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CASE REPORT

A Long-Term Follow-Up of Cystitis Cystica and Glandularis: Two Case Reports

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Abstract

Background: Cystitis cystica and glandularisare benign bladder lesions resulting of transformation of urothelium.It is diagnosed frequently incidentally or may manifest with non-specific urinary tract symptoms. Although regarded as innocuous it may lead to upper urinary tract obstruction.

Cases Presentation: We report two cases ofcystitis cystica and glandularis in adultmale patients complicated with renal impartment. The firstpatient underwent respectively percutaneous nephrostomies, internal stents and bilateral ureteral reimplantation. In the second we performed bilateral internal stents that are regularly changed.

Conclusion: Theses cases demonstrate the challenge to manage severe complications of a benign pathology. Given the potential complicationsand recurrence of this pathology, a regular follow up is a necessary.

Keywords: Cystitiscystica, Cystitisglandularis, Hydronephrosis, Ureteral Reimplantation.

1. Introduction

Cystitis cystica develops when invaginated urothelial nests in superficial lamina propria with cystic dilatation forming luminal space. There are no cuboidal or columnar luminal cells. Cystitis glandularis consists of cystitis cystica with luminal cuboidal or columnar lining cells.In general, transformation or metaplasia of the urothelium occurs in response to local stimulus, with a variety of benign morphologic variants [1]. The over-all incidence of cystitis glandularis in the clinical setting has been estimated at 0.1 to 1.9% [2]. The likelihood of success with conservative measures used for small and focal lesions is very good but recurrence may occur [3].Two cases of recurrent cystitis cystica and glandularis in male patients have been reported in this article. Although regarded as innocuous in the most cases, cystitis cystica and glandularis may obstruct the ureteral openings and cause renal dysfunction. We aimed to present a long time follow up of two rare cases of cystitis cystica and glandulariswith renalimpairment.

2. Cases Presentation

Case 1

A sixty-nine-year-old mal patient with ahistory of hypertension, diabetesmellitus has been followed up in urology department for fifteen years for lower urinary tract symptoms. Ultrasoundshowed bilateral hydronephrosis.Cystoscopy was performed and showed a suspicious lesion one the trigonewith bilateral obstruction of the ureteric orifices.Bilateral percutaneous nephrostomies were subsequently inserted because of bilateral hydronephrosis. The nephrostomy stents were removed a few days later

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and was replaced by bilateral internal stents via anterograde approach. He carried outtransurethral resection of the bladder followed by pathological investigation of the obtained specimens.

On histological examination, the specimens concerned fragments of mucosa and bladder muscularis with preserved architecture.The bladder mucosa consisted of an epithelium containing five to six layers of regular urothelial cells without cytonuclear atypia.

This epithelium invaginated into the underlying chorion, and constituted cystic-looking formations sometimes centered by eosinophilic material.

The edematous chorion contained a discrete mononuclear inflammatory infiltrate, and many congestive vessels.The muscularis consisted of regular smooth muscle fibers without cytonuclear atypia.

The patient underwent bilateral ureteral reimplantation because of persistent ureteral obstruction.

Actually, after fifteen years follow up, at the last control, physical examination wasunremarkable. His temperature was 36.5°C, blood pressure was 146/83mmHg, pulse rate 87 beats per minute. Biological analysis brought out elevated creatinine level at 151µmol/l and estimated glomerular filtration rate of 50ml/min/1.73m2.

Urinalysis was quite normal. IPSS score was evaluated at 9/35. Uroflowmetry parameters were normal with Qmax 15ml/s and insignificant post-void residual urine. He is still followed up both in urology and in nephrology.

Case 2

A fifty-five-year-old man with past medical history of severe hypertrophic cardiomyopathy has been followed up in urology for thirteen years because of recurrent cystitis cystica and glandularis.

Allergically, the patient experienced an anaphylactic choc to cefazoline. He underwent transurethral resection of the bladder four times (2010, 2011, 2016, 2017) because of lower ureters obstruction.Finally, bilateral internal stentswereinserted andwere changed twice every year with a regular follow-up in urology and nephrology.

The histological results of all resections were in favor of cystitis cystica and glandularis (Figure1). We will present the results of the latest pathological analysis.

2.1 Histological findings

Some specimens interested a prostate tissue consisting of a glandular proliferation of scalloped appearance, making some endoluminal projections. These glands were lined by a columnar epithelium with a myoepithelial layer. Because of fibrosis, the interstitial tissue was punctuated by some lymphoplasmacytic elements.

The other specimens interested a bladder type of urothelial tissue, bordered byabraded or hyperplasticepithelium, delimiting a chorion

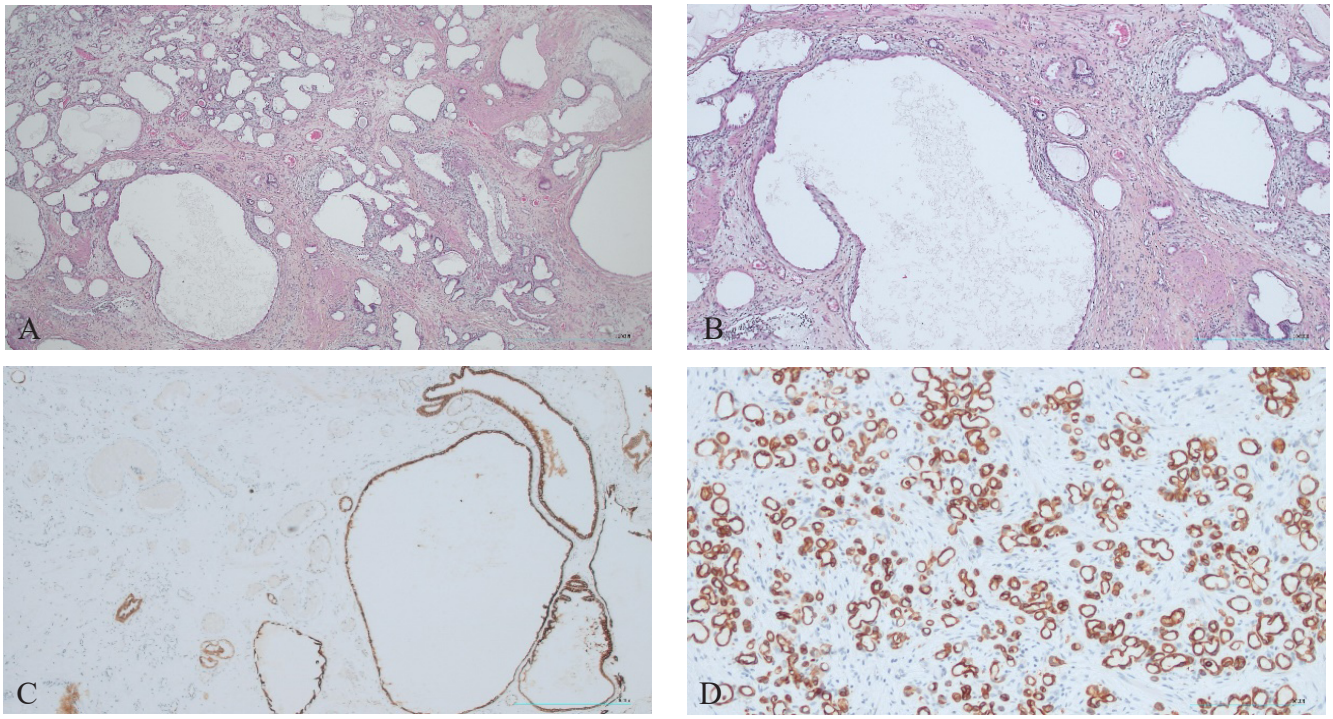

Figure 1. *Cystitis cystica:hematoxylin and eosin × 200 (A) and x 400 (B); Immunohistochemical cytokeratin7 × 400 (C) Cytokeratin7 × 1000 (D): Nephrogenic metaplasia*

containing many glands various in size sometimes dilated or microcystic, lined by a columnar epithelium. These glands were arranged in a chorion dissociated by a lymphoplasmacytic inflammatory infiltrate.It was noticed in area numerous islets of Von Brünn. There were also some bundles of smooth muscle fibers without particularity.

On his recent control, he was clinically stable. On laboratory examination,serum creatinine level was stable at 154µmol/l, estimated glomerular filtration rate of 42 ml/min/1.73m2, urinalysis was normal, hemoglobin 14.1g/dl.Uroflowmetry was normal. It is noticed that the patient's serum renal function showed no return to normal value despite the decompressing effect of the bilateral internal stents.

3. Discussion

3.1 Histological Findings

Von Brunn's nests are nests of urothelial cells which show no atypia. They develop as an invagination of the surface urothelium into the lamina propria which subsequently disconnect from the surface[1].

Cystitis cystica occurs with cystic dilatation of von Brunn's nests, where the nests acquire a luminal space and may become markedly dilated. Von Brunn's nests, undergo cavitation to form fluid-filled cystic structures.Cystitis glandularis appears whenthere is metaplasia in a mucous secreting epithelium.

The luminal epithelium of the cysts is then replaced by mucin secreting cuboidal or columnar cells [1,4,5]. The etiology of cystitis cystica remains unknown. It is believed that cystitis cystica is mainly due to chronic irritation of the bladder epithelium [1].

3.2 Clinical Features

Majority of cystitis cystica and glandularis is asymptomatic incidental findings during cystoscopy. In some symptomatic patients, the most common presenting complaints are hematuria, irritative lower urinary tract symptoms, and rarely, upper urinary tract obstruction, as were our two patients. Recurrent urinary tract infections may infrequently be associated[5].

Cystitis cystica and glandularis causing bilateral hydronephrosis and renal function are uncommon even.In very rare and severe cases, bilateral ureteric obstruction may lead to impairment of renal function as in our two patients.There were bilateral hydronephrosis and renal dysfunction.

According to the English literature, Zhu et al reported a case of recurrent cystitis cystica andglandularis causing obstruction but it was unilateral obstructionleading to hydronephrosis [6].Demirer described a casewith bilateral ureterovesical obstruction leading to bilateral ureterohydronephrosis which was managed by transurethral resection[7]. Bhana et al presented an extensive cystitiscausing a prolonged bilateral ureteric obstruction resulting in end-stage renal failure[8].

3.3 Diagnosis

Diagnosis of cystitiscystitis cystica andglandularisis based upon histopathology examination of biopsy specimens or the trans-urethral resection specimens of the urinary bladder lesions.

3.4 Treatment

A variety of treatment options are ranged from conservative to aggressive. Firstly, identify, treat or eliminate the underlying predisposing source of chronic bladder irritation is mandatory. Thisconsists of eradicating urinary tract infections with appropriate antibiotic treatment, replacing chronic indwelling catheters with clean intermittent catheterization, or treating bladder calculi[8].

The second stage of treatment depends of the symptoms of the patient.

Transurethral resection should be required in case of complications of the disease like recurrent hematuria or features associated with bladder outlet obstruction or obstruction of the ureteric orifices [9].

Patients presentsevere bladder dysfunction with decreased bladder capacity may benefit from a bladder augmentation. In patients with persistent ureteral obstruction despite transurethral resections, ureteral reimplantation is indicated [10].Radical cystectomy is the most aggressive yet successful surgery performed in highly selected cases [11].

In our first patient ureteral reimplantation have been performed because of persistent ureteral obstruction. The second patient is followed up with regular change of bilateral JJ stents.

4. Conclusion

Cystitis cystica and cystitis glandularisare a very common incidental finding. Cystoscopic biopsy or transurethral resection of the bladder is mandatory, as the diagnosis is histological.

The treatment is usually achieved by treating the underlying cause, however, surgical treatment may be indicated in symptomatic patients, such as in our case. Their recurrence and risk of upper tract deterioration do warrant close follow up.

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