"Skip the stoma, opt for delayed colo-anal anastomosis- the smooth move in low anterior resection surgery!"

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SUMMARY

Delayed CAA without a diversion ileostomy is an alternative to immediate CAA for management of low rectal cancer. Traditionally, temporary diversion ileostomy is used to mitigate complications such as anastomotic leaks. However, Turnbull-Cutait introduced a two-stage approach in 1961 that eliminates the need for an ileostomy. Two cases of low rectal adenocarcinoma are described. Both patients underwent neoadjuvant chemotherapy, laparoscopic ultralow anterior resection and trans-anal colonic pull-through, followed by delayed CAA within 3-5 days. Both recovered uneventfully with preserved sphincter function. Histopathology revealed early-stage disease (T1N0 and T2N0). Recent literature suggests that delayed CAA offers outcomes comparable to immediate CAA in terms of pelvic morbidity, anastomotic leakage and function while reducing the need for diversion ileostomy. Advantages include improved quality of life, elimination of stoma-related complications, cost savings and shorter recovery times.

INTRODUCTION

Colorectal cancer ranks as the third most prevalent cancer in men and the second most common cancer in women globally. The incidence of colorectal cancer exhibits considerable geographical diversity, with a notable surge in its occurrence observed in various Asian countries, including Malaysia. The overall incidence rate in Malaysia stands at 21.32 cases per 100,000 individuals, emphasizing the significance of understanding and addressing the escalating trend of colorectal cancer in this region.[1,2]

The prevailing standard of care for the surgical management of low rectal cancer involves low anterior resection, TME and CAA.[3] Given that the incidence of anastomotic leak is relatively low among the majority of patients, it is imperative to recognize that the implementation of loop diversion ileostomy does not preclude the occurrence of additional complications. Furthermore, it is noteworthy that up to 25% of initially intended temporary ileostomies may undergo a transition to a permanent stoma.[4]

The concept of delayed colo-anal anastomosis subsequent to rectal surgery was originally introduced by Turnbull and Cutait in the context of Hirschsprung's disease, Chagas disease affecting the upper rectum and sigmoid. This technique involves a two-stage operative approach. In the initial stage, following rectal resection, a segment of the colon measuring 5-10cm is transanally exteriorized and maintained externally. Subsequently, in the second stage, conducted at mean of 7 days later (range 5-10 days), the externalized colon is sectioned, and hand sewn CAA anastomosis with interrupted absorbable suture.[5] The primary aim of employing this technique is to escape morbidity of diversion ileostomy.[6]

CASE PRESENTATION

Case 1

The case involves an elderly woman with chronic per-rectal bleeding. A colonoscopy revealed a low rectal tumour with histological study proven to be well-differentiated adenocarcinoma. Pre-operative Wexner score was 0. Baseline CEA was normal, and radiological staging conclude T3N0M0 tumour. In a view of locally advanced rectal cancer, neoadjuvant chemoradiotherapy Xelox regime for 6 cycles was given. A laparoscopic ultralow anterior resection with trans-anal colonic pull through was performed without an ileostomy as depicted in Figure 1. After 3 days, a delayed hand sewn trans-anal CAA was completed without complications as illustrated in Figure 2. The patient was discharged well with preserved sphincter function. HPE indicated T1N0 disease with no need for adjuvant therapy. Subsequent surveillance follow-up was uneventful with functional Wexner score 1. Patient was pleased as she avoided having stoma and did not require any additional surgeries.

Case 2

A senior gentleman with a medical history notable for stage 1 low rectal adenocarcinoma, having undergone Transanal Minimally Invasive Surgery (TAMIS) three years prior, presented with per rectal bleeding. Colonoscopy revealed a recurrent adenocarcinoma in the low rectum, confirmed by HPE. Pre-operative Wexner score was 0. Imaging studies indicated locally advanced low rectal cancer T3N0M0, lead to the decision for neoadjuvant chemoradiotherapy. Subsequently, the patient underwent laparoscopic ultra-low anterior resection with trans-anal colonic pull-through. Hand sewn delayed CAA was performed five days later, contributing to the patient's uneventful recovery with preserved sphincter function. HPE revealed T2N0 disease, and follow-up assessment during surveillance showed no concerns. Patient expressed satisfaction with Wexner score of 2, relieved by the absence of stoma and need for further surgical procedures.

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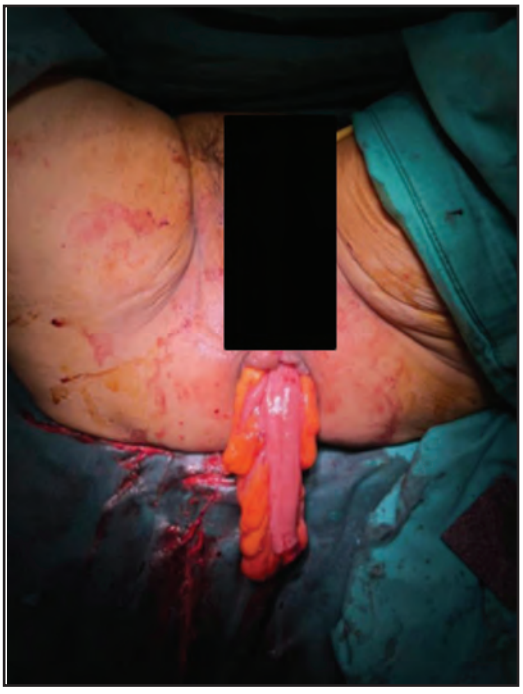

Fig. 1: Colonic segment of trans-anal pull through

Fig. 2: Post hand sewn colo-anal anastomosis

DISCUSSION

The selection criteria for this surgical approach include histologically confirmed adenocarcinoma of low rectum, with tumour located within 5 cm from the anal verge and a maximum primary tumour length of 5 cm. Candidates must demonstrate good anal function, as assessed by Wexner incontinence score < 5. Patients with recurrent rectal cancer or a history of prior colorectal surgery are excluded. Comprehensive preoperative evaluations, including colonoscopy and tumour staging, are essential. Additionally, prehabilitation to optimize patient's physiological status is undertaken to enhance the surgical outcomes.

Contemporary literature suggests that the delayed implementation of CAA subsequent to low anterior resection produces outcomes on par with immediate CAA. A randomized control trial conducted by Sebatiano et al. in 2020 revealed through a comprehensive study that pelvic morbidity, anastomotic leakage, and functional results were comparable within a 30-day composite post-operative complications period.[7] In particular to this technique, possible anastomotic leak, pelvic abscess, necrosis of the colonic pull-through segment, resulting in reoperation or stoma creation was reported.[8] In the two cases presented, no surgical complications of failure were noted. Both patients recovered uneventfully with acceptable postoperative Wexner score without need for any additional interventions.

The anastomosis is typically performed 5-7 days after the colonic pull through, though in some minority studies they even perform it as early as 3 days. This interval allows the colon to stabilize and form adhesions, reducing the risk of leaks while maintaining viability.[7,8] Currently, there is insufficient evidence or research to establish the optimal timing for delated CAA. In this present case series, one patient underwent anastomosis on postoperative day 3 and another on postoperative day 5, both with favourable outcomes.

The incorporation of a diversion ileostomy during low anterior resection has proven effective in reducing both the incidence and morbidity associated with anastomotic leakage; however, this intervention introduces its own set of complications related to the stoma. It is imperative to conduct a thorough examination of the morbidity and mortality associated with diversion ileostomy, considering factors such as dehydration due to heightened stoma output, infectious complications, herniation, obstruction, haemorrhage, and skin excoriation.[4] The closure of an ileostomy also presents inherent potential complications with overall rate of 16.4%, including ileus, intestinal obstruction, wound infection, and cardiopulmonary complications. It is noteworthy that the implementation of delayed CAA has been associated with a diminished likelihood of necessitating a diversion ileostomy. This not only positively impacts the patient's quality of life but also serves to avert complications associated with ileostomy without compromising oncological and functional outcomes.

The utilization of delayed CAA procedure, by circumventing the need for temporary stomas, may offer potential advantages in diminishing the incidence of permanent stomas when compared to the conventional approach of standard CAA coupled with diverting ileostomy. Given the decreased postoperative morbidity associated with omitting stoma closure following radical surgery, there is a potential for a reduction in the direct cost of hospital admission. However, it is essential to acknowledge that formal research and comprehensive studies addressing the cost-benefit analysis especially hospital length of stay of this procedure

remain limited, necessitating further in-depth exploration and detailed investigation.

Presently, there is a scarcity of comparative studies evaluating delayed CAA against the conventional approach of immediate CAA accompanied by diversion ileostomy in low anterior resection. Additionally, on-going research interest persists in evaluating functional outcomes, incorporating metrics such as the Wexner incontinence score and the Low Anterior Resection Syndrome (LARS) score.

CONCLUSION

Based on current data, delayed CAA generally does not elevate the risk of post-operative morbidities when compared to the standard approach of immediate CAA accompanied by diversion ileostomy. This suggests that delayed CAA could be deemed a viable alternative strategy, allowing for the avoidance of a temporary ileostomy following low anterior resection for low rectal cancer. The advantages of circumventing diversion ileostomy and its associated complications, coupled with the absence of an increased post-operative morbidity rate, position this technique as a prospective candidate for standard practice in the foreseeable future.

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