



Organ sparing surgery for rectal cancer: functional outcome and quality of life

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Total mesorectal excision (TME) with anterior rectal resection or abdominal perineal resection after neoadjuvant radio-chemotherapy, represents the standard of care for patients with advanced rectal cancer (1,2). Over the last decade preoperative radio-chemotherapy has gradually replaced postoperative treatment allowing a better local tumor control and pathological complete response in up to 20% of patients (3,4). Indeed, due to the increased rate of pathological complete response after neoadjuvant radio-chemotherapy, local excision, particularly transanal endoscopic microsurgery (TEM), has been investigated as an alternative to radical surgical resection with TME (5-7) in order to achieve the same cancer specific outcome without the mortality and morbidity of rectal resection. Preliminary results showed that organ-preserving treatments for complete responders, and also for near-complete responders, after neoadjuvant chemo-radiation, are safe and oncologically reliable, providing that selection criteria and strict follow-up is applied (8-10). Actually the neoadjuvant treatment followed by radical rectal resection, besides ensuring a reliable pathological tumor stage, and a clearly defined need for adjuvant therapies, entails a good prognosis with low local recurrence rate and good long-term survival. However, radical rectal resection is hampered by high postoperative morbidity and mortality, and, over the long-term, severe functional sequelae including bowel, sexual, and urinary disturbances, and the risk of a permanent stoma, that can have a major impact on quality of life. Impairment of anorectal function after rectal cancer resection is mainly caused by reduced capacity of the neorectum, damage to the

innervation of the lower intestinal tract, vascular toxicity, and damage to the anal sphincter muscles and pudendal nerves (11,12). Approximately 60% of patients experience some degree of fecal incontinence and at least one-third of patients experience symptoms of urgency, frequency, soiling, and clustering, known as the “low anterior resection syndrome” (LARS). A LARS score has been recently demonstrated to be a reliable tool in clinical practice, also considering the high correlation between the LARS score and quality of life (13). Since the quality of life of rectal cancer patients is emerging as a priority in cancer care, anorectal and urogenital function should always be assessed when evaluating the results of surgical techniques.

The paper of Ghiselli and coworkers introduces new insight into this theme and represents one of the few investigations on functional results of TEM after radio-chemotherapy (14). The authors studied a group of 84 patients with rectal cancer staged at baseline as T3-T4N0, who achieved a complete clinical response after neoadjuvant treatment; patients with T2N0 tumors, for whom radical resection would have necessitated an abdominal-perineal resection, were also included. This group represents 18.9% of all rectal cancer patients who underwent neoadjuvant chemo-radiation over a 7-year period. Bowel continence was assessed with the Cleveland Clinic Fecal Incontinence Score and quality of life with the Fecal Incontinence Quality of Life Index Scale, before and 1 year after TEM. Fourteen patients (22%), who were fully continent before surgery, experienced some degree of incontinence after surgery, and a total of 23 patients reported continence

worsening, with a median variation of 4 points, while no difference was observed in quality of life with respect to preoperative evaluation. Notably, patients with impaired continence were significantly older and of female gender, but no difference was observed regarding the distance of the tumor from the anal verge, the tumor dimension or the operative time. Unfortunately, other symptoms of the “LARS”, such as incomplete evacuation and increase stool frequency, that have been demonstrated to affect the quality of life, were not assessed (15). As far as the surgical and oncological results is concerned, only minor complications were observed in 9.5% of patients, and, after a median follow-up of 48 months, no tumor recurrence was noted.

In the global assessment of this new approach several items should be taken into account. First of all are the oncological and perioperative outcomes. Safety is always the most important issue for a new technique, and there is consensus that mortality and morbidity are significantly reduced after TEM when compared to rectal resection, as well as hospital stay, blood loss and duration of surgery, even after preoperative radio-chemotherapy (5). In a study by Coco *et al.* in 25 patients with rectal cancer who underwent TEM after chemo-radiation, grade I and II complications, according to Clavien-Dindo classification, occurred in 18.2% of patients respectively with no grade III complications and no reoperation or hospital readmission (16). Other studies agreed about the benefits with regard to short-term outcomes (17,18). The most controversial issue remains oncological adequacy. In a review, including 237 patients with T2–3 rectal tumors who underwent neoadjuvant CRT followed by local excision, it is shown that, when complete pathological response was achieved (ypT0), local recurrence was 0% and systemic recurrence was 4% (19). Nevertheless, even if these primary results are promising and even if it seems that neoadjuvant radio-chemotherapy and TEM could be offered to selected patients with advanced rectal cancer, without affecting the prognosis, this treatment should still remain in the area of clinical studies before being regarded as standard practice. Moreover little is still known about the long-term quality of life and the risk of sexual and urinary dysfunctions related to this procedure.

Meanwhile, waiting for more clearly defined indications and guidelines for organ sparing surgical procedures, functional outcomes, possibly including bowel, sexual and urinary functions, should also be deeply studied in order to find the best approach and to help to tailor the most appropriate treatment for each single rectal cancer patients.

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