Cystitis Cystica Presenting as Multi-loculated Large Bladder Cysts in a Patient with Lower Urinary Tract Symptoms

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ABSTRACT

Cystitis cystica is a common benign histopathological finding on cystoscopic biopsy and has a typical macroscopic appearance of multiple small cystic-looking lesions in the bladder on cystoscopy. It may be incidental or related to urinary tract infection or inflammation. We describe a rare case of a patient presenting with lower urinary tract symptoms (LUTS) who underwent transurethral resection of large multi-loculated bladder cysts which were suspicious for bladder malignancy on imaging; but histology turned out to be cystitis cystica.

Keywords: Cystitis cystic; large bladder cysts.

1. INTRODUCTION

Cystitis cystica is a common benign histopathological finding on cystoscopic biopsy and has a typical macroscopic appearance of multiple small cystic-looking lesions in the bladder on cystoscopy. This is the first known case report of a patient presenting with lower urinary tract symptoms who underwent transurethral resection of large multi-loculated bladder cysts.
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urinary tract symptoms (LUTS) who underwent transurethral resection of large multi-loculated bladder cysts which were suspicious for bladder malignancy on imaging; but histology turned out to be cystitis cystica.

2. PRESENTATION OF CASE

This is a 70 years old Malay male, who first presented with lower urinary tract symptoms (LUTS) of urinary urgency, associated with nocturia. There were no other LUTS such as poor flow, hesitancy or dysuria. Physical examination was unremarkable; digital rectal examination revealed a 3.5 finger breath prostate. Bedside ultrasound noted a hypoechoic lesion at the bladder base. Urine culture grew Escherichia coli for which he was treated with antibiotics. Cross sectional imaging was advised and in view of borderline renal impairment, he underwent a computed tomography scan of the kidneys, ureter and bladder (CT KUB) without contrast. This scan did not show any obvious bladder lesions (Fig. 1). However, a subsequent MRI prostate which was done for evaluation of elevated prostate specific antigen showed a large multi-loculated cystic mass within the urinary bladder lumen in the trigone region (Figs. 2 and 3). This mass measures 5.6x3.3x3.1 cm with an enhancing solid component medially which is continuous inferiorly with the prostatic urethra. Wall thickening and enhancement of the distal ureters were also noted. In view of its atypical appearance of a large bladder mass with an enhancing solid component on MRI prostate, he underwent transurethral resection of the bladder tumour. Intraoperative findings noted predominately two large cysts noted over the trigone, close to the right/left/bilateral the ureteric orifice, with surrounding smaller cystic lesions (Fig. 4). The cysts were deroofed which revealed normal underlying bladder mucosa. No solid lesions were noted. Mucosa from thecyst as well as surrounding biopsies of erythematous patches were taken and the histology returned as cystitis cystica. Ureteroscopy was not attempted in view of the proximity of the ureteric orifices after the transurethral resection of the lesions.

Post-operatively the patient was well, and he reported an improvement in his LUTS on follow up. His renal function had recovered and he underwent a follow up CT intravenous pyelogram, which showed mild bladder wall thickening at the base with no filling defect noted, and the distal ureters were normal with no enhancement noted.

3. DISCUSSION

Bladder cysts are uncommon clinical entities and differentials may include cystitis cystica, cystitis glandularis, urachal cyst, or even a cystic neoplasm. [1] They are usually asymptomatic and may be diagnosed incidentally, or may present with lower urinary tract symptoms, urinary tract infection or even hematuria. Most of these bladder cysts are small, and large bladder cysts are less commonly encountered. [2] An accurate histological diagnosis is important as it may have implications on the management and follow up of these patients, and such cases may be treated conservatively, or with surgery in the form of trans-urethral resection or even partial cystectomy, depending on the severity and clinical suspicion. Most bladder malignancies have a typical appearance on imaging and direct visualization and management is usually by transurethral resection of the bladder tumour. This atypical presentation of large bladder cysts on imaging, together with the presence of enhancing solid components raised the clinical
concern of a malignancy made this case more challenging and unusual [3]. Cystitis cystica and cystitis glandularis are usually described as cystic spaces formed within von Brunn nest; where cystitis cystica is lined by urothelial cells while cystitis glandularis is lined by differentiated mucous cells. Cystitis cystica is a common cause for small cystic lesion; and these are typically subcentimetre subepithelial vesicles commonly found in the trigone. Cystitis cystica is considered to be benign, while cystitis glandularis has been associated with an increased risk of malignancy and may require a period of surveillance.

Other less common differentials may include urachal cysts or even cystic neoplasms such as mucinous tumours. Urachal cysts would typically be located at the bladder dome and is of clinical importance as they may have increased risk of malignant change.

Cystitis cystica is a common benign proliferative condition of the bladder, which occurs typically as a result of chronic inflammation and can be seen in urinary tract infections. This condition is thought to be of no malignant potential and does not require follow up. Patients may present with signs and symptoms of a urinary tract infection, lower urinary tract symptoms or may be asymptomatic and be diagnosed on cystoscopy for evaluation of hematuria. They typically manifest as small cystic lesions in the bladder on cystoscopy and usually does not require biopsy or long term follow up [4]. There has been one case report of a large solitary bladder cyst in a

Fig. 3. MRI (coronal) demonstrating the large multi-loculated bladder cysts

Fig. 4. Intra-operative gross appearance of the bladder cysts
patient with LUTS and suprapubic pain who reported improvement of his urinary tract symptoms after resection of the bladder lesion, and the histology returned as cystitis cystica [5,6]. There have been a few other reports of cystitis glandularis which have masqueraded as bladder tumours, including one reported in a 16 years-old boy, and contrast imaging in such cases typically reveal filling defects within the bladder. These previously reported cases did not demonstrate the presence of enhancing solid components on imaging which usually would raise a clinical concern of a more sinister pathology.

To our knowledge, this is the first reported case of large multi-loculated bladder cysts arising from cystitis cystica in a patient presenting with LUTS, where initial imaging raised the possibility of a bladder neoplasm in view of the presence of enhancing solid component. Ultrasound examination of the kidneys and bladder in a patient presenting with LUTS can be a useful basic evaluation tool to exclude other causes of LUTS other than an enlarged prostate. In the event of an abnormal ultrasound scan, a computed tomography scan with delayed phase can be done next to evaluate the urinary tract. This should have been able to demonstrate the bladder cyst and could also look for enhancement or solid component within the cyst that may suggest a more sinister pathology. However, in patients with renal impairment, such lesions may not be evident on plain CT imaging as in this case. Other investigations that can be considered will include MRI scan of the pelvis or cystoscopic evaluation.

4. CONCLUSION

This case report describes a rare presentation of large multi-loculated bladder cysts in a patient with lower urinary tract symptoms, where initial imaging raised the suspicion of a bladder malignancy but turned out to be cystitis cystica on final histology. While rare in incidence, cystitis cystica should be considered in cases of large cystic defects of the urinary bladder.

CONSENT

All authors declare that written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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