Urology Case Reports 3 (2015) 201–203

Contents lists available at ScienceDirect

Urology Case Reports

journal homepage: www.elsevier.com/locate/eucr

Oncology

Enterovesical Fistula Secondary to Squamous Cell Carcinoma of the Bladder

William Sellers [a,*], Robert Fiorelli [b]

[a] Geisinger Wyoming Valley, 1000 East Mountain Blvd, Wilkes-Barre, PA 18702, USA
[b] Fiorelli Urology Associates, 1155 Hwy 315 Blvd, Wilkes-Barre, PA 18702, USA

ARTICLE INFO

Article history:
Received 6 June 2015
Accepted 18 June 2015
Available online 14 August 2015

Keywords:
Enterovesical fistula
Squamous cell carcinoma
Bladder carcinoma

ABSTRACT

Enterovesical fistulas are a well-known complication of inflammatory and malignant bowel disease. Bladder carcinoma, however, is an extremely rare etiology. We describe a case of squamous cell carcinoma of the bladder with an enterovesical fistula. This rare phenomenon has never been previously reported in western literature. We review the diagnosis, work up and treatment of enterovesical fistulas. Unfortunately, the prognosis for these highly invasive tumors is very poor and the treatment is often palliative. The high morbidity and mortality makes management of these patients exceptionally challenging.

Introduction

Enterovesical fistulas are a well-known complication of inflammatory and malignant bowel disease. Bladder carcinoma, however, is an extremely rare etiology and fistulas secondary to primary squamous cell carcinoma of the bladder are even rarer. To our knowledge there are no previously reported cases in western literature, with only one prior case reported out of Taiwan. Below we describe a case of chronic diarrhea in the setting of antibiotic resistant urinary tract infections caused by squamous cell carcinoma of the bladder with an enterovesical fistula.

Case presentation

A 61 year old Caucasian female presented to outpatient urologist office with recurrent antibiotic resistant urinary tract infections. The patient underwent cystoscopy which revealed a necrotic bladder mass. She was scheduled for resection of the mass, but the procedure was canceled due to uncontrollable diarrhea. She had a colonoscopy which was negative for any abnormalities. Her symptoms persisted over the next 2 months until she was admitted to the hospital with hematochezia, new onset atrial fibrillation, anemia, leukocytosis, metabolic acidosis and urosepsis.

A CT of the abdomen revealed mild diffuse bladder wall thickening and a 3.7 × 5.2 × 8.4 cm intraluminal neoplastic bladder mass. There was oral contrast seen entering the urinary bladder, as well as, large amount of gas consistent with an enterovesical fistula. A foley catheter was placed and feculent material was noted to be draining from the bladder. The patient was taken to the operating room exploratory laparotomy, enterolysis, and takedown of enterovesical fistula. She was found to have a large tumor mass emanating from the bladder extending into the pelvic sidewall, the small bowel and the serosa of the sigmoid colon.

Pathological examination revealed infiltrating squamous cell carcinoma arising from the bladder with overlying urothelial epithelial dysplasia. The tumor extensively infiltrated the bladder wall from lamina propria to the full thickness of the muscularis propria, the perivesicular adipose tissue, through the serosal aspect of the bowel wall and involving the full thickness of the resected small bowel wall. Lymph nodes and margins were negative for tumor. Post-operatively the patient did well. She had return of normal bowel and bladder function. She was discharged on postop day 7 and had a normal cystogram on postop day 11 (Figs. 1–3).

Discussion

First described in 1888 by WH Cripps, Enterovesical fistulas are an abnormal connection between the epithelialize surface of the bowel and the bladder. They are responsible for 2–3 patients per 10,000 admissions, 1 out of every 3000 surgical admissions, and carry an annual incidence of 0.5 per 100,000. The most common causes overall are inflammatory (52%), neoplastic (35%), and traumatic (16%). Among the neoplastic causes, primary urologic carcinomas account for 16% of cases and gastrointestinal carcinomas make up

* Corresponding author.
E-mail address: wjsellers@geisinger.edu (W. Sellers).

http://dx.doi.org/10.1016/j.eucr.2015.06.004

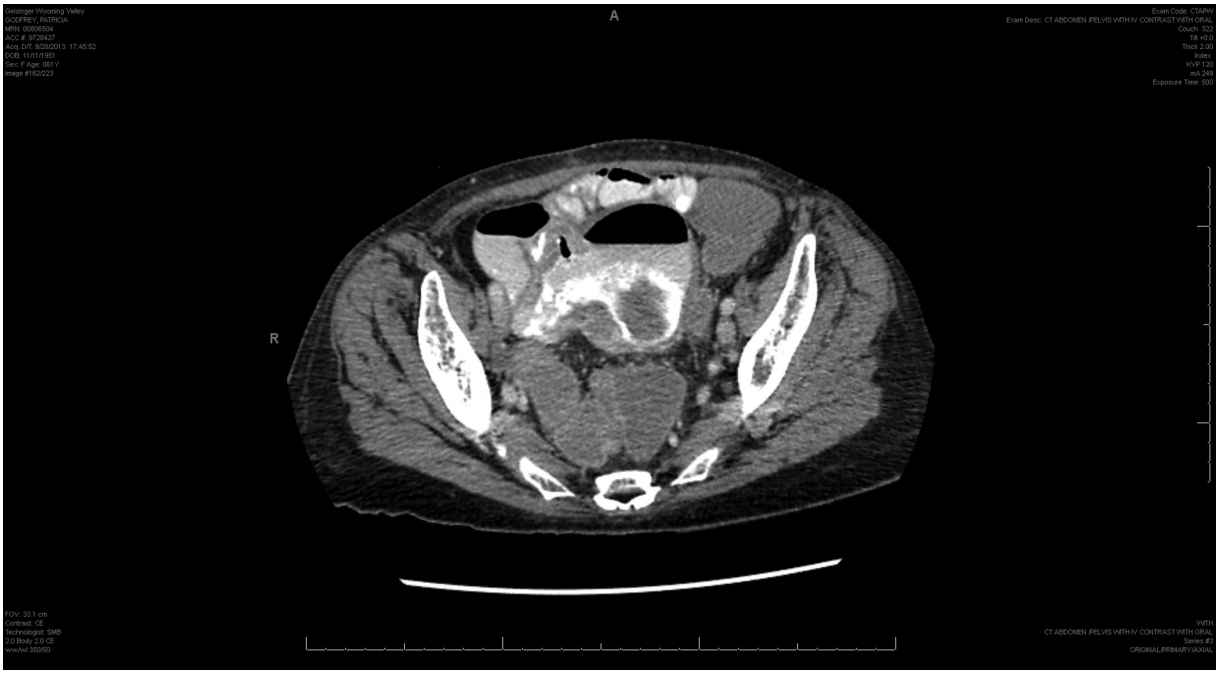

Figure 1. CT scan of fistula with oral contrast passing into bladder.

77% of cases. Just 5% of all enterovesical fistulas are due to bladder carcinomas.[1]

Greater than 90% of malignant tumors of the bladder are urothelial cell carcinoma. Squamous cell carcinoma is the second most common malignant tumor of the bladder, but accounts for just 5% in industrialized nations. The incidence is far greater in areas where *Schistosoma haematobium* in endemic, such as Africa and the Middle East where it accounts for up to 50–75% of cases. The infrequency of squamous cell carcinoma in the US when compounded by the rarity of enterovesical fistulas arising from primary bladder carcinomas (16%), make this case presentation particularly unique.[2] Indeed there are no previously reported cases of enterovesical fistula secondary to squamous cell carcinoma in western literature.

Though initially the cause of our patient's symptomatology was unclear, her clinical presentation was very typical. Patient's most commonly present with urinary tract infection, pneumaturia, fecaluria and hematuria. They may present with the classic Gouverneur syndrome – a constellation of symptoms including suprapubic pain, frequency, dysuria, and tenesmus. Our patient's history of recurrent urinary tract infections resistant to antibiotics is also classically seen. While fecaluria is pathognomonic for the presence of a fistula, pneumaturia can also be caused by gas-producing organism in bladder. Though the patient in this case presented with chronic diarrhea due to her fistula, in the majority of cases fluid flows from the bowel to the bladder. The rate of rectal micturition is only 19%.[3]

Most commonly, the diagnosis of an enterovesical fistula is made on a clinical basis, but the work up and confirmation of the diagnosis can be difficult. Though there are a variety of different diagnostic modalities, there is no consensus on a diagnostic algorithm and no clear gold standard study exists. Useful diagnostic studies include CT scan, MRI, cystoscopy, barium enema, poppy seed test and colonoscopy. CT scan may demonstrate air or contrast within the bladder, thickening of the bladder wall, or an

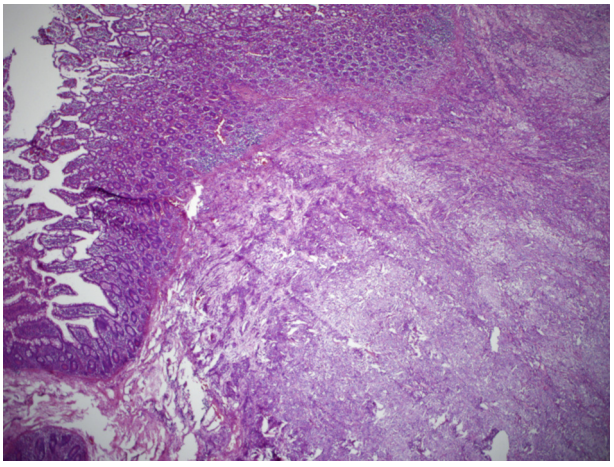

Figure 2. Low power (4×) SCC invades bowel wall of small intestine.

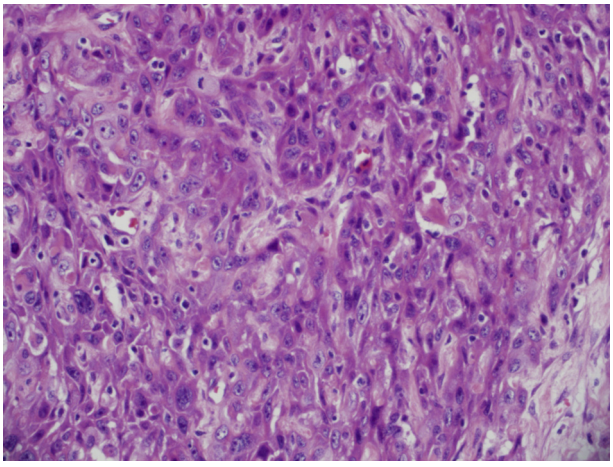

Figure 3. High power (40×) typical morphology of squamous cell carcinoma.

extraluminal gas-containing mass adjacent to the bladder.[4] Ultimately, the most definitive test is exploratory laparotomy.

No definitive study exists of the treatment outcomes for enterovesical fistula due to carcinoma. This diagnosis confirms a very poor prognosis. All these tumors are T4 by definition due to extravesical spread and there is a >85% 2 year mortality rate if left untreated.[5] Squamous cell carcinoma of the bladder has been shown to have a worse prognosis due to a locally advanced stage at the time of presentation. Surgical treatment for these patients is, therefore, often palliative. The symptomatology can be so devastating that a consensus exists to offer palliative surgical treatment unless the patient is terminally ill. The reported morbidity and mortality for any surgical intervention for advanced neoplastic disease remains very high and prognosis remains dismal.[5] In much of the surgical literature, successful surgery is defined as greater than 60 days survival following any procedure.

Conclusion

Enterovesical fistula secondary to squamous cell carcinoma of the bladder is an extremely rare phenomenon. It is our belief that the above report is the first in western literature. Enterovesical fistula due to any bladder carcinoma can be severely debilitating to the patient. Unfortunately, even palliative treatment has a significant rate of morbidity and mortality making this disease incredibly difficult for both patient and provider.

Conflict of interest

The authors declare that there are no conflicts of interest.

References

1. Carson CC, Malek RS, Remine WH. Urologic aspects of vesicoenteric fistulas. *J Urol*. 1978;119:744.
2. Turo R, Cross W, Whelan P. Bladder Cancer. *Medicine*. 2012;40:14–19.
3. Vidal SJ, Pradell TJ, Palou RJ, et al. Review of 31 vesicointestinal fistulas: diagnosis and management. *Eur Urol*. 1986;12(1):21–27.
4. Golabek T, Szymanska A, Szopinski A. Enterovesical fistulae: aetiology, imaging, and management. *Gastroenterol Res Pract*. 2013.
5. Stein JP, Skinner DG. Results with radical cystectomy for treating bladder cancer: a reference standard for high grade, invasive bladder cancer. *BJU Int*. 2003;92:12.