

Unusual delayed presentation of vesicocutaneous fistula as Meleney's gangrene

Usman Ismat Butt, Mohammad Hasan Asif, Usama Ahmed Ali, Umm e Kalsoom, Aymn Mazhar, Abrar Ashraf Ali

Abstract

Vesicocutaneous fistula (VCF) is a rare condition. It may be the result of trauma, radiation, surgery, malignancy or infection. Delayed VCF formation has been reported rarely in literature. We report an unusual presentation of a vesicocutaneous fistula which presented as an abdominal wall infection secondary to infection of obstructed urinary tract in an old case of bladder trauma and repair.

Keywords: Vesicocutaneous fistula, Delayed presentation, Abdominal wall infection.

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Introduction

A fistula is an abnormal communication between two or more epithelial lined organs. Urological fistulas are known to occur after a number of conditions such as hysterectomy, radiotherapy, trauma, diverticular disease, and congenital conditions. Vesicovaginal fistula develops between the bladder and vagina and is the result of gynaecologic surgery or complications of childbirth. Enterovesical fistulae are between the gut and bladder and are less common than vesicovaginal fistula. They usually occur because of inflammatory bowel disease, infiltrative cancer, and complications of diverticulitis. Vesicocutaneous fistula (VCF) occur between the bladder and external body surface and are usually the result of extensive trauma due to pelvic bone fracture, recurrent infections, radical pelvic surgery, radiation therapy, and bladder stone.¹

We report an unusual presentation of a vesicocutaneous fistula which presented as an abdominal wall infection secondary to infection of obstructed urinary tract in an old case of bladder trauma and repair.

Case Report

The medical history of our patient started in 1992 when he experienced blunt abdominal trauma. He underwent abdominal exploration for bladder rupture and bladder

King Edward Medical University, Lahore, Pakistan.

Correspondence: Usman Ismat Butt. **Email:** usmanismatbutt@yahoo.com

ORCID ID: 0000-0003-3650-2771

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repair was done. The patient reported that he had an extended hospital stay during which Foley catheter remained in place for a prolonged period. Post discharge period was uneventful until the last few months when he started having difficulty in passing urine.

After evaluation from a urologist, a diagnosis of urethral stricture was made and visual internal urethrostomy (VIU) was done two months prior to his presentation to Mayo Hospital/KEMU, Lahore. In spite of surgery, his symptoms persisted and started worsening. On further investigation he was noted to urinary tract infection as well. Despite management by the operating urologist, he had progressively increasing lower abdominal pain with diffuse abdominal wall swelling. Hence, he was referred to a tertiary care hospital for management of urosepsis.

He was initially managed on medical basis as urosepsis before presenting to the surgical emergency of Mayo Hospital/KEMU, Lahore, with complaints of lower abdominal pain and swelling in December 2023. Upon examination, the 52-year-old man was noted to have swelling with blisters and necrosis of skin on the lower abdomen. According to the patient, this had started about two weeks back. Initially as swelling, later becoming painful and red, and then eventually leading to blisters and skin changes. At presentation to the surgical emergency, he had a toxic pale look. His temperature was



Figure-1: Pre-operative picture of the abdominal wall infection.



Figure-2: Intra-operative picture showing fistulous communication between bladder and anterior abdominal wall revealed after debridement

39°C, pulse was 110 per minute, and blood pressure was 130/60 mm Hg. Chest was clear. Abdominal examination was otherwise normal except for a large necrotic patch of 15 x 12 cm in the hypogastrium below the umbilicus. It was tender with underlying crepitus. There was excoriation of the skin and blister formation along with areas of discoloration. (Figure 1). A provisional diagnosis of necrotising fasciitis (Meleney's gangrene) was made and the patient was prepared for debridement. His work up at presentation showed haemoglobin level of 8.3g/dl(13-17 g/dl), platelets $450 \times 10^3/\mu\text{L}$ (140-400 $\times 10^3/\mu\text{L}$), while leucocyte count was $18.9 \times 10^3/\mu\text{L}$ (3,6-11 $\times 10^3/\mu\text{L}$), with neutrophils being 95%. Renal function test and coagulation profile were unremarkable.

After optimisation, debridement was done under general anaesthesia during which he was noted to have necrotic skin and subcutaneous tissue which was excised till healthy margins. The dead necrotic tissue extended down to the rectus sheath which was exposed. Upon excision of the necrotic tissue, there appeared to be a yellow discharge from the anterior rectus sheath. Probing revealed communication with the urinary bladder (Figure 2). An Urology was involved. Separation of the fistulous communication with primary repair of the urinary bladder was done via the same incision. The rectus opening was debrided and closed primarily. Supra-pubic catheterisation was also done. The skin wound was left open and dressing was applied. Post-operatively, serial dressing was carried out in the ward. Partial closure of the wound was performed from the margins, followed by serial dressing and vacuum assisted closure.

The patient had a satisfactory recovery. He was discharged after partial wound closure and removal of the

supra-pubic catheter. Currently, he is on follow-up and is planned for a plastic surgery procedure to close the resulting abdominal wall defect.

Discussion

Vesicocutaneous fistula is a known complication of a number of disorders which results in an abnormal tract between the bladder and external body surface. It can be the result of trauma, radiation, surgery, malignancy, or infection. Delayed VCF formation has been reported rarely in literature.²

This patient had a previous history of abdominal trauma and bladder repair in 1992. He is a known diabetic for 15 years. He recently developed symptoms of urinary obstruction and had undergone an intervention for urethral stricture followed by documented urinary tract infection. It is believed that this obstruction led to the formation of a fistulous tract from the bladder to the previous incision on the abdominal wall due to suspected weakness at the previous repair site. Infection along this tract led to necrotising fasciitis of the anterior abdominal wall. However, the diagnosis of necrotising fasciitis is clinical as biochemical or histological specimens could not be obtained for examination.

Vesicocutaneous fistula formation has been documented to occur in the case of outlet obstruction, infection, and radiotherapy. In addition to the above risk factors, Assaker reported a case of a 67-year-old gentleman who also developed an abdominal wall abscess as a result of a diverting colostomy for colorectal carcinoma.³ Banihani had reported a similar case in which a 90-year-old male developed thigh abscess two years after undergoing a bladder injury repair because of a pelvic fracture. Similar to the present case, the patient had episodes of urinary tract obstruction before developing the abscess. Incision and drainage was done and a vesicocutaneous fistula was only discovered post-operatively when biochemical analysis of the discharge from the wound was done on suspicion.⁴ Yin reported another similar case of a patient who developed a thigh abscess. After incision and drainage, he was noted to have an underlying vesicocutaneous fistula. He had a history of radical prostatectomy and subsequent pelvic radiotherapy requiring intermittent self-catheterisation.⁴ Petru reported a case of abdominal wall abscess after radiation which is almost similar to the present case, the difference being that the present patient had a previous history of trauma and bladder repair.⁵

Based on literature review, it appears that an insult to the bladder in the form of trauma or radiation followed by obstructive or infective symptoms sometimes lead to an

impending fistula that can present as an infected collection.⁶ It seems unlikely that the fistula would have been present since the patient underwent bladder repair in 1992, however, there are case reports where patients developed vesicocutaneous fistula almost three decades following prostatectomy and radiotherapy.⁷

The management of VCF can be conservative or surgical depending on its mode of presentation. Indwelling catheter is usually required to decompress the bladder and allow for healing.⁷

Conclusion

Bladder injury can present in a number of ways, sometimes bizarre. Previous history is often the first clue to the diagnosis. However, patients may present acutely with the previous history being obscure and thus the condition is only documented later when the patient's symptoms persist.

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AUTHOR'S CONTRIBUTION:

UIB: Concept, data acquisition, drafting, interpretation, revision, final approval and agreement to be accountable for all aspects of the work.

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