

Low Anterior Resection Syndrome in Rectal Cancer: The Importance of a Complete Clinical Approach

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Abstract

During the last decades, advances in surgical techniques, radiotherapy and chemotherapy have significantly increased survival and reduced local recurrence in middle and lower rectal cancer, avoiding a definitive colostomy; However, this momentous medical progress has not been accompanied by an improvement in the functional results of patients undergoing conservative sphincter surgery, being the set of defecatory symptoms after rectal resection, known as low anterior resection syndrome, an Invalid sequela for the vast majority of patients.

Keywords: *Low Anterior Resection Syndrome; Rectal Cancer; LARS Score*

Introduction

One of the most relevant advances in colorectal surgery is the increasing use of procedures with sphincter preservation, with low anterior resection (RAB) plus total mesorectal excision (ETM) being the standard treatment for most patients with a of middle and lower rectum cancer.

Once the mutilation of the definitive colostomy has been overcome, the problem of intestinal dysfunction appears and its impact on the quality of life is known as low anterior resection syndrome (LARS), a frequent problem, undervalued, diagnosed late and without validated tools.

Objective of the Study

The objective of this review is to synthesize the updated bibliographic evidence regarding the epidemiology, pathophysiology, clinical characteristics and correct evaluation of LARS in patients with operated rectal cancer.

Definition

There is no consensus definition for LARS. Bryant, *et al.* Propose to define it as the “disorder of intestinal function after rectal resection, which leads to a detriment in the quality of life” [1]. It is currently considered that LARS corresponds to a wide set of intestinal symptoms that manifest after conservative sphincter rectal surgery, a surgical technique that is performed today in more than 80% of patients with rectal cancer [2].

Epidemiology

It is practically impossible to ensure that after rectal resection the patient will have normal bowel function. The available evidence indicates that LARS occurs in more than 90% of cases [1], in 41% severely [3] and approximately 50% maintains intestinal dysfunction even 14 years after surgery [4,5].

It is important to highlight that, of patients with rectal cancer resection, 38.8% live with chronic pain in the pelvis or lower extremities [6] and 10% - 35% have associated urological and/or sexual symptoms [7], mainly urinary incontinence, erectile dysfunction, retrograde ejaculation and dyspareunia. In a systematic review of the literature, 30% - 40% of patients who reported being sexually active in the preoperative period became inactive after surgery [8].

Pathophysiology

Although the exact pathophysiology of LARS is not yet well established, most studies agree with the hypothesis of multifactorial origin, which we can divide into three main areas:

- 1. Dysfunction of the neorectum:** First and most obviously, it is the total or partial loss of the rectal reservoir which leads to a decrease in the retention capacity of feces and/or gases, difficulty in discriminating the content that reaches the remnant rectal and loss of the rectoanal inhibitory reflex. At the same time, during the RAB an extensive dissection of the pelvis is performed to achieve TMD, which leads to deterioration in the pelvic static and potential loss of fundamental nerve connections to preserve adequate function. As a result we will have a neorect with abnormal biomechanical properties that fails to adapt to the basic needs of the patient [9].
- 2. Colonic dysmotility:** Patients with LARS generally present with an exacerbated gastrocolic reflex associated with an overactive post-prandial response of the neorectum [10], with reduction of inhibitory stimuli and increased peristaltic movements of the colon, theoretically secondary to autonomic denervation of the descended colonic segment [11].
- 3. Sphincter alteration:** The dysfunction of the EAI can be due to denervation secondary to the pelvic dissection or sequel of the anatomical damage after the use of endoanal circular stapler, which Farouk, *et al.* they can demonstrate with endosonography in 18% of cases [12]. EAE dysfunction is usually a sequel to pudendal neuropathy after a wide dissection in the infra-elevating plane [13]. Both sphincters are susceptible to histological and functional changes generated by radiation [14,15].

Risk factor's

The patients most likely to suffer from LARS are those under 65 (there is a colonic dysmotility associated with aging that reduces urgency and bowel frequency), female (greater negative impact on the pelvic floor throughout life), with a history of neoadjuvant radiotherapy (ischemia and fibrosis of the rectal remnant, sphincter damage, neorectal hyposensitivity), history of rectal tumor or colorectal anastomosis less than 5 cm from the anal margin (implies a pelvic dissection and a smaller rectal remnant), need for protective derivative ileostomy (intestinal dysfunction secondary to colonic mucosal atrophy), and history of pelvic sepsis secondary to anastomotic dehiscence (reduced rectal distensibility due to inflammation, fibrosis and/or stenosis) [3,21].

Clinical characteristics and evaluation

A systematic review of LARS of 128 selected studies published between 1986 and 2016, revealed the use of 18 different instruments to evaluate post-operative bowel function and the existence of more than 30 described symptoms, the most frequently reported were fecal incontinence (in the 97% of the articles), increased frequency of bowel movements (80%), defecation urgency (67%), evacuation dysfunction (47%) and alteration in the discrimination between gases and feces (34%) during a follow-up period from 4 weeks to 14.6 years [16].

The patient to control their symptoms will resort to the permanent use of medication, dressings on underwear and dietary restriction, generating a negative impact on social life, sexual function and work capacity. This situation maintained over time can lead to depression,

social isolation and total loss of independence [17]; In summary, we will have a patient very grateful for the survival and low percentage of local and distant recurrence that we are delivering with the advancement of surgical techniques and neoadjuvant therapy, even only with small abdominal scars and no definitive ostomy, but deeply limited for resume his normal life.

As clinicians, we tend to classify LARS into two categories, on the one hand, patients with fecal incontinence, increased defecation frequency and urgency, and on the other hand, patients with constipation and incomplete emptying. However, this classification is not valid since an important percentage presents both groups of symptoms.

Another limitation in the study of this pathology is that most of the publications referring to LARS do not use a score, and when reviewing in detail the works that use an objective method of assessment, the one most frequently used is the Wexner scale, thus confirming, the tendency that exists to over estimate anal incontinence, leaving highly disabling symptoms such as clustering (incomplete evacuation that requires returning to the bathroom within a period of less than 1 hour from the previous time), defecation urgency and soiling (fecal fouling).

In this context, Emmertsen K., *et al.* they develop the LARS score [18], considered today the best instrument for evaluating this syndrome, mainly due to the direct correlation between the score assigned to each response and the impact on quality of life [19]. It is a quick questionnaire, easy to understand, consisting of five items, giving greater relevance to the symptoms of clustering and defecation urgency, as it has a greater negative impact. The maximum score is 42 points, classifying patients in LARS major (30 to 42 points), LARS minor (21 to 29 points) and without LARS (0 to 20 points) (Table 1). Currently the LARS score is validated to international level [20] (Table 2).

1. Are there times when no pu and to control the gases through the anus?	Points
Never	0
Yes, < 1 time per week	4
Yes, > 1 time per week	7
2. Have you ever presented accidental loss of liquid stools?	
Never	0
Yes, <1 time per week	3
Yes,> 1 time per week	3
3. How often do you go to the bathroom to defecate?	
> 7 times per day (24 hours)	4
4 - 7 times per day (24 hours)	two
1 - 3 times per day (24 hours)	0
< 1 time per day (24 hours)	5
4. Have you had to return to the bathroom to defecate before one hour after the last bowel movement?	
Never	0
Yes, <1 time per week	4
Yes,> 1 time per week	7
5. Have you ever felt such an urgent need to defecate that you must hurry to get to the bathroom?	
Never	0
Yes, <1 time per week	eleven
Yes,> 1 time per week	16

Table 1: Lars score [18].

Without Lars	Lars Minor	Lars Larger
0 - 20 Points	21 - 29 Points	30 - 42 Points

Table 2: Cultural adaptation in Spanish of the LARS score.

Conclusion

Intestinal dysfunction after a proctectomy, known as LARS, is a practically inevitable sequel, which is usually associated with sexual and/or urinary dysfunction, chronic pain, high costs and a significant alteration in the quality of life. It is essential to achieve an objective evaluation of each patient, considering the set of symptoms associated with this syndrome, in order to deliver a correct multidisciplinary management on time.

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