

Low anterior resection syndrome (LARS): cause and effect and reconstructive considerations

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Abstract Between 25 and 80 % of patients undergoing a low or very low anterior resection will suffer postoperatively, from a constellation of symptoms including fecal urgency, frequent bowel movements, bowel fragmentation and incontinence, collectively referred to as the low anterior resection syndrome (LARS). The etiology of LARS is multifactorial with the potential of sphincter injury during anastomosis construction, alterations in anorectal physiology, the development of a pudendal neuropathy, and a lumbar plexopathy with exacerbation of symptoms if there is associated anastomotic sepsis or the use of adjuvant and neoadjuvant therapies. The symptoms of LARS may be obviated in part by the construction of a neorectal reservoir which may take the form of a colonic J-pouch, a transverse colectomy, or a side-to-end anastomosis. This review outlines the factors contributing to LARS symptomatology along with the short- and medium-term functional results

of comparative trials with the different types of neorectal reconstructions.

Keywords Anterior resection syndrome · Fecal incontinence · Soiling

Introduction

Colon and rectal cancers are the 3rd most frequent cancers in both sexes followed by cancer of the prostate in males, breast cancer in females, and by lung cancer in both genders; each showing similar trends in cancer-specific mortality [1]. Rectosigmoid cancer is the most common tumor of the gastrointestinal tract with the first anterior resection with primary anastomosis being performed with an indwelling rectal tube acting as a stent in 1910. In the early part of the twentieth century, the three-stage surgical procedure was utilized for anastomotic protection with the first sigmoid resection and primary anastomosis without anastomotic protection being reported in 1930 [2]. The use of end-to-end anastomotic staplers during the 1970s for neorectal anastomosis revolutionized rectal reconstructive surgery, permitting more widespread sphincter preservation with an acceptable mortality, morbidity, locoregional recurrence, and postoperative bowel function [3, 4] as well as reducing the use of abdominoperineal excision worldwide [3, 5].

The introduction of routine accurate high-resolution preoperative rectal cancer imaging to supplement standardized rectal cancer resection with total mesorectal excision (TME) [6, 7] provides an opportunity for tailored treatment with selected use of neoadjuvant therapies resulting in effective tumor downstaging [8, 9] and providing greater facility for sphincter preservation [10]. This

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