

Successful Treatment of a Large Pelvic Abscess Using Intraluminal VAC: A Case Report

ABBAS ARAS¹, SEBAHATTIN CELIK², REMZI KIZILTAN³, ÖZKAN YILMAZ⁴, ÇETIN KOTAN⁵

ABSTRACT

The most feared complication of the surgical treatment of rectal cancer is anastomotic leakage, which is related to high rates of mortality and morbidity. Here, we present a patient who could not be treated with surgical drainage but treated by intraluminal Vacuum Associated Closure (VAC).

A 34-year-old male patient was treated for rectal cancer by low anterior resection, colorectal anastomosis, and diverting ileostomy following neoadjuvant CRT. The patient reported with a postoperative anastomotic disruption and a large pelvic abscess. Due to the continuation of foul-smell drainage inspite of perianal incision and drainage, intraluminal VAC was applied and the pelvic abscess and the foul-smell were successfully treated.

The presence of an adequate anal sphincter tonus is a disadvantage in anastomotic leakage, since it prevents the emptying of the intestinal content and also precludes the drainage of the pelvic abscess. The endoluminal application of VAC, similar to the results of application of VAC in open wounds, has been demonstrated to decrease fibrin and necrotic tissue in the pelvic cavity and increase granulation tissue.

VAC, which has long been used in the treatment of open wounds, is a promising method in the treatment of large pelvic abscesses due to anastomotic leakage following rectum resection.

Keywords: Anastomotic leakage, Rectal Cancer, Sphincter, Vacuum Associated Closure

CASE REPORT

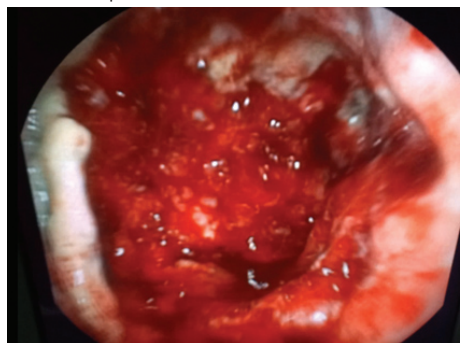
A 34-year-old male patient came to our General Surgical polyclinic with complaint of abdominal pain and abdominal distention. He told that these complaints had started about 2 months ago and he lost about 5 kg in two months. In his physical examination there was minimal abdominal distention and tenderness. There was blood on rectal examination. There were no any other comorbidities. All blood tests were in normal ranges. After colonoscopy and radiological staging, an advanced local rectal cancer was diagnosed and patient referred neoadjuvant Chemo-Radiotherapy (CRT). Laparoscopic hand-assisted total mesorectal excision plus coloanal anastomosis and diverting ileostomy following neoadjuvant CRT was performed. The histopathological examination of the specimen revealed a complete response and eight reactive lymph nodes. A large abscess secondary to anastomotic disruption was drained through a perianal circular incision. A colonoscopy, which was performed because of a continued foul-smell, revealed a large disruption at the anastomosis and a large pelvic abscess covered with dense purulent material [Table/Fig-1]. Perianal incision was seen to extend into the pelvic pouch, but was observed to be inadequate to treat the abscess. The application of intraluminal VAC was planned.

For this reason, a foam rubber covered with silicon with small holes and a trade mark of KCI ABThera was chosen. The foam rubber was brought into a roll in order to easily place it in the lumen [Table/Fig-2].

One end of the rubber foam was left outside to be connected to the aspiration system. The part that will remain in the anal sphincters was thinned and the closure of anal canal is provided [Table/Fig-3]. Upon first application, a foam was also placed into the surgical drainage incision [Table/Fig-4]. The incision was sutured on the second application. The foam was changed twice weekly and the procedure was terminated after six weeks. The first two applications were performed in the operating room under sedation; other applications were performed bedside. The foul-smell began to decrease from the second day of application. The development of a granulation tissue was noted at the pelvic sinus through colonoscopic evaluation performed at the end of six weeks [Table/Fig-5].

DISCUSSION

Anastomotic leakage following rectal surgery is a serious complication with an incidence of 24-30% [1-3]. Since a large



[Table/Fig-1]: Colonoscopy view of large pelvic abscess covered with dense purulent material. **[Table/Fig-2]:** The foam rubber covered with silicon with small holes. **[Table/Fig-3]:** The aspiration part of Vacuum associated closure that connected to anal part of foam rubber and anal sphincter was thinned and the closure of anal canal is provided.



[Table/Fig-4]: Second foam was also placed into the surgical drainage incision. **[Table/Fig-5]:** The development of a granulation tissue was noted at the pelvic sinus through colonoscopy evaluation. Proximal colonic outlet which intestinal contents come through (Yellow arrow). Granulation tissue which fill pelvic abscess cavity (Blue arrow).

dead space is formed in the pelvis with total mesorectal excision, anastomotic leakage in this area most probably results in large pelvic abscesses. The presence of an adequate anal sphincter tonus is a disadvantage in anastomotic leakage, since it prevents the emptying of the intestinal content and also precludes the drainage of the pelvic abscess. Intestinal diversion does not affect the rate of anastomotic leakage; however, it provides an opportunity for palliative treatment of the leakage. Various methods have been defined in the treatment of large pelvic abscesses.

The presence of generalized peritonitis, together with anastomotic leakage, is an absolute indication for surgery. Treatment option in cases without the presence of generalized peritonitis is minimally invasive methods with imaging-guided or endoscopic drainages [4]. Mortality rates can be lowered and sphincter functions can be preserved in cases that can be treated with minimally invasive methods. Undetermined injury of interposed organs and vascular damage and the possibility of obstruction of the drain with debris are the disadvantages of imaging-guided drainage.

The application of VAC, which has been used very frequently in open wounds, was introduced for intraluminal use in patients with pelvic abscesses in 2007 by Weidenhagen et al., [5]. The application of VAC increases local blood flow, decreases oedema in the wound area, eliminates fluid in this area, decreases bacterial load, and stimulates growth of granulation tissue [6]. The endoluminal application of VAC, similar to the results of a plication of VAC in open wounds, has been demonstrated to decrease fibrin and necrotic tissue in the pelvic cavity and increase granulation tissue [5]. It has also been demonstrated to provide a decrease in the volume of the abscess cavity due to the negative pressure [5].

Another problem in patients with pelvic abscess is the presence of a foul smell that bothers both the patient and his or her relatives. The foul smell has been demonstrated to decrease in the first 24 hours of VAC application [5]. In the case presented herein, the

foul smell was observed to decrease on the second day after the application of VAC.

The success of VAC application in the management of large pelvic abscess has been reported in several studies in the literature [5,7]. In those studies, ABThera foam was only used in one case as a closing material placed in the lumen and polyurethane foam was used in the remaining cases [8]. Polyurethane foam, placed in the lumen in the intraluminal vacuum treatment may cause erosion and bleeding in the healthy epithelium tissue [9]. Since the silicon layer on the ABThera foam prevents adhesion of the foam to the tissue, it causes no erosion or bleeding in the tissue.

This study presented herein is the second case of a pelvic abscess in the literature that was treated using intraluminal ABThera foam [8]. The septic focus was controlled successfully in this case, the foul smell was eliminated and since ABThera foam was used, no bleeding or mucosal damage occurred.

CONCLUSION

VAC, which has long been used in the treatment of open wounds, is a promising method in the treatment of large pelvic abscesses due to anastomotic leakage following rectum resection. With the use of this method, septic focus can be successfully controlled, the foul smell can be eliminated and mucosal damage and bleeding can be prevented using ABThera foam.

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PARTICULARS OF CONTRIBUTORS:

1. Assistant Professor, Department of General Surgery, Faculty of Medicine, Yuzuncu Yil University, Van, Turkey.
2. Assistant Professor, Department of General Surgery, Faculty of Medicine, Yuzuncu Yil University, Van, Turkey.
3. Assistant Professor, Department of General Surgery, Faculty of Medicine, Yuzuncu Yil University, Van, Turkey.
4. Assistant Professor, Department of General Surgery, Faculty of Medicine, Yuzuncu Yil University, Van, Turkey.
5. Professor, Department of General Surgery, Faculty of Medicine, Yuzuncu Yil University, Van, Turkey.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Sebahattin Celik,
Assistant Professor, Department of General Surgery, Faculty of Medicine, Yuzuncu Yil University, Van, Turkey.
E-mail: drsebahattincelik@hotmail.com

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