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Case Report

Ureteric Leiomyoma – A Rare Case

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Abstract

Leiomyoma is a benign smooth muscle tumor with very rare malignant transformation to cancer. Leiomyoma can occur in any organ of the body but genitourinary tract is a rare site. Only few cases of ureteric leiomyoma have been reported. We report the rare case of primary leiomyoma of ureteral origin with hydronephrosis.

Keywords: Leiomyoma; Computed Tomography (CT), genitourinary tract, Ureter

Abbreviations

ECG: Electrocardiogram; CT: Computed Tomography; PET-CT: Positron Emission Tomography – Computed Tomography; MEN: Multiple Endocrine Neoplasia; H&E: Hematoxylin and Eosin

Introduction

Leiomyoma is a benign smooth muscle tumor that can occur in any part of body but most common forms occur in uterus, small intestine, esophagus, stomach. Leiomyoma of genitourinary tract is an uncommon site and that too in ureter is very rare. Most of the cases present with secondary hypertension and on evaluation reveal kidney function deterioration and obstruction at level of ureter. Our patient underwent radical nephrectomy following which histopathological diagnosis of ureteric leiomyoma was made.

Case Report

A 38 year old male visited our department for annual medical examination and was incidentally found to have raised blood pressure of 160/100 mm Hg along with ECG abnormalities. There is a significant family history of hypertension with his brother being hypertensive and on medicate for the same.

On initial evaluation, patient's height and weight were 170 cm and 62 kg respectively. Pulse was regular with 80 beats/minute and body temperature was 35°C. Microscopic hematuria was noted on routine urine examination. Urine cytology was reported negative for urothelial carcinoma. There was no history of smoking or drinking.

Abdominal computed tomography (CT) revealed enhancing mass lesion involving medial wall of proximal left ureter causing left pelvi-ureteric junction obstruction and left renal hydronephrosis. Whole body PET-CT revealed mildly FDG avid soft tissue density lesion of 12 mm left proximal ureter. No FDG avid lymph nodes were found.

Based on the above findings, a provisional diagnosis of left ureteric cancer (cT1,N0,M0) with left non-functional kidney was made. A radical nephroureterectomy with bladder cuff excision was performed.

Grossly, a solid tumor was seen measuring 12 mm x 10 mm with a greyish white cut surface. Histopathological examination with Hematoxylin and eosin (H&E) stain revealed a circumscribed tumor in the ureteric wall. The individual tumor cells were spindle shaped arranged in fascicles with bland chromatin, inconspicuous nucleoli and moderate cytoplasm. There was no significant atypia, mitosis or necrosis noted. Based on the above morphology, a diagnosis of Uretric leiomyoma was made.

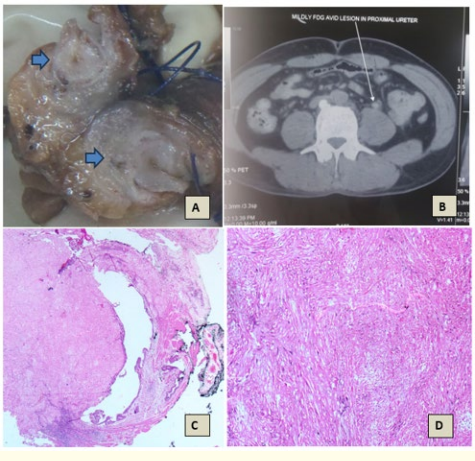

Figure 1: A: Transection of ureter showing a solid tumor measuring 12 mm x 10 mm with a greyish white cut surface. B: PET CT showing mildly FDG avid lesion in proximal ureter. C: H&E stain showing interlacing fascicular growth of spindle cells compressing the ureter [4x]. D: Higher magnification showing bland spindle cells arranged in fascicles. [H&E stain; 20x].

Discussion and Conclusion

Benign tumors of ureter are much rarer than malignant ones [1]. The first case of leiomyoma of the ureter was reported by Leighton., *et al*. in 1955 [2]. The site can be anywhere but leiomyoma of upper and lower ureter are common [3], however no correlation is seen between location of the lesion, sex or site [5]. The signs and symptoms of benign ureteral tumors include mass in the loin, pain abdomen and hematuria [4]. The pathologic mechanism of ureteric leiomyoma is unclear. However, causes such as ureteric obstruction due to trauma, inflammation and ureterolithiasis are being proposed [5]. Ureteric leiomyomas can also be encountered in genetic defects such as Hereditary Leiomyomatosis and Renal Cell Carcinoma (HLRCC).

Ikota., *et al*. reported a case of diffuse ureteric leiomyoma associated with multiple endocrine neoplasia (MEN) type 1 syndrome [6]. Our patient had no history of ureterolithiasis, trauma or known genetic defects.

It is very difficult to differentiate ureteric leiomyoma from urothelial cell carcinoma based on imaging as there are no characteristic findings [3]. Urothelial cell carcinoma is more common than ureteric leiomyoma, and preoperative ureteroscopic examination and intraoperative findings will help to diagnose benign lesions. The mainstay of treatment is surgical which is partial ureterectomy in case of preserved renal function or total nephroureterectomy with or without bladder cuff excision, if renal function is lost and/or malignancy is suspected. With advancement in ureteroscopic technology, it has now been possible to diagnose benign conditions and conservative surgical approach can be adopted [7]. In this case there was non-functioning kidney due to hydronephrosis and therefore total nephroureterectomy was a logical option. In young patients having hydronephrosis with ureteric lesion, differential diagnosis of benign mesenchymal tumor should be considered.

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