Case Report

Received: July 2, 1993

Accepted: September 2, 1993

Urol Int 1994;52:113-114

Spontaneous Bladder Rupture following Enterocystoplasty Can Be Treated Conservatively

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Key Words

Bladder augmentation
Bladder rupture
Etiology
Treatment

Abstract

Spontaneous bladder rupture following enterocystoplasty has been reported recently. The etiology remains unclear but appears to be multifactorial. Common factors are a high outlet resistance with total urinary continence and the presence of an augmented, dysfunctional native bladder, which may result in the development of high intravesical pressures or increased wall tension. We present a case of spontaneous bladder rupture 4 weeks following enterocystoplasty in which a segment of detubularized ileum was used to augment a contracted bladder. Our patient was treated by continuous bladder drainage for 21 days, antibiotics and appropriate supportive care.

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Introduction

The use of ileum, cecum and sigmoid colon to enlarge the bladder has become an important aspect of the management in many patients with vesical dysfunction [1-3]. Known complications of enterocystoplasty include metabolic disorders, incontinence, voiding difficulty, ureteral reflux urolithiasis, urinary tract infection and neoplasm [1, 4, 5]. A poorly recognized complication is spontaneous rupture following augmentation enterocystoplasty, which has been reported occasionally [6-10]. We report a further case of spontaneous bladder rupture following enterocystoplasty.

Case Report

A 66-year-old female patient underwent an enterocystoplasty using a detubularized ileal segment to augment a small contracted bladder. Postoperative recovery was uneventful. One month after reconstruction, the patient presented with an acute onset of lower abdominal pain. Diagnosis was made by cystogram, which demonstrated perforation in the craniodorsal part of the augmented bladder. In the absence of frank peritonitis, she was treated by continuous bladder drainage for 21 days, broad spectrum antibiotics and appropriate supportive care including pain medication and laxatives. Cys-tography revealed no extravasation of contrast medium after 10 days of continuous bladder drainage.

Subsequently, intermittent catheterization was instituted, followed by urodynamic evaluation to confirm a low pressure reservoir.

Discussion

Historically, the use of ileum for augmentation of the small contracted bladder was first performed by Mikulicz [11] in 1899. The concept of using bowel tissue to enlarge the bladder is now widely accepted. Many investigators have demonstrated the versatility of bowel in reconstructing the lower urinary tract [3, 5, 12-15].

Complications of augmentation enterocystoplasty, which most often include metabolic disorders, inconti-

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0042-1138/94/0522-0113

\$5.00/0

nence and voiding problems, urinary tract infection and stone formation and malignancy [1, 4, 5], have been investigated in some detail, whereas spontaneous rupture of augmentation enterocystoplasty has only been reported occasionally [6-10].

Factors predisposing to spontaneous 'bladder' rupture include urinary retention from either mucous plugs or poor patient compliance with catheterization [7], high intraluminal pressures due to bladder outlet obstruction [8] or traumatic perforation secondary to intermittent self-catheterization [7].

Management regimes for the perforated bladder include drainage and broad spectrum antibiotics. Unfortunately, cystography often fails to diagnose these ruptures. False-negative cystography in cases of bladder perforation has also been reported in unaugmented bladders after trauma [16, 17]. Therefore, in the majority of cases, lapa-rotomy has been considered necessary for diagnosis, definitive drainage and placement of a suprapubic catheter through the bladder wall [9]. In contrast, nonoperative management has been successful in the absence of frank peritonitis or sepsis [7]. Our patient was treated by continuous bladder drainage and broad spectrum antibiotics. Cystography revealed no extravasation of contrast medium already 10 days after continuous bladder drainage. Subsequent management included closely monitoring adherence to an intermittent catheterization schedule and urodynamic evaluation to confirm a low pressure reservoir.

In summary, we present a case of spontaneous bladder rupture following enterocystoplasty in which a detubular-ized ileal segment was used to augment a small contracted bladder. As peritoneal signs and symptoms may be masked, ancillary diagnostic modalities should be used to establish the diagnosis. Management should always include broad spectrum antibiotics and continuous bladder drainage, while operative intervention can safely be withheld in the absence of frank peritonitis or sepsis [7].

References

- Mitchell ME, Kulb TB, Backes DJ: Intestino-cystoplasty in combination with clean, intermittent catheterization in the management of vesical dysfunction. *J Urol* 1986; 136:288. Piser JA, Mitchell ME, Kulb TB, Rink RC, Kennedy HA, McNulty A: Gastrocystoplasty and cololecystoplasty in canines: The metabolic consequences of acute saline acid loading. *J Urol* 1987; 138:1009.
- Resnick MI, Caldamone AA: The use of large and small bowel in urologic surgery. *Urol Clin North Am* 1986; 13.
- Kosko J, Kursh ED, Resnick MI: Metabolic complications of urologic intestinal substitutes. *Urol Clin North Am* 1986; 13:193. Goldwasser B, Webster GD: Augmentation and substitution enterocystoplasty. *J Urol* 1986; 135:215.

Sheiner JR, Kaplan GW: Spontaneous bladder 12 rupture following enterocystoplasty. J Urol 1988;140:1157.

Rushton HG, Woodard JR, Parrott TS, Jeffs 13 RD, Gearhart JP: Delayed bladder rupture after augmentation enterocystoplasty. J Urol 1988;140:344. 14

Rao MS, Bapna BC, Bhat VN, Gupta CL, Katariya RN, Vaidyanathan S: Blow out of a colocystoplasty loop owing to bladder neck ob- 15 struction. J Urol 1977; 117:667.

Elder JS, Snyder HM, Hulbert WC, Duckett 16 JW: Perforation of the augmented bladder in patients undergoing clean intermittent catheterization. J Urol 1988;140:1159.

Möllhoff S, Goepel M, Bex A: Spontaneous perforation of augmented bladder after exstro- 17 phy repair. Urol Int 1991;47:167.

Mikulicz J: Zur Operation der angeborenen Blasenspalte. Zentralbl Chir 1899;26:641.

Servadio C: Neurogenic bladder treated by subtotal cystectomy and ileocystoplasty: A preliminary report. J Urol 1967;98:472. Kass EJ, Koff SA: Bladder augmentation in the pediatric neuropathic bladder. J Urol 1983; 129:552.

Linder A, Leach G, Raz S: Augmentation cys-toplasty in the treatment of neurogenic bladder dysfunction. J Urol 1983;129:491. Dounis A, Gow JG: Bladder augmentation – A long term review. Br JUrol 1979;51:264. Liebermann AH, Walden TB, Bogash M, Pollack HM, Kendall AR: Negative cystography with bladder rupture: Presentation of 2 cases and review of the literature. J Urol 1980; 123: 428.

Nowak A, Zielinski J: Difficulties in bladder rupture diagnostics. Eur Urol 1977;3:351.

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