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Review

Testicular vein syndrome: Review of the literature and recent case report

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ABSTRACT

Purpose: To perform a systematic review of cases published about the extremely rare entity of testicular vein compression on ureter with resultant hydroureteronephrosis and addition of a new case of left side testicular vein syndrome.

Materials and method: A search of English-language literature through Google Scholar and PubMed was performed up to December 2016, besides; references of all identified case reports were reviewed.

Results and conclusion: Based on this review of the literature only seven cases have been reported in English-language journals until December 2016 and the author present the 8th case. Four of the cases involved the right side and four the left side (Including the present case). In three cases, pathologically altered testicular vein resulted in obstructive uropathies, while in remaining five cases; the normal testicular vein was indenting over the ureter anteriorly at the crossing point.

Contents

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1. Introduction

Obstruction of ureter by an atypical compressing vessel is not an unusual entity and often results from the renal lower polar aberrant artery [1]. Other cause of vascular compression can be a retrovascular course of the ureter especially the retrocaval ureter [2]. It can also occur at the point of intersection of the ureter with retroperitoneal vessels like ovarian vein and very rarely, the testicular vein; Testicular Vein Syndrome (TVS) [2].

TVS was first described in 1975 reported by Hans-Eberhard et al. when they reported a case of an enlarged right spermatic vein with atypical course resulting in hydroureteronephrosis in a 28-year-old man in 1975. Thereafter only 6 cases of this rare entity have been reported in the literature. The author presents the 8th case of TVS with a review of previously reported cases.

2. Material and methods

A search of the English-language literature through Google Scholar and PubMed was performed up to December 2016 with key phrases of; "testicular vein syndrome", "testicular vein compression on ureter", "spermatic vein compression on ureter" and "hydronephrosis caused by testicular vein/spermatic vein". Besides references of all identified case reports were reviewed.

Inclusion criteria were male patients with hydronephrosis caused by testicular vein compression. The exclusion criterion was proximal urinary tract obstructive entities caused by aberrant or abnormal vessels rather than the testicular vein.

The literature was surveyed for clinical presentations, preference of side, involved site, pathological changes and size of the testicular vein, changes in affected ureter, grading of resultant proximal

Table 1
Information about the reported cases, details about side and site of pathology, presenting symptoms and laboratory findings.

N	Author/Year	Age (years)	Location	Side	Level	Symptoms	Blood and urine exam
1	Mellin et al. (1975)	28	Wisconsin, USA	Right	L4	Right flank and right lower abdominal dull pain for 4 months	Normal
2	Kretkowski et al. (1977)	20	Maryland, USA	Left	L2/3 disc	Single episode of gross hematuria one month ago	Normal
3	Lassnig et al. (1978)	Young adult		Left		Not available	
4	Meyer et al. (1991)	42	Chicago USA	Right	L3	Intermittent right flank pain and microscopic hematuria, history of lithotripsy and pyelolithotomy for right renal stones 2 and 10 years ago.	Normal
5	Ugurel et al. (2005)	54	Ankara, Turkey	Right	L3	Multiple episodes of right flank pain for ten years, lithotripsy for right renal stones 4 years ago	Normal
6	Gupta et al. (2011)	37	Bhopal, India	Left	L3	Left flank dull pain for 6 months	Normal
7	Punit Tiwari (2011)	55	Kolkata, India	Right	L3	Recurrent right flank pain (Dull, aching and occasionally colicky) for 2 years	Normal
8	Current case	27	Current case	Left	L2/3 disc	Left flank dull pain for 6 months, single episode of gross hematuria 4 months ago	Normal

The cases are numbered according to the literature reviewed 1–8. L = Lumber spine).

Table 2
Imaging work up.

	Intravenous urography (IVU)	Retrograde ureterogram	Ultrasound	Cross sectional imaging: CT/MRI
1	Right hydroureteronephrosis to the level of L4 intervertebral disc suggesting retrocaval ureter	No intrinsic ureteral obstruction	Not performed	Not performed
2	Moderate hydronephrosis possibly due to abnormal vessels or Ureteropelvic junction obstruction	Suggested Ureteropelvic junction obstruction	Not performed	Not performed
3	Not available	Not available	Not available	Not available
4	Partial obstruction of right ureter at L3 level with proximal dilatation. Upright view suggested extrinsic compression	Not performed	Not performed	CT: Right testicular vein indenting over right ureter anteriorly resulting in proximal ureteral dilatation
5	Partial obstruction at Ureteropelvic junction	Not performed	Mild persistent right hydronephrosis	CT: Right testicular vein crossing over right ureter anteriorly with proximal hydroureteronephrosis
6	Left side mild hydronephrosis and proximal hydroureter	Dilation of pelvicalyceal system and upper ureter proximal to an abrupt narrowing at L3 vertebral level. Jet effect seen	Mild to moderate left hydronephrosis and dilatation of proximal ureter suggestive of upper ureteral obstruction	CT: Anterior compression of left ureter by left testicular vein crossing- anterior to left ureter resulting in left hydronephrosis and proximal hydroureter
7	Findings suggestive of retrocaval ureter	Showed the level of obstruction with no intrinsic ureteral obstruction	Right hydronephrosis and dilated proximal ureter	MRI: Dilatation of proximal ureter with a sharp angulation and cutoff just proximal to normal running right spermatic vein
8	Not performed	Not performed	Left side grade I hydronephrosis and proximal hydroureter	CT: Left testicular vein indenting over proximal ureter at the level of L2/3 intervertebral disc and resultant proximal ureteral and renal pelvis dilatation

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