CASE REPORT

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Vesicocutaneous fistula following inguinoscrotal hernia repair: a case report

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ABSTRACT

Introduction: A vesicocutaneous fistula (VCF) represents an abnormal association between the bladder and the skin's surface. VCF mostly present as a complication of the diseases and treatments. Maceration, difficulty in treating the infection, moisture-associated skin damage, malodor, inconveniences, and physical disability were the sign and symptoms of VCF besides the visible urine leakage. A vesicocutaneous fistula should be treated adequately when recognized due to it may give bothersome complaints, social effects, and a possibility of recurrence to the patients. Proper surgical interventions are imperative because VCF leads to life-threatening complications such as cancer and sepsis. In this case, we report a case of vesicocutaneous fistula following inguinoscrotal hernia surgical repair in a 63-years-old man in order to provide an overview of the management of patients in similar cases.

Case Description: A 63-years-old man with a history of strangulated hernia and underwent exploratory laparotomy and ileostomy two weeks ago. Intermittent small amounts of urine discharge from the left groin was developed eleven days after the operation. The vital sign was normal, with a physical examination revealed a wet postoperative wound at the left groin. Mild tenderness over the suprapubic area. The hematology tests were normal. Cystography with contrast revealed the contrast appears to fill the bladder, and there is neither extravasation of contrast from the bladder to the distal end of the fistulous tract. The result was confirmed as the multiple diverticles within vesica urinaria. Incision of VCF was performed, and the bladder was closed in two layers with 3-0 Chromic for the mucosa and running polyglycolic acid (vicryl) 2-0 for the muscular.

Conclusion: Laparotomy should be performed with care, and the surgeon must be aware of possible organ trauma. In our patient VCF was treated by suturing the fistula after drainage.

Keywords: Bladder, inguinoscrotal hernia, vesicocutaneous fistula.
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INTRODUCTION

A vesicocutaneous fistula (VCF) represents an abnormal association between the bladder and the skin's surface. Persistent leakage of urine can cause maceration, skin damage due to skin becoming moist, and patient inconveniences.[1] Many etiologies cause VCF, but most commonly present as a complication results from radiation therapy, inflammatory bowel disease, cancer in the bowel after done the arthroplasty of the hip, congenital anal atresia, Crohn's disease, diverticulitis, a trauma, giant calculus of the bladder.[2–5] Chronic inflammation-related urinary leakage considers as the leading cause of VCF or chronic infections that invaded the deep muscle tissue, leading to local muscle contracture, eroded the pelvic cavity, and then invaded the bladder.[4] Maceration, difficulty in treating the infection, moisture-associated skin damage, malodor, inconveniences, and physical disability were the sign and symptoms of VCF besides the visible urine leakage.[6,7] In addition, untreated vesicocutaneous fistula causes persistent wetness and malodor. A vesicocutaneous fistula should be adequately treated when it is recognized, because it may give bothersome complaints, social effects to the patients, and a possibility of recurrence.[8] Proper surgical interventions is imperative because VCF can cause deathly complications such as cancer and sepsis.[9] In this case, we report a case of vesicocutaneous fistula following inguinoscrotal hernia surgical repair in 63-year-old man in order to provide an overview of the management of patients in similar cases.

CASE PRESENTATION

A 63-years-old man was referred to the Zainoel Abidin Hospital intermediate emergency room due to the fluid discharge from the left groin since 3 days ago. Its location was at the site of previous operative wound. The fluid was suspected to be the urine. He had a medical past history of strangulated hernia and was performed laparotomy explorative and ileostomy 2 weeks ago.

Clinical examination revealed normal vital signs. The patient was fully conscious. Vital signs 120/70 mmHg, pulse 78x/min, respiration 21x/min, temperature 37°C, appears with slightly pale conjunctiva and sclera no jaundice. On the patient's chest, the shape and motion are symmetrical, the right vesicular sound was the same as the left, there are no rhonchi, and there was no wheezing. The patient's abdomen was normal. A physical examination revealed there was a wet postoperative wound at the left groin. (Figure 1).

Laboratory test results demonstrated Hb was 12.5g/dl, hematocrite was 37%, white blood count was 9800/µL, thrombocyte was 741/µL, MCV was 76Fl, MCH was 26pg, ureum was 24mg/dL, blood creatinine was 0,90mg/dL.

Cystography with contrast was performed in Zainoel Abidin Hospital at 03-03-2021. The contrast appears to fill the bladder, and there was extravasation of contrast from bladder to distal end of the fistulous tract. It showed that there were multiple additional shadows. The confirmation of the result was multiple diverticles within vesica urinaria. (Figure 2).

After cystography revealed extravasation of contrast from bladder to distal end of the fistulous tract with multiple diverticles within vesica urinaria, we had an attentive discussion about the treatment, and then we planned to perform the repair of fistula and vesica urinaria. The septic and aseptic were performed. The exploration of vesica urinaria was performed through infraumbilical incision. When it was undergoing, the fibrotic tissue was found around the lateral aspect of vesica urinaria. We also found the sticky vesicocutaneous fistula that adhered to the surrounding tissue yet could still be freed. (Figure 3).

In the final step, we performed the repair of vesica urinaria. The bladder is then closed in two layers with 3-0 Chromic for the mucosa and running polyglycolic acid (vicryl) 2-0 for the muscular. After the retroperitoneal drain was performed, the postoperative wound is covered by the gauze. Then, the operation was accomplished.

Figure 1. The postoperative wound at the left groin. Picture from patient in Dr. Zainoel Abidin Hospital, 03-03-2021.

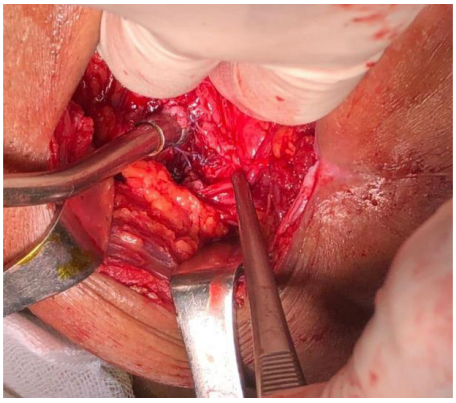

Figure 3. Intra-operative finding. Picture from patient in Dr. Zainoel Abidin Hospital, 03-03-2021.

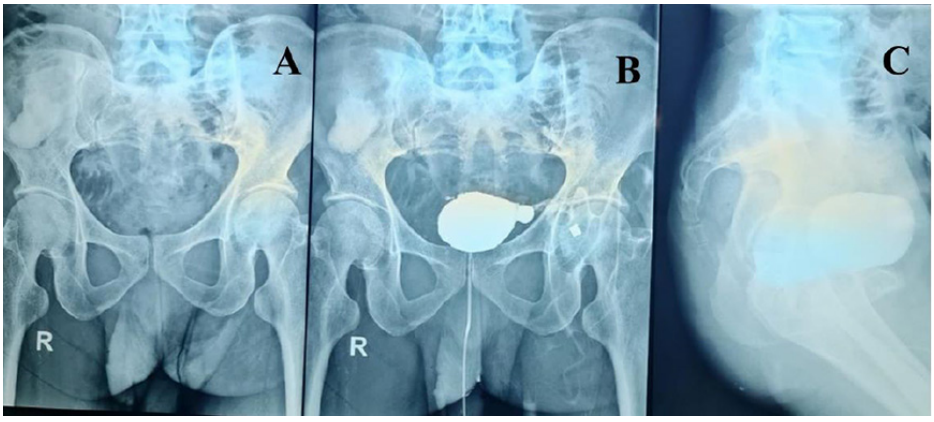

Figure 2. AP/Lateral Cystography. (A) AP view cystography without contrast, (B) AP view cystography with contrast, (C) Lateral view cystography with contrast. Picture from patient in Dr. Zainoel Abidin Hospital, 03-03-2021.

DISCUSSION

This case report focuses on a patient with a vesicocutaneous fistula which is a rare case.[10] Specifically, the urine drained at the inferior tunnel of the midline abdominal wound post laparotomy. The diverticulum of the bladder might be caused by a congenital condition or secondary due to bladder outlet obstruction.[11] Diverticulum of the bladder caused by congenital condition without the associated posterior urethral valve or a neurogenic bladder is rare. These kinds of diverticula are more extensive than those associated with secondary causes. These diverticula are caused by an inherent weakness in the bladder musculature.[12] The most common causes of vesicocutaneous fistula apart from extensive trauma with pelvic fracture, after radiation for pelvic malignancies are surgeries such as radical hysterectomy, hip arthroplasty, other reported cases of anecdotal vesicocutaneous fistula due to inguinoscrotal hernia, antenatal bladder aspiration, and bladder instability, and actinomycosis.[11]

Radiographic imaging is the conventional method of identifying fistulas. Fluoroscopy can see only the lesions that have formed. Sonography can be used but its poor sensitivity, especially in identifying complexity, size, and multiplicity, is rarely used in the identification of a fistula.[13] Another diagnostic tools such as intravenous urogram (IVU), voiding cystourethrogram (VCU), and cystoscopy possibly help us to make the diagnosis. Magnetic resonance imaging and computed tomography

(CT) are currently imaging modalities for the initial evaluation of patients with suspected pelvic fistula.[14] A more modern imaging form of magnetic resonance imaging (MRI) is one of the most sensitive methods for determining the exact location and complexity of the canal. This diagnostic tool has a sensitivity of over 90% and correlates well with surgical findings. CT multi-detector is an option for patients who cannot tolerate fluoroscopy or MRI.[15] As in our case, the best imaging modality is MRI, which identifies the exact location and with the surrounding tissue.

Although conservative management can be performed in asymptomatic patients with urachal remains, fistulectomy with primary bladder closure is a logical approach, especially for patients with recurrent infections.[16] Excision of fistula ducts and interposition with myocutaneous flaps are ideal for large fistulas. A case report established that 13 patients had vesicocutaneous fistule after underwent a radiotherapy for cervical cancer. They decided to try vacuum-assisted closure therapy (VAC) therapy for the open wound with spinal anesthesia. After VAC, the surgical wound healed and was filled with granulation tissue.[17] Another study states that 20 vesicocutaneous fistulae with varied etiology underwent the surgical procedure by incision the site of the fistule site. The patients were followed up every 3 or 6 months according to the condition in the first year after surgery. Improvement of the patient's condition existed.[18] Another case report treats the patient VCF by using omental flap interposition. According to the CT cystogram revealed no leakage from the bladder, and and in line with the disappearance of patient complaints.[8] Another procedure can be done by using skin grafting to cover the fistula.[9] Our limitation in this study were we did not explain patient progression, did not include re-evaluation after surgery.

CONCLUSION

Laparotomy should be performed carefully, and the surgeon should be aware of the organ injury. Inadvertent trauma to the organ during laparotomy might cause severe complications. In our patient VCF was treated by suturing the fistula after drainage.

DISCLOSURE

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Ethical Approval
The study is exempt from ethical approval in our institution.

Conflict of Interest
There is no conflict of interest of this study.

Author Contributions
All of the authors contribute in article preparation.

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