



Unsuccessful Perineal Reconstruction with Myocutaneous V-Y Advancement Flap after Extralevator Abdominoperineal Excision for Low Rectal Cancer

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Abstract

Extralevator abdominoperineal excision of the rectum was introduced with the aim of improving the oncological outcome of low rectal cancer. The technique includes resection of the levator muscles from their origins on the pelvic side walls and their en bloc removal along with the mesorectum, which results in a larger perineal defect than is seen after conventional surgery. For reconstruction of large perineal defects, pedicled muscle flaps are recommended but the procedure is technically challenging and plastic surgery consultation is necessary. Local flap techniques such as a gluteus maximus myocutaneous V-Y advancement flap are an easier option. In this case report, wound failure following a local flap repair of a perineal defect is presented.

Keywords: Rectal cancer; Extralevator abdominoperineal excision; Gluteus maximus myocutaneous V-Y advancement flap

Introduction

Wide excision of perineal lesions, often including excision of the anal canal or rectum, may be necessary for the treatment of a number of benign and malignant conditions. Extralevator Abdominoperineal Excision (ELAPE) of the rectum was introduced with the aim of improving the oncological outcome of low rectal cancer. The technique includes resection of the levator muscles from their origins on the pelvic side walls and their en bloc removal along with the mesorectum. Closure of the large resulting defect is technically challenging, especially when the patient has also received neoadjuvant radiotherapy. Pedicled muscle flaps seem to be the treatment of choice for covering perineal defects, but this necessitates plastic surgery consultation. Local flap techniques such as gluteus maximus V-Y advancement flap are easier to perform. We report our first experience with local flap closure of a large perineal defect after ELAPE following chemoradiotherapy of rectal cancer. Unfortunately, local flap coverage of the perineal defect was not successful.

Case Presentation

A 54-year-old man was diagnosed with rectal adenocarcinoma in December 2014. The tumor was located at the lower part of the rectum and was associated with an anal fistula. Digital rectal examination, plain chest radiography, colonoscopy, and computerized tomography were used for evaluation of the patient. The tumor stage was cT4N+, and the patient was administered long-term chemoradiotherapy (5-fluorouracil, 5040 cGy). Restaging after 8 weeks of neoadjuvant therapy showed tumor downsizing but no downstaging. Abdominoperineal excision and para-aortic lymphadenectomy was performed by a consultant surgeon who had undergone training in the use of the extralevator technique. The perineal wound defect was closed with a gluteus maximus myocutaneous V-Y advancement flap (Figure 1). The operation time was 480 mins and the estimated blood loss was 400 mL. Urinary incontinence developed postoperatively and the patient required an indwelling catheter for 6 weeks. Unfortunately, perineal wound dehiscence occurred on the tenth postoperative day (Figure 2). Open wound treatment was applied, and the patient was discharged 15 days after the surgery. Intensive wound care including hyperbaric oxygen therapy was applied for the next 12 months; however, the perineal wound healing is not complete even 2 years after the surgery (Figure 3). Informed consent was obtained for the operation presented in the study.

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Figure 1: Perineal gluteus maximus myocutaneous V-Y advancement flap.



Figure 2: Wound dehiscence after the surgery.



Figure 3: Perineal wound appearance 2 years after the surgery.

Discussion

Perineal wound complications after abdominoperineal excision are frequent and have an impact on the length of hospitalization, quality of life, and oncologic results [1,2]. Perineal morbidity occurs significantly more frequently in ELAPE patients [3,4]. Radiotherapy and longer operation times may also be contributing factors for perineal morbidity in these groups of patients. Closure of large defects is technically challenging, especially when neoadjuvant radiotherapy has also been given. Pelvic floor reconstruction using various techniques has been advocated to decrease perineal morbidity. Local flap reconstruction is a useful technique for the repair of perineal defects without much effort [5,6]. We used a bilateral gluteus maximus myocutaneous V-Y advancement flap for closure of the pelvic floor defect after ELAPE. However, the result of the operation was not successful and this would be related to irradiation of the pelvic floor. Radiotherapy may cause the development of chronic inflammation and fibrosis, significantly impairing wound repair. Moreover, local flap surgery was our first experience which might also contribute to the wound failure.

Pedicled muscle flap seems to be method of choice for

reconstruction as they introduce vascularized tissue into a radiated field [7]. The Vertical Rectus Abdominis Myocutaneous (VRAM) flap has been used successfully to cover perineal defects [8,9]. A free latissimus dorsi myocutaneous flap is an option when the VRAM flap cannot be used because of the need for placement of bilateral stomas [10]. However, all of these techniques are time consuming and require plastic surgery consultation. Biological mesh repair has been attempted but the rates of perineal wound complications or perineal hernia formation were comparable with that with primary wound closure [11]. Porcine collagen treatment may be an attractive option in centers where plastic surgery specialists are not available [12].

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