

Hutch bladder diverticulum - unusual cause of adult obstructive uropathy

Pedro Simões de Oliveira, Tiago Ribeiro de Oliveira, David Martinho, Tomé Lopes

Hospital de Santa Maria, Urology Department, Lisbon, Portugal.

Summary

Objective: To present a case of a Hutch bladder diverticulum containing the ureteral opening.

Material and methods: An 83-year-old man presented a giant bladder diverticulum causing obstructive azotemia due to bilateral ureteral compression. Endoscopy revealed an unusual and potentially harmful anatomical alteration: the left ureteral orifice was inside in the diverticulum. Despite bladder emptying, the diverticulum remained full, causing bilateral ureteral compression. The patient underwent diverticulectomy with ureteroneocystostomy.

Result: Post-operative follow-up showed renal and voiding functions restoration.

Conclusion: Although clinical watching is a valid option in patients with Hutch diverticulum, reconstructive surgical approach, especially when complications are present, should be the standard of care.

KEY WORDS: Bladder; Diverticulum; Ureteral obstruction.

Submitted 26 April 2017; Accepted 26 April 2017

INTRODUCTION

Bladder diverticulum results from de herniation of the urothelium through the muscular layer of the bladder wall, being formed by mucosa, lamina propria, few muscular fibers and adventitia.

Bladder diverticula are classified as congenital or acquired. Congenital ones usually appear in young ages with a maximum incidence before 10 years. Usually unique, almost exclusively in males, located postero-medially to the ureteral ostium and resulting from the weakness of the bladder wall in this portion.

Acquired ones generally are due to high intra-vesical pressure caused by infra-vesical obstruction or detrusor-sphincter dyssynergia. More rarely are due to wall debility after bladder surgery. Often develop in males after sixth decade, in about 12% of patients with infra-vesical obstruction (1). Usually multiple and associated with important trabeculation of the bladder wall. If the ureteral ostium is included in the bladder diverticulum, it is called Hutch diverticulum, which is a rare entity, typically in young ages, with few cases identified in the adult.

CASE REPORT

An 83-year-old previous healthy man who underwent a trans-urethral resection of the prostate three months

before, presented in the emergency department with acute renal failure (creatinine 4.7 mg/dL). Physical examination showed a distended abdomen, dull to percussion at low quadrants and painless to palpation.

Reno-vesical echography showed bilateral ureterohydronephrosis, a voluminous formation containing fluid occupying the lower abdominal quadrants in continuity with the bladder.

After inserting an indwelling catheter, the patient maintained the bilateral obstruction, despite emptying the bladder, with diverticular repletion. He then underwent percutaneous catheterization of the diverticulum.

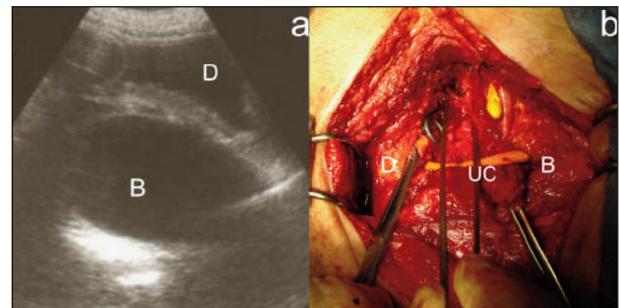
Cystoscopy showed a voluminous bladder diverticulum with a narrow neck localized in the posterior left wall of the bladder, right ureteral ostium was correctly visualized in the anatomic position, and left ureteral ostium was located inside de diverticulum.

The patient underwent diverticulectomy with left ureteral reimplantation by *Ricard-Puigvert technique*.

Post-operative follow-up presented with no complications, with resolution of the obstructive uropathy, normal renal function (creatinine 1.1 mg/dL), Q_{max} 18 mL/s in the uroflowmetry performed 2 months later.

Figure 1.

Echography: voluminous bladder diverticulum 1a. Diverticulectomy: intradiverticular ureteral meatus 1b. (B - bladder; D - diverticulum; UC - left ureteral catheter).



CONCLUSIONS

Bladder diverticulum usually appear in patients with infra-vesical obstruction that causes intra-vesical high pressure (1). The congenital weakness of the detrusor in the peri-ostium location seems to contribute to the high frequency in this area. *Bauer et al.* proposed that the

No conflict of interest declared.

bladder and the trigone have different embryological development, which can lead to weakness in this point (ureteral ostium) (2). Also *Johnson et al.* posted that diverticula occur mainly in this area due to muscular weakness in the ureteral junction with the trigone (3). With progressive diverticular growth, the ureteral ostium may be incorporated (*Hutch diverticulum*), as described in our case (1).

Despite being often small, asymptomatic and with no need for treatment, some diverticula may cause high morbidity. These usually are in association with ipsilateral vesicoureteral reflux, and sometimes may cause uni or bilateral obstruction. Apart from these complications, it can also be related with infection or calculi formation (1). Rarely it can be in association with cancer (< 5%), due to the chronic irritation of the mucosa.

In the described case, the obstructive uropathy was caused by extrinsic ureteral compression due to the difficulty in voiding de diverticulum because of the narrow neck. Diagnose evaluation should include, beside echography, intravenous urography and cystoscopy in order to

best characterize anatomic location and identification of the intradiverticular ureteral ostium, as described in our case. CT with contrast and urodynamics can also be performed.

Clinical watching is a valid option in patients with Hutch diverticulum, but if in association with complications, diverticulectomy with reimplantation of the ureter should be performed. Infravesical obstruction should always be treated previously or at the same time as surgery.

REFERENCES

1. Rovner ES. Bladder and urethral diverticula. In: Kavoussi LR, Novick AC, Partin AW, Peters CA (Ed), *Campbell Walsh Urology*, 9th ed. Philadelphia: WB Saunders Company, 2007; 2361.
2. Bauer SB, Retik AB. Bladder diverticula in infants and children. *Urol.* 1974; 3:712.
3. Johnson JH. Bladder disorders. In: William DI, Johnston JH (Ed). *Pediatric Urology*. London: Butterworth Scientific. 1982; p.225.

Correspondence

Pedro Simões de Oliveira, MD (Corresponding author)
pedrosimoesdeoliveira@gmail.com

Tiago Ribeiro de Oliveira, MD
tiagoribeirooliveira@sapo.pt

David Martinho, MD
martinho_david@hotmail.com

Tomè Lopes, MD
tomematoslopes@gmail.com
Avenida Professor Egas Moniz 1649-035 Lisbon, Portugal