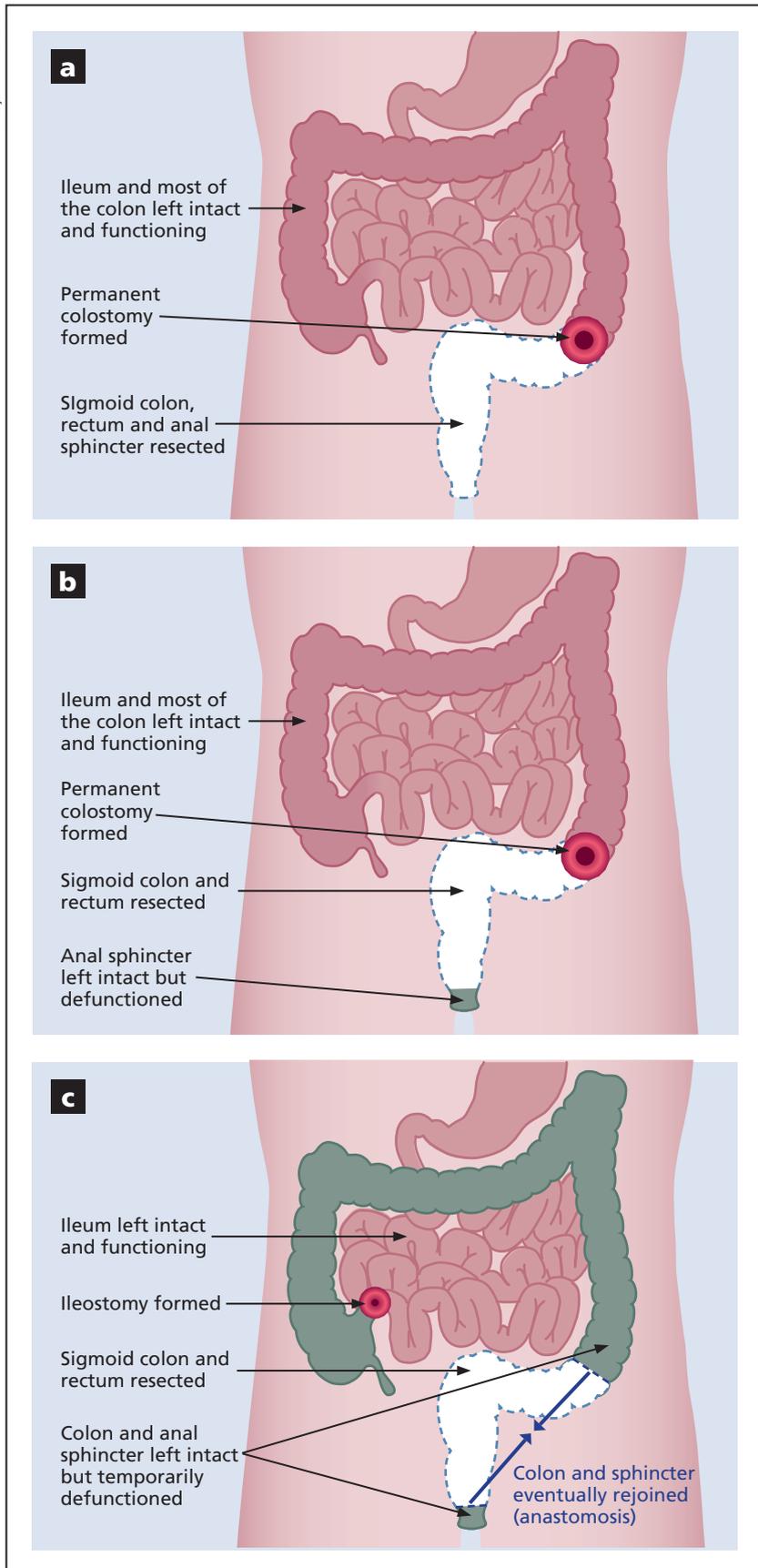


Figure 1. Surgical options for low rectal cancer: (a) abdominoperineal resection, (b) ultra-low Hartmann's procedure and (c) low anterior resection

The mainstay of treatment relies predominantly on conservative management of established symptoms following stoma reversal. Other treatments, such as transanal irrigation (TAI), have shown to be effective where uncontrolled bowel symptoms can be actively managed, resulting in improved continence scores and quality of life and the ability to control the time of defaecation (Collie and MacFarlane, 2013; Martellucci et al, 2018; Rosen et al, 2019). However, studies for TAI in LARS are limited. Sacral nerve stimulation has also demonstrated improvement in LARS symptoms (Eftaiha et al, 2017), although the procedure is costly and involves invasive surgery. A systematic review identified 21 studies on varying treatments for LARS, although it was deemed that these were of poor quality (Dulskas et al, 2018). Thus, there is a dearth of evidence-based information and no consensus on the treatment options or standardised patient pathways for LARS.

Background

West Hertfordshire Hospitals NHS Trust performs approximately 40 anterior resections each year for low rectal cancers. More than 60% receive a temporary ileostomy to cover a low anastomosis. Despite ongoing follow up of colorectal cancer patients over the 5-year post-operative period, in line with national guidelines, surgeons recognised that support in managing the myriad of bowel symptoms following ileostomy reversal was limited. Therefore, there was a requisite for introducing specified nurse-led clinics to ensure active management for this group of patients.

The Watford nurse-led LARS clinic

The nurse-led LARS clinic commenced in July 2018 with full support of the colorectal surgeons. There was a remarkable belief from patients that their symptoms were a normal consequence of the surgery, and many had fostered common coping and management strategies, including not eating to prevent bowel problems and using incontinence pads to get them through the day. The general feeling expressed by patients was dismay at the lack of agreement on effective treatment approaches. It was evident that the issue of bowel dysfunction needed to be addressed if long-term outcomes for patients were to be improved. The Watford LARS pathway was therefore established. Appointments were

set at 45 minutes and all commenced with a holistic assessment taking into consideration physical, emotional and social components. Effective holistic assessment can lead to improved communication and enhanced equity of care, tailored to the individual. As a result, this has the potential for improving patient satisfaction and potentially yields efficiency savings for the system through more personalised commissioning and supporting people to stay well and manage their own conditions (NHS England, 2016). Hence treatment was directed accordingly with techniques as seen in Box 1 for part of the bowel management plan: this pathway is aimed at patients who are 12 months post-stoma reversal and who may not have been seen in the clinic prior to stoma reversal.

Developing a compassionate therapeutic nurse–patient relationship based on trust and respect signified that patients felt able to discuss their concerns and be an equal partner in achieving wellbeing. While this concept clearly has a positive effect on patient outcomes, there is acknowledgement that skills and actions aimed at the amelioration of debilitating symptoms with time and commitment is fundamental (Bramley and Matiti, 2014).

It became apparent during clinic appointments that patients were questioning why treatments were not discussed prior to stoma reversal, and it was clear that the issue of bowel dysfunction needed to be approached in a different way. This, ideally, required an early-intervention process aimed at the prevention of symptoms rather than conservative management of established symptoms. The multidisciplinary team (MDT) identified and agreed that an early, dynamic, pre-stoma reversal method was necessary, and thus recommended that the nurse-led service advance towards this clinic structure.

Further development

The Watford LARS pathway, now established in trust policy, ensures that the senior nurse practitioner sees all patients who have anterior resection surgery (with a temporary ileostomy) in clinic, and at specific points in their care pathway (Box 2). Referral to the clinic is made either at the weekly MDT or via letter from the colorectal surgeon. Focus for the nurse-led LARS clinic is now mainly grounded around the pre-stoma reversal phase, aimed at prevention of symptoms rather

Box 1. Post-stoma reversal for patients of over 12 months

Initial treatment

- Assess the patient's understanding of their anterior resection and reversal surgery, identifying its impact on the bowel
- Review medical and surgical history (including any neoadjuvant or adjuvant pelvic radiation)
- Discuss management and coping strategies up to the appointment date
- Modify diet, promote regular eating and reduce and/or increase dietary fibres
- Consider use of loperamide and/or bulking agents
- Review defaecatory dynamics, toilet position and evacuatory techniques and ensure a regular toilet routine
- Ensure the patient has all contact details

Review at 6 weeks (if no improvement in bowel symptoms, treat with Qufora IrriSedo cone irrigation system):

- Introduce equipment to the patient and demonstrate and teach its use, including assembly and disassembly
- Order equipment for delivery to the patient at home (through Qufora Direct)
- Recommend it is used daily for 1 month until review by senior nurse practitioner
- Offer ongoing telephone support from senior nurse practitioner
- Offer support from Myqufora patient support service (www.myqufora.com)

Volume of water

- Commence irrigation with 200ml of warm water daily for effective bowel management and establishment of routine/regimen
- Increase to 300–400ml after 1 week if required, and continue to use daily for effective bowel management
- Increase to maximum of 500ml after 2 weeks if required, and continue to use daily for effective bowel management and establishment of routine/regimen

Follow-up

2 weeks after commencing irrigation

- Contact patient by phone
- Revisit the regimen
- Address any issues
- Encourage to persevere

6 weeks after commencing irrigation

- Contact patient by phone for a brief assessment of use
- Make further clinic appointment if there are any ongoing problems regarding regimen, supplies or volumes of water

3 months after commencing irrigation

- Contact patient by phone
- Make clinic appointment if required
- Repeat as above (at 6 weeks)

than ongoing management. This is designed to obtain optimal bowel control, consequently informing and empowering patients to be actively involved in their pre-operative preparation for stoma reversal. The pathway ensures that all patients are both tracked and supported from their anterior resection surgery up to and after reversal of ileostomy.

Initial contact is generally on the ward prior to discharge following the initial anterior resection surgery. This offers the patient a point of contact, support, reassurance and detailed

Box 2. Pre-stoma reversal pathway**Referral to the low anterior resection syndrome (LARS) clinic**

- Discharge letter of initial anterior resection surgery from consultant or referral via multidisciplinary team

Pre-stoma reversal appointment organised once gastrografin enema has been performed and no leak confirmed

- Full holistic assessment of relevant medical and surgical history and adjuvant therapies, particularly radiotherapy, expectations and understanding
- Explanation of previous anterior resection surgery and pending reversal surgery, including recovery in hospital and at home

Pelvic floor exercises using the irrigation system

- Explain the rationale for this regimen to the patient, including water temperature and expected results, both daily and following reversal surgery.
- Complete a digital rectal examination for explanation of pelvic floor exercises and tailor a regimen to the individual

Patient procedure for using the irrigation system

- Instil one pump of water (approximately 60ml) via the anus, while sitting on the toilet
- Withdraw the cone and hold/retain the water to commence pelvic floor/sphincter exercises as tailored to the individual
- Expel the water using defaecatory dynamics (somatic sensation, relaxation of the internal anal sphincter and use of abdominal muscles and the diaphragm)
- Dispose of cone (only) when completed—the pump can be used daily up to 30 days and then replaced
- Use once a day only and continue until stoma reversed

Preparation for reversal surgery

- Consider/discuss the expected initial bowel function following reversal surgery
- Explain the use of loperamide after reversal (initially and going forward)
- Explain the possible need for dietary modification
- Provide information sheets explaining reversal surgery, pelvic floor exercises and dietary advice
- Provide information booklets and contact details

Follow up after reversal surgery

- Once reversal surgery has taken place, stop pelvic floor exercises using the irrigation system for 2 weeks
- 2 weeks after reversal surgery, call patient to review bowel function
- 6 weeks after reversal surgery, see patient in clinic for detailed review of bowel function and, if any ongoing bowel control symptoms are identified, progress to Qufora IrriSedo Cone bowel irrigation as per *Box 1*

written information that explains that their care will continue to follow a planned course, while emphasising the importance of patient involvement in the process. Although this is early in the pathway, the National Cancer Strategy (2015) supports the concept by stating 'in order to achieve the very best outcomes and meet the needs of the patient requires a high quality modern service with stratified follow up pathways and support for patients to self-manage.' Furthermore, early intervention and the redesign of the Watford LARS pathway has the capability of attaining health benefits by improving the

patient experience and enhancing quality of life.

The introduction of the Qufora IrriSedo Mini irrigation system into the pre-stoma reversal preparation of the patient is an innovation within the new Watford LARS Pathway (*Figure 2*). This minimally invasive system allows the patient to instil approximately 60 ml of warm water and hold in their rectum, encouraging them to use pelvic floor exercise techniques and to gradually increase the time they can retain the fluid before expelling. Some patients may find this difficult in the first days of use, but over time they can usually extend their holding time. On expelling the water, defaecatory dynamics are promoted to ensure pelvic floor co-ordination. This process gives focus to isolating the pelvic floor, demonstrates improved ability in bowel control and time to defaecation after reversal surgery.

This regimen is now embedded into policy and is a requirement of patient management before a date for reversal surgery is agreed. All consultants are required to refer patients to the LARS clinic service immediately following anterior resection surgery. The weekly MDT provides a forum to ensure that gastrografin enema dates and outcomes can be discussed with the ongoing plan of care identified. Policy dictates the use of the Qufora IrriSedo mini-irrigation system for a minimum of 4 weeks prior to reversal; all patients are supported by the senior nurse practitioner with regular telephone and/or clinic contact maintained. There has only been one patient who has declined following pre-stoma reversal procedures.

Support for the pathway and the clinic from the senior colorectal surgeon has been pivotal in ensuring that this new approach has been developed and adopted where he continues to both monitor and have input into its ongoing development.

Results of nurse-led clinics

The nurse-led clinics have been evaluated using a service questionnaire. Although a crude evaluation with small numbers, it does show that the introduction of a nurse-led clinic is a major positive innovation in the pro-active prevention and management of potential bowel dysfunction in this group of patients.

The clinic has led to improvements in patient care, but more importantly to outcomes that have exceeded all expectations.

Post-reversal patient results

In total, 27 patients have been seen in the clinic, all of whom had their stoma reversed more than 18 months previously and had experienced one or more established LARS symptoms. Of the 27 seen, 18 were discharged with a median of three appointments (range 2–4) and completed the non-validated service questionnaire (Table 1). Of the 18, 12 were using the Qufora IrriSedo Cone system to manage their LARS symptoms (Figure 3), two declined the use of irrigation in spite of ongoing bowel problems, two went on to have a permanent stoma and two managed their symptoms with ongoing advice and support. A further six are being followed up in the clinic using the irrigation method and three are booked into the clinic for their first appointment.

Pre-stoma reversal patients

Some 17 patients have been seen prior to stoma reversal, all of whom were on the ward immediately following anterior resection. Of the 17, one had an anastomotic leak and was seeing the surgeons, one declined the use of irrigation and five were discharged 6 weeks following stoma reversal with no bowel dysfunction, having used the mini-irrigation system prior to reversal (Table 2). Of the five who used the mini-irrigation system, only one has continued to use the system once a week, although mainly for reassurance rather than bowel symptoms. Three are now booked for a gastrografin enema and seven were seen on the ward and were awaiting an appointment date for their gastrografin enema.

Results have been supported by testimonials from patients, with the following as an example:

'Your suggestions and advice are always very much appreciated. I must also thank you for recommending the Qufora system prior to my "reconnection" and removal of the ileostomy. Although at first I thought that I would never be able to hold the water for more than a few seconds, but with perseverance I did indeed manage to hold it for 15 minutes before easily expelling it. There is absolutely no doubt that this system helped exercise my sphincter and bowel. Without this system my recovery and ability to deal with the problems post reconnection would have been far worse. At 12 weeks after

reconnection, my control is very good and I'm sure this is due to both Qufora and your advice.'

Future

Since commencing the clinics and evaluating the service, it is clear that further development is required. The plan is to develop a database, which will include all patient information and questionnaires. As a result, reports can be generated and analysed at any given time. A validated questionnaire will be adopted within the clinics to ensure the service questionnaires are supported by objective data.



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Figure 2. Qufora IrriSedo Mini irrigation system

Table 1. Questionnaires of discharged patients

Satisfaction parameter (0=worst, 10=best)	Pre-reversal (n=5)	Post-reversal (n=18)
Improvement since attending the clinic	9	9.7
Quality of education from the nurse	10	9.8
Relationship with the nurse	10	9.8
Opinion of pelvic floor exercises with irrigation	9.4	n/a
Satisfaction level (percentage)		
Extremely satisfied	60%	72%
Satisfied	40%	28%
The nursing clinic has helped (percentage)		
Yes	100%	100%
Satisfaction parameter (0=worst, 10=best)	Pre-treatment (n=18)	Post-treatment (n=18)
Confidence in bowel management	5	8.7

Conclusion

The development of this nurse-led LARS clinic has ensured that all patients undergoing anterior resection surgery are monitored, from the date of surgery, by a senior nurse who can provide both support and advice, while encouraging and empowering patients to be actively involved in their own care.

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Figure 1. Qufora IrriSedo Cone irrigation system

CPD reflective questions

- Consider the information a patient may require prior to stoma reversal
- Reflect on treatment advice post-stoma reversal
- What are the advantages of introducing a nurse-led low-anterior resection syndrome (LARS) service?