



# Successful management of lower rectal carcinoma recurrence on perineal pseudo-continent colostomy: A case report and review of literature

## Perineal psödo-kontinan kolostomi üzerinde alt rektal karsinom rekürrensini başarılı tedavisi: Bir olgu sunumu ve literatürün gözden geçirilmesi

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### Abstract

Recurrence of lower rectal carcinoma on perineal pseudo-continent colostomy is rarely reported in the literature. It presents a real challenge for the physician. The aim of this case report was to document an exceptional recurrence and how to manage it.

A 56-year-old man presented with stage II adenocarcinoma of the lower rectum. He received concomitant chemoradiation followed by abdominoperineal resection with perineal pseudo-continent colostomy. Three years later, he developed a local recurrence of his prior adenocarcinoma, on the perineal pseudo-continent colostomy. He underwent wide excision, followed by reconstruction with a rectus abdominis myocutaneous flap with an inferior pedicle and an oblique skin paddle. He underwent adjuvant chemotherapy. The patient is free of disease with three years follow up.

Extended resection should be considered as an initial treatment for locally recurrent rectal cancer.

Keywords: rectal cancer, recurrence, colostomy, reconstructive surgical procedures.

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### Öz

Perineal psödo-kontinan kolostomi üzerinde alt rektal karsinomun rekürrensi literatürde nadiren bildirilmektedir ve hekimler için gerçek bir zor durum oluşturmaktadır. Bu çalışmada, rektum kanserinde nadir bir rekürrens ve yönetimi sunulmuştur.

56 yaşında bir erkek hasta alt rektum yerleşimli evre II adenokarsinom ile başvurdu. Eş zamanlı kemoradyoterapi ve ardından perineal psödo-kontinan kolostomi ile abdominoperineal rezeksiyon yapıldı. Üç yıl sonra, perineal psödo-kontinan kolostomi üzerinde önceki adenokarsinomunun lokal rekürrensi gelişti. Hastaya geniş eksizyon uygulandı, ardından rektus abdominis miyokutan flebi ile inferior pedikül ve oblik cilt adasıyla rekonstrüksiyon yapıldı. Hasta adjuvan kemoterapi aldı. Hasta 3 yıllık takip süresinde hastalısız olarak izlenmektedir. Kapsayıcı bir rezeksiyon, lokal rekürren rektum kanseri için ilk tedavi olarak düşünülmelidir.

Anahtar Sözcükler: rektal kanser, rekürrens, kolostomi, rekonstrüktif cerrahi işlemler.

## Introduction

The management of ultra-low rectal cancer less than 2 cm from the dentate line is still challenging and one of the reasons is the lack of definition and standardization of surgery in low rectal cancer. Sphincter preservation is a major concern in cancer treatment. There is only two procedures: an intersphincteric resection with a coloanal anastomosis and abdominoperineal resection (APR) with a definitive iliac colostomy or perineal pseudo-continent colostomy (PPCC) [1]. Local recurrence of lower rectal cancer is difficult to treat, may cause severe and disabling symptoms, and usually has a fatal outcome.

We present a case of local recurrence of rectal adenocarcinoma on PPCC. This case presented a challenge for the oncologic surgeon, reconstructive surgeon, and oncologist. We reported how we did manage this rare entity and its oncologic outcomes.

## Case report

We present the case of a 56-year-old male patient with adenocarcinoma of the lower rectum. The tumor was situated 1 cm from the anal ring and has been classified as T2N0M0 of the TNM classification.

He underwent concomitant radiochemotherapy. He received a capecitabine-based chemotherapy regimen at 1250 mg/m<sup>2</sup>, 2 doses per day, and 2 weeks per 3. The radiotherapy regimen consisted of pelvic irradiation (45 Gy total dose) in 25 fractions over 5 weeks daily, in a dose of 1.8 Gy per session. The patient underwent APR with total mesorectum excision and a PPCC.

The histological exam showed a moderately differentiated adenocarcinoma with the presence of vascular embolus. The tumor measured 5 cm in its greatest axis. It was right anterolateral, with a circumferential margin greater than 1 mm. The lymph node dissection brought back 12 lymph nodes that were all negative. The tumor was classified as ypT2N0M0.

The patient did not undergo adjuvant chemotherapy. He has been regularly followed up.

Three years later, he presented a prolapsed mass situated on the perineal pseudo continent colostomy. Physical exam showed a large budding, ulcer mass of perineum, measured 20 cm in diameter (Figure 1). The mass was mobile. A biopsy was performed. The pathology of the punch biopsies revealed a recurrence of his prior adenocarcinoma on his CCPP. The CT body scan did not show any metastatic lesion. And tumor markers were negative (Carcinoembryonic antigen and CA 19-9).

We decide to perform a wide excision of the local recurrence with definitive left iliac colostomy and reconstruction with a rectus abdominis myocutaneous (RAM) flap with an inferior pedicle and an oblique skin paddle (Taylor flap).

The patient is placed in a gynecological position. The tumor was non-occlusive, large, ulcer, and budding mass. It measured 20 cm in its greatest diameter and goes up to 10 cm in height of the CCPP. We performed a median laparotomy from the xiphoid to the pubis, passing to the right of the umbilicus. We proceeded to disconnect the CCPP, passing 2 cm from the tumor in the circumferential margin and 5 cm in height (Figure 2). The distal colonic stump was left pending. Reconstruction passing through the large muscle right of the abdomen, and we ensured that the right flap chosen was well vascularized (Figure 3). Once the flap was raised, it was switched to intra-abdominal in 180 degrees and down to the perineum. We assured its vascular safety in pelvic position (Figure 4). We performed the

colostomy, we carried out systematic prosthetic parietal reconstruction and then we closed the abdominal wall at the same time. Then we performed modeling and suturing of the flap.



Figure 1: A large budding, ulcer mass on the perineal pseudo continent colostomy.



Figure 2: The perineal pseudo continent colostomy is disconnected.



Figure 3: Reconstruction passing through the large muscle right of the abdomen.

The postoperative management is straightforward and the patient was discharged from the hospital on the tenth day. The definitive healing was achieved in 30 days.

The definitive histological exam showed a moderately differentiated adenocarcinoma with a vascular embolus. We found 2 lymph nodes that were negative. The circumferential margin was 20 mm, and the distal margin was free at 40 mm. The patient underwent adjuvant chemotherapy. The regimen chemotherapy was six cycles of Folfox.

The patient is free of disease with a 3-year-follow up. The written consent was taken from the patient.



Figure 4: The flap was switched to intra-abdominal in 180 degrees and down to the perineum. We assured its vascular safety in pelvic position.

## Discussion

Regardless of whether or not preoperative chemoradiotherapy or radiotherapy are performed, local recurrence of curatively resected rectal cancer has been reported to vary from 3.7% to 13.0%. [2-4].

The sites of local recurrences are so various [2, 5]. Before the progress of total mesorectal excision, the most common local types of recurrence expected to be central (perianastomotic and anterior). Lateral and posterior types (presacral), nevertheless, have become more common as multimodal treatments have come into use [2]. In our case despite combined treatment and the total mesorectal excision, the recurrence was central.

Surgeons try to maximize the preservation of the sphincter, so APR is infrequently used for the treatment of lower rectal cancer and canal anal cancer. However, after this sort of surgery, restoration and digestive continuity through definitive left iliac colostomy continued to date the most common reconstruction process [6].

PCPC was firstly described by Schmidt [1], and then it was used previously by many surgeons [6, 7]. Actually, this technique is not used currently for the treatment of rectal cancer.

Lasser et al. [6] defined the selection criteria for this technique: young patients, healthy, able to perform perineal irrigations and, above all, motivated by the choice of this technique. Obesity is an adverse factor in the implementation of this technique. A prolonged sitting position does not constitute a contraindication to PCPC, nor is the use of adjuvant chemotherapy. However, postoperative radiotherapy is a contraindication to the use of this reconstruction, as is the presence of a large fixed tumor [6].

Moreover, Kuzu et al. [8] mentioned that social, physical, sexual, and psychological aspects of life, in addition to religious worship, are severely impaired by sphincter sacrificing surgery in the Islamic population. As an alternative Skouda et al. [9] demonstrated that PCPC provides a high degree of patient satisfaction without compromising oncological results. It is a good option in selected patients, especially in Muslim countries.

In our study, we proposed the PCPC technique to our patients believing that it would be more adapted to their economic situation, social and religious specificities of our population. By allowing body image preservation, PCPC makes easy the social reinsertion and avoids the alteration of the quality of life due to permanent iliac colostomy, especially in Muslim

patients. These reasons could explain the high rate of satisfaction among our patients.

The main oncological advantage of PPCC technique is to allow early diagnosis of pelvic recurrences by rectal examination or by echo-endoscopy [7, 9], like in our case, the local recurrence was identified by clinical rectal inspection and confirmed by histological findings before adequate treatment was initiated.

Treatments of loco-regional recurrences of rectal cancer present a real challenge for physicians.

Bosman et al. [10] reported that reirradiation (with concomitant chemotherapy) was associated with high morbidity. Many studies have clearly proven the survival benefits of surgical resection of locally recurrent rectal cancer [2, 11, 12].

Surgical resection of locally recurrent rectal cancer prolongs survival after diagnosis of recurrence, regardless of R0 resection [11, 13]. So, such resection should be considered as an initial treatment for locally recurrent rectal cancer. Furthermore, the wide surgical resection is conflated with an aesthetic challenge to handle the perineal defect. In our case, excision of the local recurrence was coupled with a large perineal defect that required Taylor's flap.

Whereas perineal scarring is a major issue in terms of the quality of life for patients after an abdominal-perineal amputation. The extensive resections and irradiation make this extremely random and long healing [14]. The complications such as infections and abscess, disunity or chronic wounds are quite frequent under these conditions (up to 65% depending on the series).

One of the alternatives to Taylor's flap is direct closure on omentoplasty. Lefèvre et al. [15], concluded that Taylor's flap was a technique which reduced perineal complications and the time of healing in patients with abdominal-perineal amputation for anal cancer without increasing morbidity in the abdominal wall. Other roofing flaps can also be used as the gracilis flap [16], lower gluteal [17] or deep inferior epigastric perforators (DIEP). The gracilis flap [16] has many disadvantages compared to the one of Taylor. Small in size, it does not allow to cover the great loss of substance. Its reliability, much lower with necroses present in 10 to 25% of cases depending on the series makes it a second-line flap in case failure or impossibility of making a flap of large right. As for the lower gluteal flap, the ransom scarring, low mobility and chronic pain [17] also make it a second choice flap. As for DIEP, its main advantage is the absence of secondary venting [18]. But the complexity and the cumbersomeness of realization for patients often fragile in the background also a second choice flap. In addition, the reliability of a microanatomist free flap in multi-operated and irradiated patients is much less than that of a much safer Taylor flap [18].

Taylor's flap allows for immediate reconstruction in large cases [15]. The minimal complications of the receiving site (disunity, abscesses, partial necroses and etc.) and the donor site (vents and etc), encourages us to carry out an immediate reconstruction.

The choice of immediate or secondary reconstruction can also be discussed. In our case, the patient received an immediate reconstruction. Early filling of the loss of substance reduces the risk of complications. The immediate reconstruction is good because it makes the length of hospitalization and cares much shorter.

As for the risks of suffering from the flap, it will agree to ensure the absence of intrinsic compression (bladder, uterus and etc.) at the rotation point [19].

In conclusion, surgical resection of locally recurrent rectal cancer prolongs survival after diagnosis of recurrence, regardless of R0 resection. So, such resection should be

considered as an initial treatment for locally recurrent rectal cancer. However, this resection is often associated with a large defect that leads to a problem of coverage.

Locally recurrent rectal cancer yields wide perineal defects and Taylor flap would be a good alternative for the reconstruction.

Thus, the benefit for the patient is both functional and psychological: The quality of surgical resection as R0 affords to the patient long survival term, and Taylor's flap ensures a good quality of life.

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