



Oncology

A case of laparoscopically assisted transperineal repair of anterior enterocele dehiscence with small bowel evisceration after robot-assisted radical cystectomy

Yutaro Sasaki^{a,*}, Yasuyo Yamamoto^a, Saki Kobayashi^b, Masaaki Nishi^b, Masayuki Takahashi^a, Junya Furukawa^a

^a Department of Urology, Tokushima University Graduate School of Biomedical Sciences, 3-18-15 Kuramoto, Tokushima, 770-8503, Japan

^b Department of Digestive Surgery and Transplantation, Tokushima University Graduate School of Biomedical Sciences, 3-18-15 Kuramoto, Tokushima, 770-8503, Japan



ARTICLE INFO

Keywords:

Anterior enterocele dehiscence
Small bowel evisceration
Robot-assisted radical cystectomy
Laparoscopically assisted transperineal repair

ABSTRACT

We herein report a case of successful laparoscopically assisted transperineal repair of anterior enterocele dehiscence with small bowel evisceration after robot-assisted radical cystectomy. A 75-year-old woman underwent robot-assisted radical cystectomy with anterior vaginectomy and urethrectomy for bladder cancer (pTisNOM0). Vaginal reconstruction was performed using the posterior vaginal wall. Four months after surgery, she presented with small bowel evisceration due to anterior enterocele dehiscence. She underwent laparoscopically assisted transperineal repair. The anterior enterocele dehiscence did not occur at the vaginal closure site but instead between the vaginal wall and posterior pubic bone. No recurrence had developed at 2 months postoperatively.

1. Introduction

Radical cystectomy with anterior vaginectomy and urethrectomy disrupts the periurethral fascia and ligamentous support to the pubic symphysis.^{1,2} Additionally, vaginal reconstruction using the posterior vaginal wall can cause vaginal dehiscence. Therefore, women who have undergone radical cystectomy are more likely to develop pelvic organ prolapse than women who have not undergone this procedure. We herein report a case of laparoscopically assisted transperineal repair for anterior enterocele dehiscence with small bowel evisceration after robot-assisted radical cystectomy.

2. Case presentation

A 75-year-old Japanese woman had a history of total open hysterectomy for uterine fibroids at the age of 60 years and laparoscopic left nephroureterectomy and partial cystectomy for left lower urinary tract cancer at the age of 73 years. She had given birth to one child vaginally. Her height, weight, and body mass index were 152.3 cm, 48.7 kg, and 21.0 kg/m², respectively. She underwent robot-assisted radical

cystectomy and intracorporeal ileal conduit for bladder cancer (pTisNOM0). Internal iliac, external iliac, and obturator lymph node dissection was performed only on the right side. The bladder, urethra, bilateral ovaries, and anterior vaginal wall were removed together transvaginally. The Mercedes-Benz closure technique was performed for vaginal reconstruction using the posterior vaginal wall.³ No perioperative complications occurred, and the patient was discharged on postoperative day 20. However, 3 months after surgery, she complained of a bulge sensation in the vagina, and physical examination confirmed a ping-pong ball-sized anterior enterocele (Fig. 1A). Just as we were considering surgical treatment jointly with a gastrointestinal surgeon, the patient was transported by ambulance to our hospital with small bowel evisceration due to anterior enterocele dehiscence and ileus 4 months postoperatively (Fig. 1B). The small intestine was reduced by a gastrointestinal surgeon. The next day, she underwent laparoscopically assisted transperineal repair. The surgical procedure was performed using a three-port transperitoneal approach with the patient in the lithotomy position in the 20-degree Trendelenburg tilt position. The adhered small intestine and omentum were removed laparoscopically, and the dehiscence was identified (Fig. 2). The dehiscence was located

* Corresponding author.

E-mail addresses: yutaro_sasaki@tokushima-u.ac.jp (Y. Sasaki), yasuyoyamamoto@tokushima-u.ac.jp (Y. Yamamoto), kobayashi.saki.2@tokushima-u.ac.jp (S. Kobayashi), nishi.masaaki@tokushima-u.ac.jp (M. Nishi), takahashi.masayuki@tokushima-u.ac.jp (M. Takahashi), jfurukawa@tokushima-u.ac.jp (J. Furukawa).

<https://doi.org/10.1016/j.eucr.2023.102629>

Received 1 November 2023; Received in revised form 20 November 2023; Accepted 22 November 2023

Available online 29 November 2023

2214-4420/© 2023 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

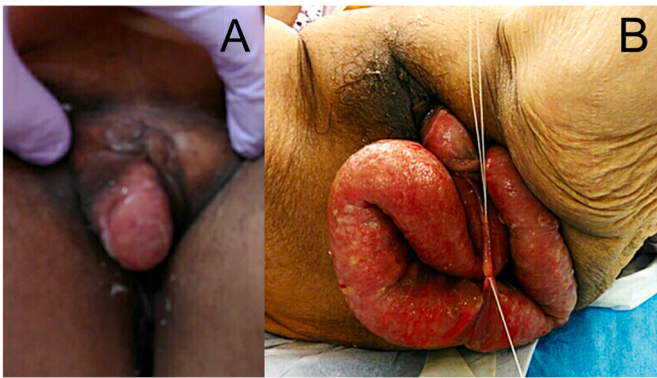


Fig. 1. Images showing the perineum before surgery. (A) Image showing a ping-pong ball-sized anterior enterocele. (B) Image showing the small bowel evisceration due to anterior enterocele dehiscence. The small intestine was red and swollen. (For interpretation of the references to colour in this figure legend, the reader is referred to the Web version of this article.)

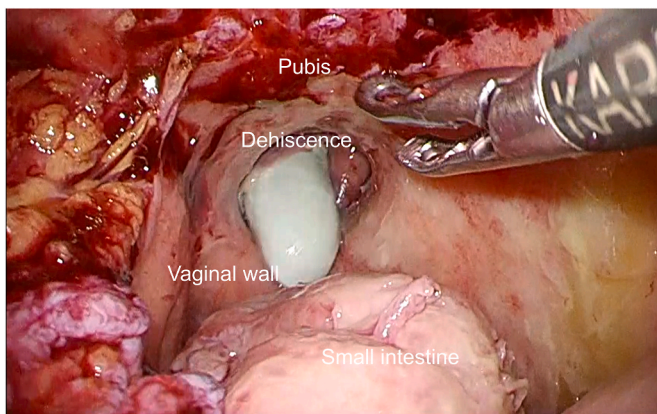


Fig. 2. Image showing the anterior enterocele dehiscence site and surrounding organs during laparoscopy. The dehiscence did not occur at the vaginal closure site but instead between the vaginal wall and the posterior pubic bone. The white gloved finger points to the dehiscence.

between the vaginal wall and the posterior pubic bone. The vagina reconstructed using the posterior vaginal wall had a wider lumen and a preserved structure. We confirmed the absence of surrounding small intestine and performed transperineal repair of the dehiscence. The excess vaginal skin was trimmed, and the dehiscence was closed with a

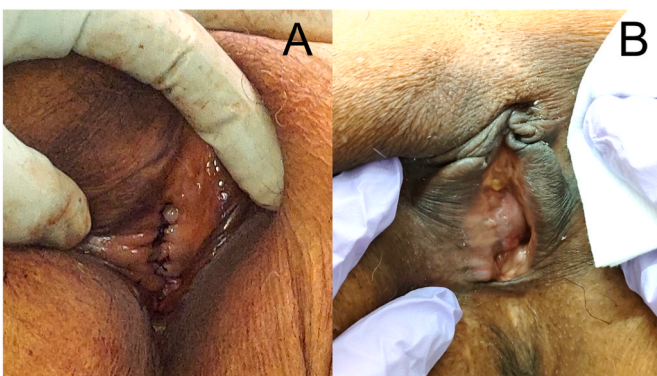


Fig. 3. Images showing the perineum after surgery. (A) Image showing the perineum immediately after surgery. The dehiscence was closed with a purse-string suture. (B) Image showing the perineum 2 months after surgery. There was no recurrence of the anterior enterocele.

purse-string suture using a braided suture (2-0 VICRYL CT-1; Ethicon, Somerville, NJ, USA) (Fig. 3A). Bowel resection was not required. The operation time was 119 minutes, and the estimated blood loss was minimal. The patient was discharged on postoperative day 17 without any postoperative complications. No recurrence had developed 2 months postoperatively (Fig. 3B).

3. Discussion

Radical cystectomy in women classically involves removal of the bladder, urethra, and anterior vaginal wall along with the uterus and adnexa.³ In anterior vaginectomy and urethrectomy, the periurethral fascia and ligamentous support of the pubic symphysis are disrupted.¹ Vaginal reconstruction using the posterior vaginal wall is commonly required following radical cystectomy in women. This female-specific surgical step can lead to vaginal dehiscence. Vaginal dehiscence is defined as separation of the vaginal epithelium at the previous vaginectomy closure site.⁴ For the above reasons, women who have undergone radical cystectomy are more likely to develop pelvic organ prolapse such as an anterior enterocele than women who have not undergone this procedure. Pelvic organ prolapse not only impacts quality of life but also has the potential to cause serious complications, including organ evisceration.¹ We consider vaginal dehiscence to be an important cause of the occurrence of anterior enterocele. To avoid vaginal dehiscence, the vaginal wall should be closed very tightly and carefully so that no tension is placed on it.³ We previously reported use of the Mercedes-Benz closure technique to achieve this goal in vaginal reconstruction.³ Thus, although we have focused on surgical techniques for vaginal reconstruction, our research indicates that surgical techniques alone are insufficient to prevent the occurrence of an anterior enterocele. In the present case, the small bowel evisceration did not occur at the vaginal closure site, but between the vaginal wall and the posterior pubic bone. We thought that an anterior enterocele had occurred because there was little tissue to strengthen this area. Regardless of the vaginal reconstruction method, we believe that weakness between the vaginal wall and posterior pubic bone leads to the development of an anterior enterocele. In this case, we considered reinforcing the anterior enterocele with the use of mesh⁵; however, because of concerns regarding the risk of infection, we only performed transperineal repair. We were able to repair the dehiscence safely with laparoscopic assistance. On the basis of this experience, we have decided to preserve the detrusor apron during robot-assisted radical cystectomy in women in future. After completing vaginal reconstruction using the posterior vaginal wall, we believe that firmly suturing the detrusor apron and the reconstructed vagina is the most effective way to prevent the occurrence of an anterior enterocele.

4. Conclusion

We successfully performed laparoscopically assisted transperineal repair for anterior enterocele dehiscence with small bowel evisceration after robot-assisted radical cystectomy in a woman. We believe that reinforcing the space between the vaginal wall and the posterior pubic bone is important to prevent the occurrence of an anterior enterocele.

Consent statement

We obtained consent from the patient for publication of this case report.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Ethics

This research conforms to the provisions of the Declaration of Helsinki.

CRediT authorship contribution statement

Yutaro Sasaki: Conceptualization, Data curation, Writing – original draft. **Yasuyo Yamamoto:** Conceptualization, Writing – review & editing. **Saki Kobayashi:** Data curation. **Masaaki Nishi:** Data curation. **Masayuki Takahashi:** Writing – review & editing. **Junya Furukawa:** Supervision, Writing – review & editing.

Declaration of competing interest

None.

Acknowledgment

We thank Angela Morben, DVM, ELS, from Edanz (<https://jp.edanz.com/ac>), for editing a draft of this manuscript.

References

1. Cruz AP, Chelluri R, Ramchandani P, Guzzo TJ, Smith AL. Post-cystectomy enterocele: a case series and review of the literature. *Urology*. 2021;150:180–187. <https://doi.org/10.1016/j.urology.2020.03.063>.
2. Liu SH, Zhang YH, Niu HT, Tian DX, Qin F, Jiao W. Vaginal enterocele after cystectomy: a case report. *World J Clin Cases*. 2022;10:2045–2052. <https://doi.org/10.12998/wjcc.v10.i6.2045>.
3. Sasaki Y, Takahashi M, Hashimoto K, et al. Efficacy of the Mercedes-Benz closure technique for vaginal reconstruction in female robot-assisted radical cystectomy. *Asian J Endosc Surg*. 2023;16:23–27. <https://doi.org/10.1111/ases.13109>.
4. Lin FC, Medendorp A, Van Kuiken M, Mills SA, Tarnay CM. Vaginal dehiscence and evisceration after robotic-assisted radical cystectomy: a case series and review of the literature. *Urology*. 2019;134:90–96. <https://doi.org/10.1016/j.urology.2019.09.009>.
5. Kuwata T, Takeyama M, Watanabe M, Kashihara H, Kato C. Transvaginal repair of enterocele following robot-assisted radical cystectomy using a mesh for abdominal wall hernia repair. *IJU Case Rep*. 2022;5:389–392. <https://doi.org/10.1002/iju5.12497>.