



## Case Report

# Anterior perineal hernia after anterior exenteration



Ka Wing Wong\*, Terence Chun-ting Lai, Ada Tsui-lin Ng, Brian Sze-ho Ho, James Hok-leung Tsu, Chiu Fung Tsang, W.K. Ma, Ming Kwong Yiu

Division of Urology, Department of Surgery, Queen Mary Hospital, University of Hong Kong, Hong Kong, China

Received 20 March 2016; received in revised form 25 May 2016; accepted 14 September 2016  
Available online 14 March 2017

### KEYWORDS

Perineal hernia;  
Anterior exenteration;  
Bladder cancer;  
Mesh repair

**Abstract** Perineal hernia is a rare complication of anterior exenteration. We reported this complication after an anterior exenteration for bladder cancer with bleeding complication requiring packing and second-look laparotomy. Perineal approach is a simple and effective method for repair of perineal hernia.

© 2017 Editorial Office of Asian Journal of Urology. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

## 1. Introduction

Perineal hernia is a rare complication of anterior exenteration [1–4]. Diagnosis requires careful history taking and physical examination with high level of suspicion. Imaging such as ultrasonography or computed tomography (CT) helps to confirm the diagnosis [2,5]. Different surgical approaches have been adopted to the repair of perineal hernia [3,6]. We reported the management of this complication after an anterior exenteration for bladder cancer

with bleeding complication requiring packing and second-look laparotomy.

## 2. Case presentation

We report a case of a 63-year-old female who suffered from anterior perineal hernia after anterior exenteration for bladder cancer. She had history of diabetes mellitus, hypertension, bronchiectasis and transabdominal hysterectomy with bilateral salpingo-oophorectomy in 1990s for a benign pathology. She first presented with mucus in her urine in 2013. Subsequent flexible cystoscopy revealed a 2 cm sessile mass at the trigone. Transurethral resection of the bladder tumor was performed and histopathology showed adenocarcinoma with detrusor muscle invasion. CT scan showed no upper tract lesions or

\* Corresponding author.  
Peer review under responsibility of Second Military Medical University.

lymph node metastases. Colonoscopy was performed to rule out a primary colonic tumor and the result was normal.

Anterior exenteration was performed in May 2013. Unexpectedly dense adhesions were found between the anterior rectal wall and posterior bladder wall during the operation. The surgeons decided to resect the bladder and urethra en-bloc with the proximal rectum and distal sigmoid colon. However, there was profuse venous bleeding from pre-sacral venous plexus after colorectal dissection. It was partially controlled with pins and tacker screws. The pre-sacral area was further packed with gauze roll. Both ureters were brought out through the inferior part of the main wound.

Second-look laparotomy was performed 2 days later. Hemostasis was achieved. An ileal conduit was fashioned. Colorectal anastomosis was performed 6 cm above the anal verge with Covidien EEA™ 28 mm stapler. A defunctioning transverse colostomy was fashioned which was eventually closed 6 months later. Final histopathology of the specimen was pT2a adenocarcinoma of the bladder with clear resection margin.

She complained of a labial mass since the early post-operative period. Serial CT scans however showed no evidence of recurrence until she was found to have a suspected perineal hernia during physical examination in May 2015 (Fig. 1). CT pelvis with Valsalva maneuver revealed a wide-necked anterior perineal hernia containing ileum situated anterior to the superficial transverse perineal muscles (Fig. 2).

Transperineal repair of the hernia was performed in the lithotomy position. The incision was made lateral to the left labia majora. Further dissection deeper down revealed a 4 cm defect lateral to the left side of the vagina and anterior to the superficial transverse perineal muscle. The defect was covered with a tailored polypropylene Prolene™ mesh and anchored with 2-0 non-absorbable polyester Ethibond™ suture. It was sutured anteriorly to the pelvic floor and inferior pubic rami, posteriolaterally to the sacrospinous ligament and posteriorly to the perineal body.

Postoperatively the wound was complicated with superficial wound abscess which was managed with incision and drainage. The mesh was not involved. There was no



**Figure 1** Clinical photos of perineum of the patient.



**Figure 2** CT pelvis with Valsalva maneuver. Left, sagittal view; Right, coronal view. Arrows showed the anterior perineal hernia.

recurrence of the perineal hernia at last follow-up visit in the outpatient clinic 8 months after surgery.

### 3. Discussion

Perineal hernia is the protrusion of intraperitoneal or extraperitoneal contents through a congenital or acquired defect of the pelvic diaphragm. The first case was reported in 1743 [7]. Anatomically, perineal hernia can be classified into anterior or posterior form based on their position relative to the superficial transverse perineal muscle (Fig. 1). Primary perineal hernia is rare [1–4]. Perineal hernia is usually secondary to complications of pelvic operations. The prevalence of secondary perineal hernia was reported up to 7% after pelvic exenteration but less than 1% after abdominoperineal resection [8,9]. The actual prevalence is however believed to be higher as the patients are commonly asymptomatic [5]. Predisposing factors include female gender, extensive pelvic resection especially pelvic exenteration, previous hysterectomy, radiotherapy and presence of infections [6,8]. The reported patient had multiple predisposing factors for perineal hernia including female gender, history of hysterectomy and anterior pelvic exenteration. Extensive dissection of the pelvis may disrupt the anatomy of the pelvis, leading to subsequent perineal hernia formation.

Perineal hernia usually occurs within the first year after the pelvic operations [6,10]. Patients can manifest clinically as a unilateral bulge in the area of the labia or gluteal or perineal region. Careful physical examination usually reveals a perineal swelling with a positive cough impulse. The diagnosis can be supported by sonography or CT scan with Valsalva maneuver as illustrated in this patient [2,5].

Surgical repair of perineal hernia is indicated for symptomatic control as well as prevention of complications such as small bowel obstruction and strangulation [6]. There is no single best treatment approach. Perineal hernias can be repaired through transabdominal, perineal, or combined abdomino-perineal approaches [3,6]. The advantages and disadvantages of different approaches are summarized in Table 1. Limited data suggested perineal approach is associated with higher recurrence rate [6,10]. This may be explained by poor fixation of mesh due to limited exposure in perineal approaches. But the results were largely limited by

**Table 1** Advantages and disadvantages of different approaches to perineal hernia (Summarized from Stamatou et al. [4]).

Approaches	Advantages	Disadvantages
Trans-abdominal	Optimal exposure for dissection and reduction of hernia sac; Possible for simultaneous trans-abdominal procedure; Better mesh fixation; Feasible for minimally-invasive approaches	Need for more pelvic dissection; More morbidity
Perineal	Simplest; Less morbidity	Suboptimal exposure for dissection and reduction of hernia sac; Difficult mesh fixation
Combined abdomino-perineal	Best for complex cases; Best exposure	Increased magnitude of operations; More morbidity

the small number of patients and the retrospective nature of the studies. In our patient, a major pelvic operation with radical cystectomy and ileal conduit was performed initially. Severe adhesion and difficult dissection were anticipated with transabdominal approach. Perineal approach for this patient resulted in a much less major operation and it would be a more appropriate choice in this situation.

The principles of repair are the same in different approaches, which involve reduction of hernia contents, dissection and isolation of the fascial defect, and reconstruction of the pelvic floor. Tension-free primary repair is usually not possible due to the attachment of fascia to the rigid pelvis. In pooled analysis [6], the recurrence was up to 50% compared with 20% after mesh repair. Synthetic meshes, grafts, flaps, or even interposition of uterus or bladder can be applied for reconstruction of the pelvic floor. Use of composite mesh significantly reduces visceral adhesion [11] although its use was not necessary in this patient as the closure of the peritoneal defect was completed with the repair of the hernia defect. Tissue flap reconstruction is more commonly used for recurrent hernias or hernias with a history of irradiation or infection. It is technically more demanding and is associated with donor site morbidities and devastating complications like flap necrosis.

Postoperative perineal hernia is potentially preventable. Identification of patients at risk is important. Some authors advocated for the prophylactic closure of perineal wound with a muscle flap such as vertical rectus abdominis muscle [12,13] although there are no strong evidence to support its efficacy. Prevention of postoperative wound infection and pelvic collection are equally important.

The follow-up period is relatively short (8 months) to look for any recurrence of hernia. Although majority of recurrence occurs within the first year, late recurrence up to 5 years after hernia repair did happen [6].

#### 4. Conclusion

We reported an uncommon complication of anterior perineal hernia after anterior pelvic exenteration. Perineal approach is a simple and effective method for repair of perineal hernia.

#### Conflicts of interest

The authors declare no conflict of interest.

#### References

- [1] De Garengot RJC. Sur plusieurs hernies singulieres. *Mem Acad R Chir (Paris)* 1743;1:699.
- [2] Nieto-Zermeno J, Godoy-Murillo JG, Cadena-Santillana JL. Posterior perineal hernia. Report of a case and review of the literature. *Bol Med Hosp Infant Mex* 1993;50:741–4.
- [3] Salameh JR. Primary and unusual abdominal wall hernias. *Surg Clin North Am* 2008;88:45–60.
- [4] Stamatou D, Skandalakis JE, Skandalakis LJ, Mirilas P. Perineal hernia: surgical anatomy, embryology, and technique of repair. *Am Surg* 2010;76:474–9.
- [5] Steffensen TS, Opitz JM, Gilbert-Barness E. Congenital perineal hernia in a fetus with trisomy 18. *Fetal Pediatr Pathol* 2009;28:95–9.
- [6] Morcos BB, Al-Masri M, Baker B. Perineal hernia, another incisional hernia? *Indian J Surg* 2009;71:112–6.
- [7] Rutledge FN, Smith JP, Wharton JT, O'Quinn AG. Pelvic exenteration: analysis of 296 patients. *Am J Obstet Gynecol* 1977;129:881–92.
- [8] Penkov N, Damianov D, Asenov Y, Gerzilov P, Sedloev T. Recurrent perineal hernia-case report and review of the literature. *Chirurgia (Bucur)* 2015;110:81.
- [9] Mjoli M, Sloothaak DAM, Buskens CJ, Bemelman WA, Tanis PJ. Perineal hernia repair after abdominoperineal resection: a pooled analysis. *Colorectal Dis* 2012;14:e400–6.
- [10] So JB, Palmer MT, Shellito PC. Postoperative perineal hernia. *Dis Colon Rectum* 1997;40:954–7.
- [11] Arnaud J, Hennekinne-Mucci S, Pessaux P, Tuech J, Aube C. Ultrasound detection of visceral adhesion after intraperitoneal ventral hernia treatment: a comparative study of protected versus unprotected meshes. *Hernia* 2003;7:85–8.
- [12] Howell AM, Jarral OA, Faiz O, Ziprin P, Darzi A, Zacharakis E. How should perineal wounds be closed following abdominoperineal resection in patients post radiotherapy—primary closure or flap repair? Best evidence topic (BET). *Int J Surg* 2013;11:514–7.
- [13] Johnston DB, McBrearty A, Armstrong A. Laparoscopic mobilization of a rectus abdominis myofascial flap for the prevention of perineal hernia post-abdominoperineal resection of the rectum a feasibility study? *Surg Innov* 2015; 22:656.