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Nephrogenic adenoma of urinary bladder following intravesical BCG therapy

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Abstract: Nephrogenic adenoma is a rare benign disease in the urinary tract most frequently in the urinary bladder. Though the etiology is still not established but its association with trauma, urinary tract infection , stone disease, radiation therapy, previous bladder surgery and foreign bodies has been reported. But nephrogenic adenoma following intravesical therapy is rarely reported in the literature. Here we report a case of nephrogenic adenoma of urinary bladder in a 60-year old male patient two years after intravesical BCG therapy for transitional cell carcinoma of the urinary bladder.
Keywords: Nephrogenic adenoma, intravesical BCG, urinary bladder.

INTRODUCTION

Nephrogenic adenoma is an uncommon lesion of the urinary tract induced by chronic irritation of the vesical mucosa, due to infection, trauma, previous surgery, calculi, foreign bodies and chemical agents. The first case was reported by Davis in 1949 [1]. In 1950, the term "nephrogenic adenoma" was coined by Friedman and Kuhlenbeck because of its histological resemblance to a renal tubule [2]. We present a case of a nephrogenic adenoma of the urinary bladder after intravesical Bacillus-Calmette-Guerin (BCG) instillation for transitional cell carcinoma.

CASE REPORT

A 60-year-old man was admitted to our hospital with history of single episode of hematuria in May 2012. He had history of transurethral resection of bladder tumor in the left lateral wall in July 2009 and the histopathology was transitional cell carcinoma (T1G3), which was followed by intravesical BCG installation (80 mg BCG once a week for 6 weeks). He was on regular follow-up cystoscopy .On admission ultrasonography showed a growth 2x1 cm in left lateral wall of urinary bladder (Fig.1). He was normoglycaemic with normal hematological and renal biochemical parameters. Cystoscopy suggested a solitary papillary tumor surrounded by edematous mucosa in the left lateral wall of the bladder and transurethral resection of the tumor was done in the same sitting. Histopathology of the tumor revealed multiple tubule like structures lined by cuboidal epithelial cells with round nuclei and mildly eosinophilic cytoplasm, which were consistent with a diagnosis of nephrogenic adenoma (Fig. 2A & 2B). Post operatively patient is free from any recurrence since last two years and till now is on check cystoscopy regularly at six months interval.

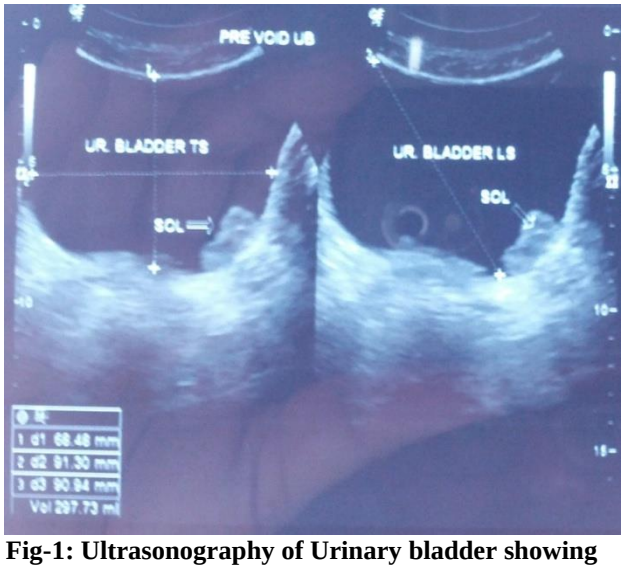

Fig-1: Ultrasonography of Urinary bladder showing a growth in left wall.

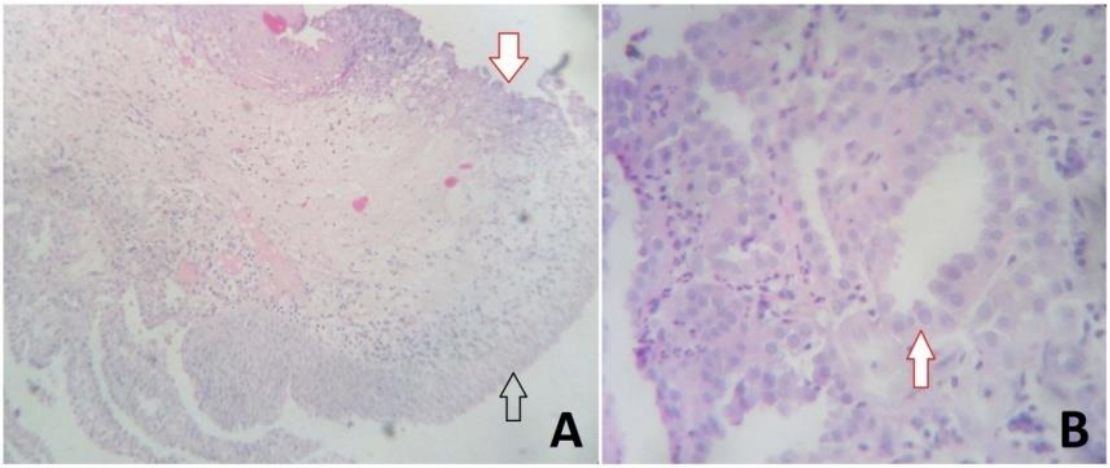

Fig-2A: Histopathological sections from urinary bladder showing normal urinary bladder mucosa(Black arrow) and nephrogenic adenoma (red arrow). (H &E X 40)

Fig-2B: Histopathological picture showing tubule like structure lying at different panes lined by cubboidal cells with round nuclei and mildly cosinophilic cytoplasm which are akin to renal tubular cells (Red arrow head towards tubule). (H& E X 400)

DISCUSSION

Nephrogenic adenoma is a rare tumor. It occurs more commonly in males as compared to females.It occurs most frequently in urinary bladder. It has also been reported at other sites like ureter, urethra, renal pelvis [3]. Its etiology is unknown, but association with trauma, nephrolithiasis, previous surgery, infection and radiation have been reported [4].

Several theories have been postulated regarding the origin of nephrogenic adenoma. Some suggest that it is a metaplastic reaction due to various causes of inflammation of urothelium like urinary tract infection, urinary bladder calculi, urinary bladder instrumentation. Some suggest that it occurs as an embryological mesonephric remnant. Some suggest that it occurs due to desquamated renal epithelial cells which implant in the urinary bladder [5].

Our patient underwent a transurethral resection of a bladder carcinoma in the left lateral wall and subsequent intravesical treatment with BCG. BCG induces a metaplastic reaction in the bladder wall at the site of lesion as shown by Kurozumi et al [6]. Therefore a nephrogenic adenoma may arise at the same site of previous lesion due to a metaplastic response.Most patients with nephrogenic adenoma present with features of gross hematuria and other irritative symptoms like frequency , urgency and dysuria [7]. Our patient also presented as a single episode of gross painless hematuria. Endoscopically nephrogenic adenoma appears as papillary, polypoidal or flat and usually less than 1 cm in diameter [7]. Due to this they appear similar to transitional cell carcinoma of the urinary bladder. Their definitive diagnosis is based on pathological examination after transurethral resection of the lesion. Histologically they have ducts, tubules lined with flat, cuboidal or polygonal epithelium. They usually have a thickened basement membrane. They are localized to lamina propria and do not extent to or beyond the lamina propria [8]. Patients with a nephrogenic adenoma are treated with transurethral resection or a cold cup biopsy and fulguration. Though nephrogenic adenoma is a benign lesion but because the recurrence rate is high therefore, patients should be followed by periodic check cystoscopy [9].

CONCLUSION

Nephrogenic adenoma cystoscopically looks similar to a transitional cell carcinoma of the urinary bladder, the only way to differentiate between the two is through pathological examination after resection. Though it is a benign lesion, its recurrence rate is high therefore periodic check cystoscopic examination is required.

REFERENCES

1. Davis TA; Hamartoma of the urinary bladder. Northwest Med, 1949; 48(3): 182-185.
2. Friedman NB, Kuhlenbeck H; Adenomatoid tumors of the bladder reproducing renal structures (nephrogenic adenomas). J Urol, 1950; 64(5): 657-670.
3. Ford TF, Watson GM, Cameron KM; Adenomatous metaplasia (nephro-genic adenoma) of urothelium. An analysis of 70 cases. Br J Urol, 1985; 57(4): 427–433.
4. Boscolo-Berto R, Lamon C, Gardi M, Vezzaro R, Gardiman M; Recurrent nephrogenic adenoma in bladder diverticulum:case report and literature review.Can Urol Assoc J, 2012; 6(2): 34-37.
5. Mazal PR, Schaufler R, Altenhuber-Müller R, Haitel A, Watschinger B, Kratzik C, Susani M; Derivation of nephrogenic adenomas from renal tubular cells in kidney-transplant recipients. N Engl J Med, 2002; 347(9): 653–659.

6. Kurozumi K, KoikawaY, Yagi H, OmotoT, 1wataY; The significance of bacillus Calmette-Guerin in therapy of carcinoma in situ of the bladder. Jap J Urol, 1991; 82: 900-906
7. Porcaro AB, D'Amico A, Ficarra V; Nephrogenic adenoma of the urinary bladder: our experience and review of the literature.Urol Int, 2001; 66(3): 152–155.
8. Piña-Oviedo S, Shen SS, Truong LD, Ayala AG, Ro JY; Flat pattern of nephrogenic adenoma: previously unrecognized pattern unveiled using PAX2 and PAX8 immunohistochemistry. Mod Pathol, 2013; 26(6): 792-798.
9. Husain AN, Armin AR, Schuster GA; Nephrogenic metaplasia of urinary tract in children: report of three cases and review of the literature. Pediatr Pathol, 1988; 8(3): 293–300.