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Functional Outcome of Sphincter Saving Procedure

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Authors' contributions

This work was carried out in collaboration among all authors. Author MSA designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors AEHA and ASAS managed the analyses of the study. Author AZG managed the literature searches. All authors read and approved the final manuscript.

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Original Research Article

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ABSTRACT

Introduction: Intersphincteric resection of low rectal tumors.is a surgical technique extending rectal resection into the intersphincteric space. This procedure is performed by a synchronous abdominoperineal approach with mesorectal. Excision and excision of the entire or part of the internal sphincter.
Aim of the Work: Is to evaluate the functional outcome of sphincter sparing.
Patients: 10 patients who meet the criteria of ISR possibility and candidates for sphincter saving procedures this study was conducted at Beni Suef university hospitals between January 2019 and March 2020.
Methods: Total ISR involves complete excision of the internal sphincter. The cut line is at the intersphincteric groove. B. Subtotal ISR involves partial excision of the internal sphincter. The cut line is between the dentate line and the intersphincteric groove. C. Modified partial ISR the cut line is below the dentate line on one side of the tumor. On the opposite side of the tumor, the cut line is above the dentate line. D Partial ISR the cut line is at or above the level of the dentate line.
Results: Showed that out of 10 patients underwent ISR, 6 patients were highly satisfied with Grade I continence according to Kirwan's grade. While 4 patients were Grade II, i.e.: Incontinent to flatus.

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Conclusion: In low rectal cancer, the sphincter saving have certainly demonstrated an indisputable good functional outcome, in terms of stoma avoidance and adequate continence.

Keywords: Rectal cancer; sphincter; ISR; rectal resection; Kirwan's grade; physiotherapy.

1. INTRODUCTION

There has been.an evolution in the treatment of rectal cancer.in recent times. A few decades ago, rectal cancer treatment was solely a surgical endeavor. Nowadays, it has evolved into therapy involving several disciplines. Nevertheless, surgery remains the cornerstone of curative treatment [1]. The incorporation and widespread use of total mesorectal excision (TME) as the standard mode of surgical resection of adenocarcinoma of the rectum has been the most important surgical development.in outcome's improvement for this disease [2] Although Miles abdominoperineal resection is the "gold standard" for the treatment of low rectal neoplasms [3] which means a permenant colostomy, restorative resection may now be possible with equivalent oncologic disease control and survival [4] A normally distensible rectum is able to maintain low intraluminal pressures despite large volume [5]. If this capacity deteriorates, a smaller quantity of faeces will result in higher pressure, causing urgency and eventually incontinence.

This mechanism is clearly evident in patients with ulcerative colitis [6], radiation proctitis [7] or after sphincter-saving operations [8]. Decreased compliance has been noted in many patients with FI [9,10]. However, it is not clear whether this fact always represents a cause or whether it may be a consequence of incontinence itself.

1.1 Patients

This study has been conducted at Beni-Suef university hospital – Beni-Suef University between jan2019 and March 2020 and diagnosed with low rectal cancer (extraperitoneal) with clinical stages II (cT3-4, N0, M0) and III (cT1-4, N+, M0).

1.2 Inclusion Criteria

1- Low rectal cancer: distal tumor edge within 3-6 cm from the anal verge.
2- Disease stage: stage II and stage III.
3- Satisfactory preoperative sphincter function and continence

1.3 Exclusion Criteria

1- Unsatisfactory preoperative sphincter function and continence.
2- Disease stage: stage I

2. CONTRAINDICATIONS OF ISR

1- T4 lesions (tumors invading the visceral peritoneum or adjacent organs or structures: including puborectalis).
2- Unsatisfactory preoperative sphincter function and continence.
3- Tumors invading the external anal sphincter (EAS) (i.e. T3).

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Patients: (10 patients) who meet the criteria of ISR possibility and candidates for sphincter preserving procedures.

3. METHODS

3.1 Preoperative Concomitant Chemoradiotherapy (CCRT)

3.1.1 Surgical technique

3.1.1.1 ISR candidates

Total ISR involves complete excision of the internal sphincter. The cut line is at the intersphincteric groove. B. Subtotal ISR involves partial excision of the internal sphincter. The cut line is between the dentate line and the intersphincteric groove. C. Modified partial ISR the cut line is below the dentate line on one side of the tumor. On the opposite side of the tumor, the cut line is above the dentate line. D Partial ISR the cut line is at or above the level of the dentate line [4].

Surgery was done after an interval period of about 6-8 weeks after the end of chemoradiation allowing the maximum response of CCRT to be obtained.

Surgical procedures (ISR for the 10 ISR candidates after CCRT were performed according to the methods described by Schiessel and his colleagues [11,12].

4. RESULTS

4.1 Continence State According to Kirwan's Grade

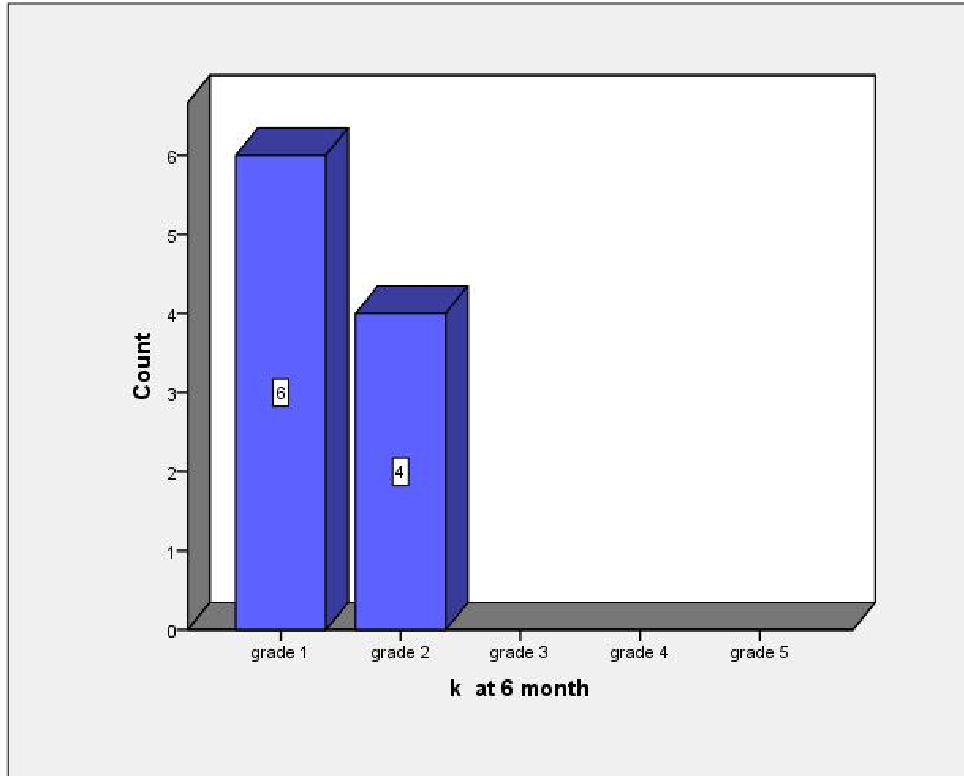

Fig. 1. Continence grade according to Kirwan's

5. DISCUSSION

Although improved outcome is the ultimate goal for the surgical a treatment of rectal cancer, there has recently been increased interest in the quality of life of patients following radical rectal resection. Performing a rectal resection according to the principals of TME with ANP substantially reduces the incidence of undesired effects [13]. In fact, a recent series reported that even in presence of postoperative fecal incontinence, genitourinary dysfunction, and sexual dysfunction, patients were satisfied with their quality of life following rectal resection [14] The main aim of the ISR technique is to provide a better quality of life keeping the patient continent compared to the permanent stoma in APR.

Assessment of the continence after ISR was done using Kirwan's grade, and the results showed that out of 10 patients underwent ISR, 6 patients were highly satisfied with Grade I continence according to Kirwan's grade. While 4 patients were Grade II, i.e. Incontinent to flatus. This result was not the same during the first 5 months owing to the presence of protective stoma which was usually closed within three months maximally and the patients needed a period for physiotherapy to regain their anal sphincter function.

In Gawad and his colleagues' study, 70 %of patients were kirwan's grade one, 20% were Grade II, while 10 % were Grade 4 with frequent major soiling. The above mentioned results were obtained after 12 months [15].

Another subjective study conducted by Bujko and his colleagues which included 100 patients after ISR who subjected into a questionnaire about the continence , anal stenosis , the need to use enema, feeling of incomplete defecation and the overall life quality reduction due to incontinence , the results showed that 44 % were highly

satisfied with their life style after the operation , 38% reported slight reduction in their quality of life , while 18% reported a" very much reduction " in their quality of life according to their own words [16].

6. CONCLUSION

In low rectal cancer, the sphincter saving have certainly demonstrated an indisputable good functional outcome, in terms of stoma avoidance and adequate continence. We recommend futher follow up to be able to assess the procedure.

CONSENT AND ETHICAL APPROVAL

We got approval from the ethical committee in our faculty prior to start the study with a written informed consent from every patient.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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