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A case of cystitis cystica presenting as a bladder mass in a boy

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Abstract

Cystitis cystica is a rare proliferative lesion of the bladder, usually caused by chronic irritation and inflammation. It is caused by the hyperplasia of the submucosa and proliferation of von brunn nests of the bladder. Though usually benign, it is considered to have some malignant potential. This condition has been reported in adults, but is rarer in pediatric age group. We describe the case of cystitis cystica in a 13 year-old boy who presented with painless hematuria and was suspected to be bladder neoplasm on imaging.

Keywords

Pediatric; hematuria; bladder mass; cystitis cystica.

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Introduction

Cystitis cystica is rare tumors of the lower urinary tract, characterized by Brunn nests with variable-sized lumina containing eosinophilic material that form cysts and generally regarded as benign urothelial lesions [1,2]. The cystic formation of the transitional epithelium is related to prolonged stimulation from chronic urinary tract infections or foreign bodies (calculi, crystals) in the urinary tract [3].The most frequent clinical symptom is hematuria, and cystitis cystica affecting the ureteric orifices may contribute to the occurence of reflux and involvement of the bladder neck may produce some degree of vesical outlet obstruction [4]. These lesions look alike bladder neoplasm on radiologic imaging modality and are a constant threat to transform in to a malignant lesion [5]. Hence, cystitis cystica has been a subject for debate and a cause of anxiety for patients

and confusion for the treating urologist. We present such a case of cystitis cystica in a boy who presented with painless hematuria and imaging suggested bladder mass.

Case Report

A 13 year-old boy was admitted with poor stream, straining during micturition and painless with passage of clots hematuria since 1 month duration. There was no history suggestive of urinary tract infection (UTI) and no previous surgical history. The bladder was palpable at the suprapubic region. At admission, the patient was stable. Laboratory investigations revealed anemia (Hb: 7.4g/dl). The renal and coagulation test was normal. An abdominal ultrasound showed thickened urinary bladder wall and a 42x34mm mixed echogenic mass posterolaterally with vascularity [Fig. 1].

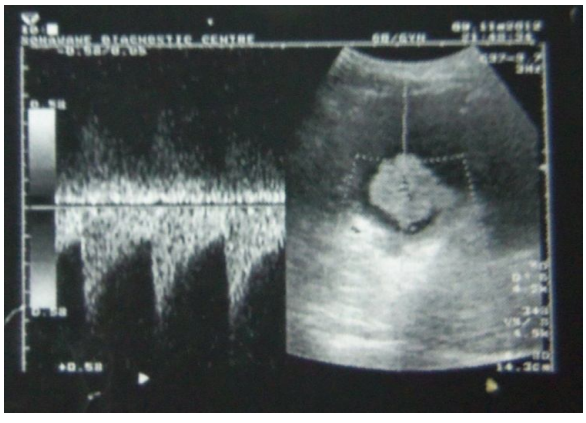

Fig. 1. An abdominal ultrasound showed thickened urinary bladder wall and a 42x34mm mixed echogenic mass posterolaterally with vascularity.

The right kidney was normal and the left kidney had a focal parenchymal scarring. Contrast Enhanced Computed Tomography (CECT) Scan suggested a 43x29x27mm endophytic intraluminal lobulated heterogenous enhancing soft tissue lesion arising from inferolateral wall of the urinary bladder [Fig. 2]. Neoplastic etiology was suspected; however, there was no perivesical spread, no involvement of vesico-ureteric junction and no lymphadenopathy.

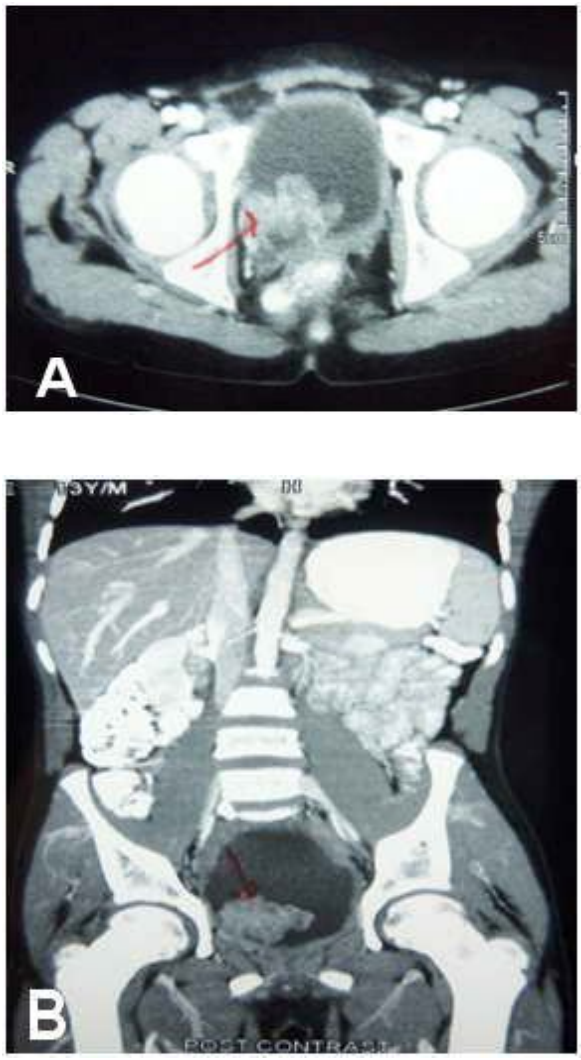

Fig. 2 A, B. CECT Scan showing the mass arising from the bladder

Transurethral biopsy was done twice which reported cystitis cystica. Transvesical excision of the bladder mass was done under general anesthesia [Fig. 3]. The final histopathology report was consisted with cystitis cystica with no evidence of malignancy. The patient is on regular follow-up with no complaints.

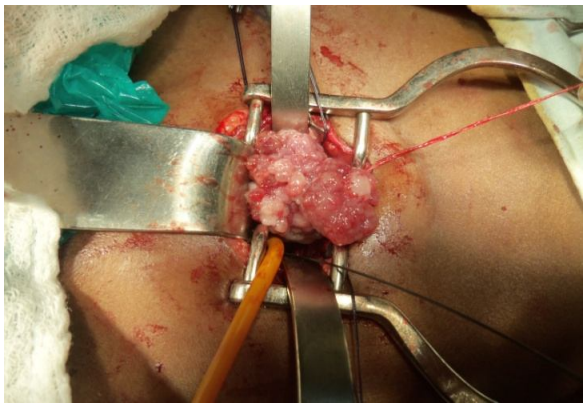

Fig. 3. Transvesical excision of the mass being done.

Discussion

Cystitis cystica is a rare hyperplastic lesion of the bladder mucosa and, it occurs when von Brunn's nests grow into the lamina propria forming cysts [6]. Additionally, Noda et al suggested that von Brunn's cell nest, and glandular and cystic formation, occur during development from an inflammatory crypt to an immature cyst and then, a mature cyst [3]. The etiology of cystitis cystica is associated with chronic irritation and inflammation to the bladder mucosa such as recurrent urinary tract infections, chronic bladder outlet obstruction, calculi, crystals, neurogenic bladder and recurrent bladder tumours [3,6-9]. Although cystitis cystica is usually seen in elderly, it can occur at any age, and there is reported prevalence of 2.4% in children with urinary tract infections [8,10]. A slight male predominance is reported. Humoral immune defense response caused by various agents has been implicated in the pathogenesis of this condition [8].

Although cystitis cystica is postulated to be a premalignant disease of the urinary bladder, remarkably few reports document the progression from cystitis cystica and glandularis to carcinoma of the bladder [8,11]. Olsen et al [11] described that three patients where cystitis cystica was demonstrated 12, three and one month before diagnosis of cancer. They believed that cystitis cystica reflects mobilization of the humoral immune defence mechanism in response to various agents, among these a subclinical malignant tumour.

Symptoms are those of chronic irritation, such as frequency, dysuria, urgency, and painless hematuria mimicking bladder carcinoma. In some rare cases, mucus in the urine may be secreted [12,13].

At imaging, cystitis cystica usually appears as multiple and discrete masses which elevate the urothelium [13]. They are usually located in the trigone or anterior bladder

wall [13,14]. The non-specific radiological appearances can be easily mistaken for bladder carcinoma, as was seen in our case. Hence, this diagnosis should be kept in mind as a differential while investigation and should be discussed with the radiologist. The other such differential diagnoses include eosinophilic cystitis, blood clot, endometriosis, leukoplakia/malakoplakia, radioluscent calculus, ureterocele and benign tumors like nephrogenic adenoma, leiomyoma, hemangioma, paraganglioma and neurofibromatosis [13].

Cystoscopically, the appearance is of rounded clear or yellow 1-5 mm submucosal cysts. The definitive diagnosis is only made by at histopathological examination. Histologically, these are spaces lined by urothelium or cuboidal cells [15].

Bapat et al [5] strongly recommended the suitability of conservative management in all the patients. However, in selected cases such as failure of conservative treatment, obstructive lesions and an increase in size of the lesions are required transurethral cystoscopic resection [5].

Cystitis cystica is a rare condition which can present as UTI or as painless hematuria mimicking bladder carcinoma. It should be kept in mind while investigating. Cystoscopy and biopsy is diagnostic. Lesions require excision while those with symptoms of UTI can be managed medically. Long-term follow-up is required because of the malignant potential.

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