Nephrogenic adenoma of bulbar urethra mimicking as urethral carcinoma: A diagnostic dilemma

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ABSTRACT

Introduction: Nephrogenic adenoma (NA) is a rare benign tumor of urinary tract and is found most commonly in the bladder. This case is about the unusual urethral mass which was mimicking like urethral carcinoma and came out to be NA on histopathology. Case Report: A 47-year-old male presented with two months history of obstructive urinary symptoms and intermittent per urethral bleed. Ultrasound revealed mild prostatomegaly with significant post-void residual urine and urethral stricture pattern on uroflowmetry. Retrograde urethrogram confirmed urethral stricture with filling defect proximal to urethral stricture. Magnetic resonance imaging (MRI) pelvis reported it as altered intensity polypoidal lesion in bulbar urethra suggestive of urethral malignancy. Optical internal urethrotomy for the urethral stricture and transurethral resection of mass was done. Histopathology and immunohistochemistry confirmed it as NA. Conclusion: Nephrogenic adenoma should be considered in differential diagnosis of nested urothelial carcinoma and urethral adenocarcinoma. Keywords: Immunohistochemistry, Nephrogenic adenoma, Urethral carcinoma, Urethral stricture

INTRODUCTION

Nephrogenic adenoma (NA) was first reported as a bladder hamartoma in 1949 by Davis [1]. It is a form of nephrogenic metaplasia which arises from urothelium in response to injury due to trauma, indwelling catheter, or calculus. It is an uncommon lesion of urinary tract and most frequently observed in urinary bladder. Despite being labeled as benign condition, it causes morbidity by its tendency to recur and produce symptoms. The usual symptoms are flank pain, hematuria, urgency, dysuria, and obstructive urinary symptoms depending upon site of involvement. We highlight the case report of unusual urethral mass mimicking as urethral carcinoma, seeing its presentation, gross appearance, and histological features, and confirmed as NA on immunohistochemistry. Immunohistochemistry is useful in differentiating these entities.

CASE REPORT

A 47-year-old male presented with two months history of obstructive urinary symptoms and intermittent per urethral bleed. Ultrasound revealed mild prostatomegaly with significant post-void residual urine. Uroflowmetry was suggestive of decrease maximum flow and stricture pattern. Retrograde urethrogram confirmed stricture in mid-bulbar urethra and filling defect proximal to it with
possibility of either radiolucent calculus or soft tissue mass (Figure 1). Magnetic resonance imaging (MRI) reported it as altered intensity polyoidal lesion in bulbar urethra suggestive of urethral malignancy (Figure 2). Cystoscopy revealed mid-bulbar stricture and polyoidal lesion proximal to it with overlying calcified material imitating as malignancy (Figure 3A and B). Optical internal urethrotomy and transurethral resection of mass were done with transurethral resection loop without cutting current followed by optical internal urethrotomy for another stricture proximal to it with no skip lesion elsewhere. Histopathology confirmed the lesion as NA with positive immunohistochemistry for CK7, PAX 2, and negative for p63. Foley catheter was removed after five days and the patient is asymptomatic till date.

DISCUSSION

The most common site of NA is urinary bladder and reported to be around 15% in the urethra. Few case reports of urethral NA in children have also been mentioned in the literature [2–4]. Tubular and microcystic patterns are the most common, although papillary structures may also be seen [5]. This could be mistaken for a clear cell adenocarcinoma of the urethra but could be differentiated from urethral carcinoma by presence of overlying urothelium and preserved architecture [6]. Nephrogenic adenoma is not a premalignant lesion as mentioned in previous studies [7, 8]. There was diagnostic dilemma in our case as there was filling defect in bulbar urethra which raised the possibility of either radiolucent calculus or urethral carcinoma. Magnetic resonance imaging pelvis and cystoscopy have further verified this mass mimicking as urethral carcinoma, but immunohistochemistry confirmed it as NA of urethra with squamous metaplasia. Immunohistochemistry, especially p63 and PAX2, may be useful for differentiating urethral carcinoma (p63 positive) and nephrogenic adenoma (PAX2 positive). In most cases, transurethral resection of the lesion is the treatment of choice. However, there have been case reports with conservative management [9]. Transurethral resection of the lesion has been recommended as the treatment but with a high recurrence rate of up to 37% [10]. Cystoscopy for follow-up is to be used judiciously as the trauma during cystoscopy by itself can be a stimulus for recurrence of NA.

CONCLUSION

Nephrogenic adenoma should be considered in differential diagnosis of nested urothelial carcinoma and urethral adenocarcinoma as it is a benign lesion without apparent malignant potential. So, knowledge of its presentation and diagnostic feature is therefore essential to avoid confusion and differentiate it from urethral carcinoma. Cystoscopic excision of urethral NA is recommended with long-term follow-up.
REFERENCES


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Author Contributions

Ankur Arya – Conception of the work, Design of the work, Acquisition of data, Analysis of data, Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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