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CASE REPORT

Right Testicular Vein Syndrome Revealed by Obstructive Pyelonephritis in a Young Man: About a Case and Review of the Literature

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Abstract

Testicular vein syndrome is a rare cause of ureteral compression, which can lead to chronic and complicated obstruction of the urinary tract. We report the case of a 19-year-old patient with recurrent right obstructive pyelonephritis, revealing extrinsic ureteral compression by the right gonadal veins. A resection + end-to-end anastomosis had been indicated for right iliac ureteral stenosis, but the intraoperative discovery of a right testicular vein syndrome led us to perform a section-ligation of the compressive veins, allowing the obstruction to be removed and a good postoperative outcome. In this case, we discuss the clinical, radiological and therapeutic aspects of this rare entity in men.

1. Introduction

Extrinsic ureteral compression by vascular structures is rare and often presents a diagnostic challenge. Of these, gonadal vein syndrome is exceptional and may manifest as low back pain, recurrent urinary tract infections or chronic hydronephrosis. It is generally described in women (pelvic congestion syndrome), but can occur atypically in men. Diagnosis relies on imaging and intraoperative confirmation. We report a rare case of right ureteral compression by gonadal veins in a young man, revealed by obstructive pyelonephritis at CHU-Yalgado Ouédraogo.

2. Case Presentation

C. R., a 19-year-old patient, presented to the urology department of CHU Yalgado Ouédraogo with acute-onset right lumbar pain of the renal colic type, which had been evolving for 6 months in bouts interspersed with remissions. The pain was intense, radiating to the right lower abdomen and external genitalia, with episodes of nausea without vomiting. There were no other associated signs. General examination revealed WHO stage I general condition, fever of 39°C, respiratory rate of 28 cycles per minute, heart rate of 85 beats per minute, and blood pressure of 130/80 mmHg. On physical examination, the patient presented with pain localized to the right flank, as well as to the right upper ureteral point, and a positive Giordano sign.

Biological examination revealed a hyperleukocytosis of 32,000/mm3, predominantly neutrophilic at 29,000/mm3, and normal renal function. Abdominal ultrasound revealed grade III dilatation of the right pyelocalic cavities, with no visualized obstruction.

The uroscanner showed dilatation of the pyelocalic cavities and the right ureter to the level of the fifth lumbar vertebra, with a clear cessation of opacification, suggesting the diagnosis of acute obstructive pyelonephritis due to stenosis of the right iliac ureter. We performed an emergency right percutaneous nephrostomy to drain 900 ml of cloudy

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urine, which we collected for cytobacteriological study to isolate klebsiella pneumoniae. Prophylactic antibiotic therapy with Ceftriaxone + Amykacin was initiated, before being secondarily adapted to the antibiogram.

A right descending pyelogram after resolution of the infectious process showed grade IV dilatation of the pyelocalic cavities and right ureter, opacification of the ureter to the level of the fifth lumbar vertebra and terminating in a radish tail suggesting right iliac ureteral stenosis (Figure 1). We indicated ureteroplasty by end-to-end resection-anastomosis.

In the operating theatre, under general anaesthetic, we made a right pararectal incision and displaced the peritoneum, located the right ureter, dissected it down to the narrowed area and uncovered two large right testicular veins crossing its anterior surface and compressing it against the posterior abdominal wall (Figure 2). We performed a resection-ligation of the right testicular veins. Downstream ureteral patency was verified by intubation with a CH 7 ureteral catheter and was satisfactory. Post-operative management was straightforward, and the patient was discharged on postoperative day 4.

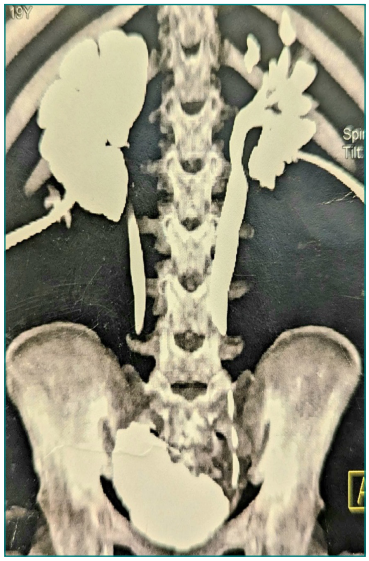

Figure 1. *Right descending pyelogram showing ureteropyelocalic dilatation with "radish-tail" image at L5.*

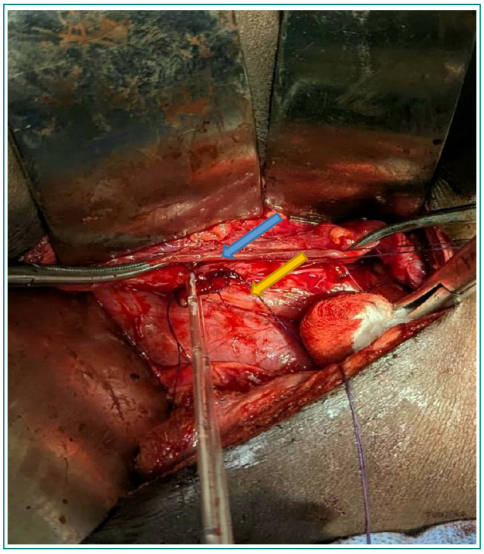

Figure 2. *Intraoperative view showing a right testicular vein (blue arrow) crossing the ureter (yellow arrow) and causing its compression. It is held between two resection-ligation forceps*

3. Discussion

Although ovarian vein syndrome (OVS) is rare, since the first case described by Clark in 1964, numerous case reports have been published and today it is considered a well-described entity in the literature [1].

Mellin et al. in 1975 reported the first case of this type in a male patient where a dilated right testicular vein with an atypical course was the cause of ureterohydronephrosis [2]. Since this first description, only a few cases have been reported in the medical literature worldwide. Until 2016, only seven cases had been reported in the English-language literature. Patients diagnosed with this syndrome had an average

age of around 40, with cases reported between the ages of 20 and 54 [3]. Right-sided localization appears to be more frequent in the rare cases reported [4,5].

The mechanism would be ureteral compression due to a dilated or thrombosed testicular vein, or a normal testicular vein with an aberrant path crossing the ureter and causing its obstruction [6].

Diagnosis is often difficult, and common symptoms include intermittent low-back pain, microscopic haematuria and recurrent urinary tract infections, or even impaired renal function in cases of prolonged obstruction [3,4]. In our case, the presentation was dominated by right lumbar pain and fever indicative of acute obstructive pyelonephritis.

Imaging often reveals hydronephrosis with ureteral obstruction of no obvious cause [5]. Contrast-enhanced uroscanner is a valuable tool for visualizing pyelocalcic dilatation and identifying any cessation of ureteral opacification. However, extrinsic vascular compression may not be visible on standard imaging. In some cases, an angioscanner or abdominal MRI with vascular sequences is required to identify the conflict between ureter and vein [6]. Descending pyelography may be useful to clarify the level of obstruction and its extrinsic character, typically "radish tail" at the site of compression, as in our case.

Therapeutically, in female cases of OVS, embolization of dilated ovarian veins has shown good results. However, in male cases, particularly those with obvious mechanical impingement, this option is rarely considered. To date, no study has demonstrated the efficacy of venous embolization in cases of male ureteral compression, unlike OVS. Treatment of this condition has long been exclusively surgical, involving sectioning and ligation of the compressive testicular vein via the iliac or, currently, the laparoscopic route [4]. The laparoscopic approach is increasingly used, with results comparable to those of open surgery. It enables fine dissection of the vascular and ureteral structures, with greater post-operative comfort.

Kishore et al. reported a case treated by laparoscopic testicular vein ligation with complete resolution of symptoms [4]. However, this approach requires special expertise and may not be available everywhere.

It's important to note that testicular vein syndrome is a rare cause of ureteral obstruction, and treatment options are usually tailored on a case-by-case basis. A relevant case is that of a 29-year-old man with thrombosis of the left gonadal vein leading to ureteral obstruction and acute renal failure. Treatment included placement of a double J ureteral catheter and systemic anticoagulation, which led to symptomatic improvement and resolution of renal failure [7].

4. Conclusion

Testicular vein syndrome is an exceptional cause of extrinsic ureteral compression, rarely considered in the first instance, especially in young men. Its diagnosis remains a challenge, often made intraoperatively in the face of ureteral stenosis with no obvious etiology on imaging. Surgical treatment by resection-ligation of the compressive veins generally allows definitive removal of the obstruction, with a favorable outcome.

Conflict of Interest: The authors declare no conflict of interest.

5. References

1. Hina YB, Stewart RW, Tjun YT, Colin AW, James MC. Ovarian vein syndrome: a review. Int J Surg Lond Engl [Internet]. déc 2009;7(6).
2. Mellin HE, Madsen PO. Obstruction of ureter by abnormal right spermatic vein. Urology. 1 oct 1975;6(4):517-9.
3. Hamidi H. Testicular vein syndrome: Review of the literature and recent case report. Egypt J Radiol Nucl Med. déc 2017
4. Arvind NK, Singh O, Gupta SS. Testicular Vein Syndrome and Its Treatment with a Laparoscopic Approach. JSLS. 2011;15(4):580-4.
5. Ugurel MS, Ilica AT, Kantarci F, Kocaoglu M, Somuncu I. Obstructive Uropathy Caused by Testicular Vein Compression: Multidetector-Row Computed Tomography Findings. J Comput Assist Tomogr. sept 2005;29(5):580-1.
6. Kretkowski R, Shah N. Testicular vein syndrome: Unusual cause of hydronephrosis. Urology. 1 sept 1977;10(3):253-4.
7. Sandberg JM, Dyer RB, Mirzazadeh M. A Rare Case Report of Hydronephrosis and Acute Kidney Injury Secondary to Gonadal Vein Thrombosis in a Young Male. J Endourol Case Rep. 1 août 2017;3(1):119-22.