

**Case Report**

## **Nephrogenic adenoma of the Urinary bladder Fake tumor or Witch hunt ?**

**Tetou M<sup>1</sup>, Slaoui A<sup>1,2\*</sup>, Boukhelifi Y<sup>1</sup>, Tbouda M<sup>3</sup>, El Harrech Y<sup>1</sup>, Alami M<sup>1</sup> and Ameur A<sup>1</sup>**

<sup>1</sup>*Urology Department Mohammed V Military Training Hospital Mohammed V University,  
Rabat Morocco*

<sup>2</sup>*Urology B Department Ibn Sina Hospital Mohammed V University,  
Rabat Morocco*

<sup>3</sup>*Department of anatomical pathology Mohammed V Military Training Hospital Mohammed V University,  
Rabat Morocco*

### **Abstract**

The optimal management of the nephrogenic adenoma of the bladder remains one of the concerns of the scientific community. The diagnosis is often misleading with other malignant lesions of the bladder and its lack of knowledge can lead to disastrous medical mistakes.

We report the clinical case of a 65-year-old man hospitalized for crippling pollakiuria with hematuria. Ultrasonography found a left lateral intravesical mass with ipsilateral kidney a large pyelocalic dilatation and laminated parenchyma. Trans-urethral resection of the intra-vesical tumor bud found a nephrogenic adenoma of the bladder. Supra-trigonal enlargement enterocystoplasty with left nephrectomy was recommended. The patient did not have local recurrence at cystoscopic control, with a 20-month follow-up.

Through this clinical case and a literature review, we analyze the epidemiological, aetiological diagnostic and therapeutic aspects of this rare entity.

### **Introduction**

The nephrogenic adenoma of the bladder (NAUB) is a rare lesion [1]. Easily diagnosed as a malignant lesion, misunderstanding of this entity could lead to many medical faults. A number of irritative factors have been incriminated in etiopathogeny: recurrent infections, relapsing stones, intra-vesical instillations, foreign bodies, radiotherapy ... but none is unanimous [2]

Through this case of NAUB we will analyze the different etiopathogenic and therapeutic aspects of this often unknown entity.

### **Case Report**

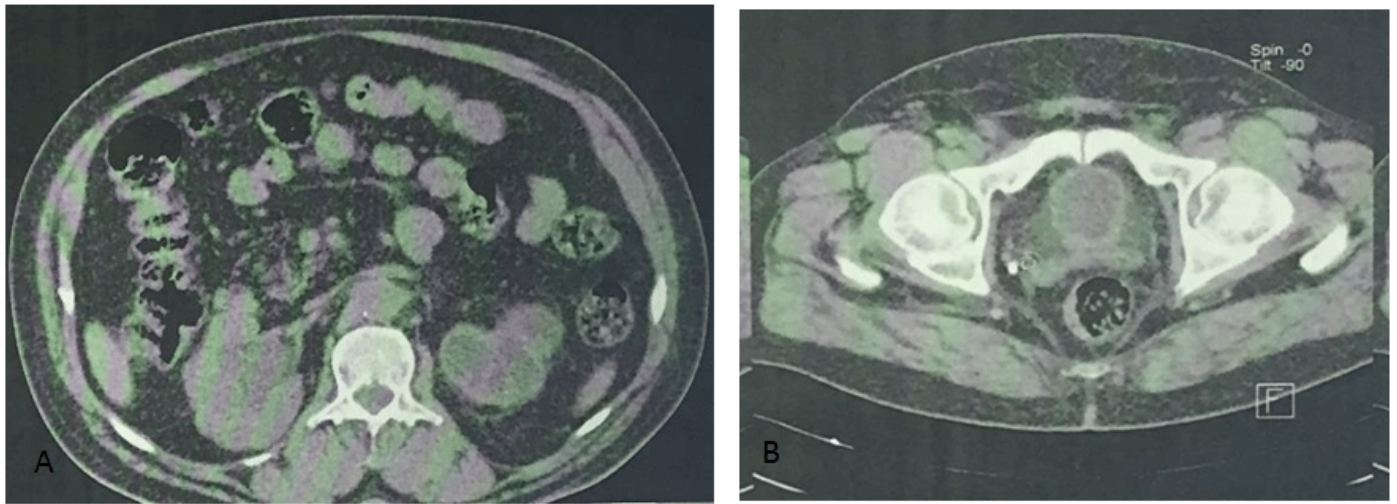
We report the case of a 65-year-old patient, followed in our training for disabling pneumaturia with an episode of hematuria. A reno-vesical ultrasound demonstrated a suspicious budding lesion of the bladder wall, with reduced bladder capacity and bilateral pyelocalic dilatation laminating the left renal parenchyma. Biologically, he had severe renal impairment with a glomerular filtration rate of 22 ml / min / 1.73m<sup>3</sup>. Trans-urethral resection of the intra-vesical tumor bud seen on ultrasound returned to a NAUB (Figure 2-3). The thoraco-abdominopelvic CT, performed as part of the extension assessment, did not find lymphadenopathy or secondary locations (Figure 1). Renal scintigraphy with DMSA showed a functional value reduced to 5% of the left renal unit.

**\*Corresponding Author:** Slaoui Amine, urology B Department, Ibn Sina hospital, Mohammed V University, Rabat, Morocco, E-mail: amineslaoui05@gmail.com

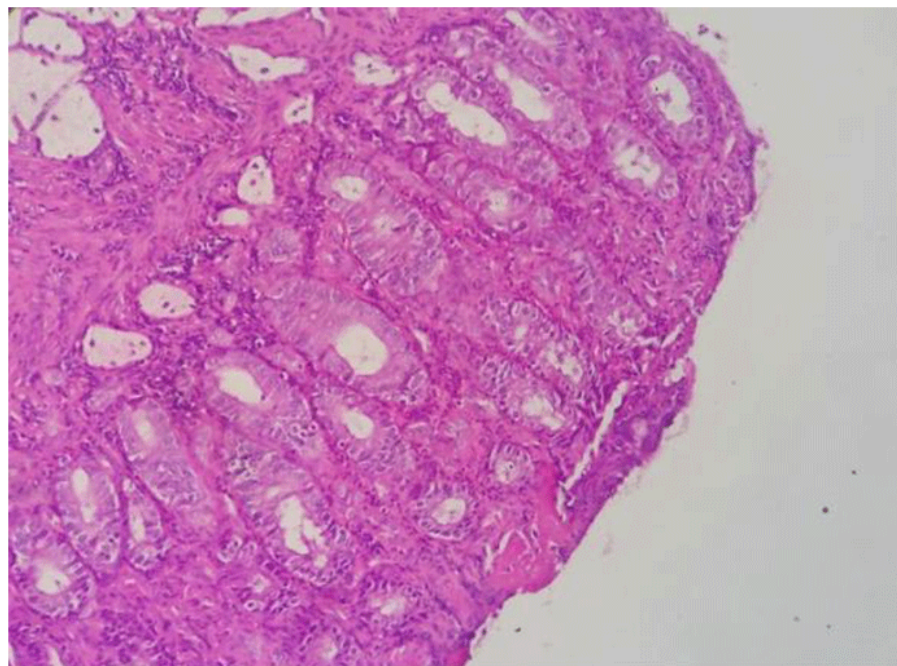
**Sub Date:** May 15<sup>th</sup> 2019, **Acc Date:** May 21<sup>st</sup> 2019, **Pub Date:** May 24<sup>th</sup> 2019

**Citation:** Tetou M, Slaoui A, Boukhelifi Y, Tbouda M, et al. (2019) Nephrogenic adenoma of the Urinary bladder Fake tumor or Witch hunt ?. BAOJ Urol Nephrol 4: 027

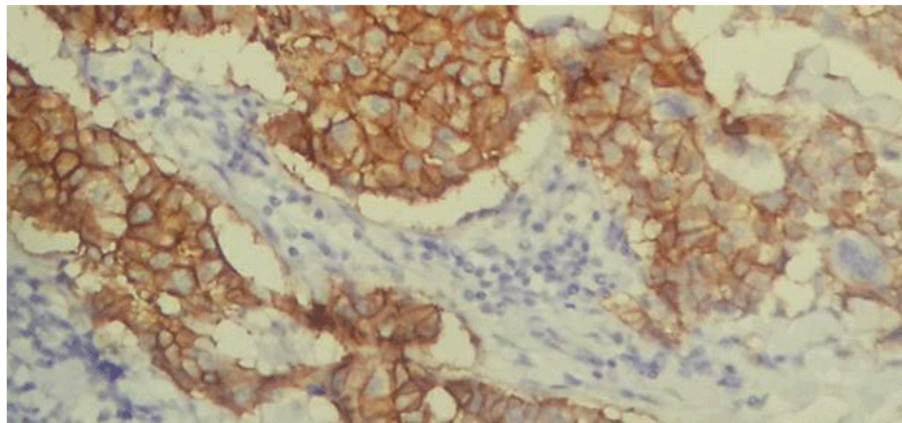
**Copyright:** © 2019 Slaoui A. This is an open access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.



**Figure 1.** CT cross section.  
(A): Bilateral pyelocalicelle dilation and laminating the left renal parenchyma.  
(B): Bladder with thick wall and low capacity.



**Figure 2.** Histological section at medium magnification showing tubular structures surrounded by epithelioid cells (HE.200).



**Figure 3.** Immunohistochemical study: Positive labeling of tubular structures by anti-CK 7 antibody.

After multidisciplinary consultation, it was decided to perform a trigonal enlargement with enteric cystoplasty with left nephrectomy.

Nephrectomy was performed laparoscopically, and median umbilical laparotomy was recommended for enteric cystoplasty with supra-trigonal enlargement.

The postoperative course was simple. The evolution was marked by the improvement of the lower urinary tract symptoms and renal function.

The patient did not have local recurrence at cystoscopic control, with a 20-month follow-up.

## Discussion

Although the nephrogenic adenoma of the bladder (NAUB) was first described by David in 1949, it was only a year later that Friedman and Kuhlenbeck were named “nephrogenic adenoma” because of the similarity to tubular cells of the kidney [3, 4]. It is a metaplasia of the bladder with papillary or cryptic structures composed of small hollow tubules resembling the mesonephric tubules. There is often a layer of cuboid or studded cells surrounding the tubular cells [5]. Other alternative terminologies have been used to describe this entity: mesonephric metaplasia, adenomatoid tumor and adenomatoid metaplasia [5].

NAUB is more common in men than in women (2/3 in men) [6]. It is preserved in the adult even if rare cases in children have been reported [7].

The NAUB is ubiquitous throughout the urinary tract, often identified in the bladder, but it can be ubiquitous throughout the urinary tract. In the literature,

It is most often located in the bladder neck and the adjacent urethra [8].

Although nowadays there are many hypotheses for etiopathogenesis, the first one was developed in 1954 by Mostof who reported that squamous and glandular metaplasia of the urothelium was frequently associated with chronic infection [2].

Thus, the literature incriminates intravesical instillations, stones, chronic catheterization, exstrophy, interstitial cystitis and surgery. At the same time, there is an increased incidence of nephrogenic adenomas in transplant patients [9].

Our patient was followed for chronic cystitis for 3 years and was probably the implantation bed of nephrogenic adenoma.

In addition, recent studies have shown a link between nephrogenic adenoma and certain drugs, such as ibuprofen and phenacetin [10]. Our patient was also on diclofenac NSAIDs of 150 mg daily, but intermittently and limited in time.

Clinical presentation of the NAUB is not specific. It tends to present with lower urinary tract irritative symptoms such as: increased frequency of urination, increased urgency of urination, urge incontinence and excessive passage of urine at night. It rarely presents with haematuria.

Cystoscopy, found solitary or multiple lesions, often papillary or polypoid. However, flat lesions have also been reported. This appearance mimics a malignant tumor and can lead to medical errors. In addition, flat lesions may also be confused with urothelial carcinoma in situ [11]. It is important to note that the literature reports rare cases of malignant transformation that should not be ignored and that completely change the prognosis [12].

Histologically, the nephrogenic adenoma has several different histological profiles: tubular, tubulocystic, polypoid, papillary, fibromyxoid, and flat [13]. This morphological variability, it can mimic urothelial carcinoma, metastatic tumors or clear cell adenocarcinoma. However, unlike malignant tumors, nephrogenic adenomas are inactive at the mitotic level and have no atypia or risk of invasion of the muscularis. There is no evidence of necrosis and no desmoplasia.

Finally, they are often positive for PAX2, PAX8, cytokeratin 7, high molecular weight cytokeratins and  $\alpha$ -methylacyl-coenzyme A racemase (AMACR), CD10 et MUC. (14-17).

Cytogenetic studies found that monosomy 9 and trisomy 7 have been associated with this entity [18].

A conservative attitude with trans-urethral resection of the NAUB is the optimal strategy. Partial cystectomy can be pre-conised for large tumors. Some authors propose the use of hyaluronic acid instilled in the bladder [19]. In our case, the trans-urethral resection of the bladder allowed us to specify the histological nature of the tumor. Enterocystoplasty on trigonal enlargement was indicated in front of reduced bladder capacity and repercussion on the upper urinary tract.

Because of the rare reported case of malignant transformation, a long-term follow-up with cystoscopy should be recommended.

## Conclusion

Nephrogenic adenoma is a rare but common benign lesion of the urinary system that occurs in patients with chronic urinary tract infection or in transplant patients. We report a case of nephrogenic adenoma of the bladder in a 65-year-old man with chronic cystitis treated with ibuprofen. Through this case we wish to remind the existence of this benign entity to avoid medical errors that could be disastrous.

## References

1. Vemulakonda VM, Kopp RP, Sorensen MD, Grady RW (2008) Recurrent nephrogenic adenoma in a 10-year-old boy with prune belly syndrome: a case presentation. *Pediatric Surgery International* 24(5): 605–607.
2. Mostofi FK (1954) Potentialities of bladder epithelium. *The Journal of Urology* 71(6): 705–714.
3. Davis TA (1949) Hamartoma of the urinary bladder. *NW. Med* 48: 182-185.
4. Friedman NB, Kuhlenbeck H (1950) Adenomatoid tumour of the bladder reproducing renal structures (Nephrogenic adenomas). *J Urol* 64(5): 657-661.
5. Parath R (2013) Bladder Metaplasia Nephrogenic Metaplasia. *Pathology Outlines.com*
6. Venyo AK (2015) Nephrogenic adenoma of the urinary bladder: A review of the literature. *Int Sch Res Not* 2015: 704982.
7. Rensing AJ, Koenig JF, Vricella GJ (2015) Nephrogenic adenoma of the pediatric ureter. *J Urol* Apr 193(4): 1377-8.
8. Sidana A, Zhai QJ, Mahdy A (2012) Nephrogenic adenoma in a urethral diverticulum. *Urology* 80(2): e21-2.
9. Amin W, Parwani AV (2010) Nephrogenic adenoma. *Pathol Res Pract* 206(10): 659-62.
10. Scelzi S, Giubilei G, Bartoletti R, Di Loro F, Mondaini N, et al. (2004) Nephrogenic adenoma of bladder after ibuprofen abuse. *Urology* 64(5): 1030.
11. Cheng L, Chevillat JC, Sebo TJ, Eble JN, Boswick DG (2000) Atypical nephrogenic metaplasia of the urinary tract: a precursor lesion? *Cancer* 88(4): 853–861.
12. Hartmann A, Junker K, Dietmaier W, et al. (2005) Molecular evidence for progression of nephrogenic metaplasia of the urinary bladder to clear cell adenocarcinoma. *Human Pathology* 2006 37(1): 117–120. doi: 10.1016/j.humpath.09.013
13. Oliva E, Young RH (1995) Nephrogenic adenoma of the urinary tract: a review of the microscopic appearance of 80 cases with emphasis on unusual features. *Modern Pathology* 8(7): 722–730.
14. Herlitz LC, Tong GX, Hamele-Bena D, Greenebaum E (2008) Nephrogenic adenoma identified on urine cytology using PAX-2 immunostaining. *Diagnostic Cytopathology* 36(1): 47–49.
15. Tong GX, Weeden EM, Hamele-Bena D, et al. (2008) Expression of PAX8 in nephrogenic adenoma and clear cell adenocarcinoma of the lower urinary tract: evidence of related histogenesis? *American Journal of Surgical Pathology* 32(9): 1380–1387.
16. Skinnider BF, Oliva E, Young RH, Amin MB (2004) Expression of  $\alpha$ -methylacyl-CoA racemase (P504S) in nephrogenic adenoma: a significant immunohistochemical pitfall complicating the differential diagnosis with prostatic adenocarcinoma. *The American Journal of Surgical Pathology* 28(6): 701–705.

17. Tong G.-X, Melamed J, Mansukhani M, et al. (2006) PAX2: are liable marker for nephrogenicadenoma. *Modern Pathology* 19(3): 356–363.
18. Pycha A, Mian C, Reiter WJ, et al. (1998) Nephrogenicadenoma in renal transplant recipients: atrulybenignlesion? *Urology* 52(5): 756–761.
19. Campobasso P, Fasoli L, Dante S (2007) Sodium hyaluronate in treatment of diffuse nephrogenicadenoma of the bladder in a child. *Journal of PediatricUrology* 3(2): 156–158.