

Laparoscopic Treatment of Ovarian Vein Syndrome for Intermittent Ureteral Obstruction

Asali Murad1*, Alsaraia Nimer

Department of Urology, Soroka University Medical Center, Ben Gurion University of the Negev, Israel

*Corresponding author: Asali Murad, Urology Department, Soroka University Medical Center, Ben Gurion University of the Negev, Israel. Tel: +972-52-3702079; Fax: +972-86654386; Email: muradasali@hotmail.com

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Introduction

Ovarian vein syndrome is a rare cause of ureteral obstruction. No large series were described, all reported patients are case reports. The main objective of this article is to describe ureterolysis and ovarian vein resection laparoscopic technique. The treatment for Ovarian Vein Syndrome (OVS) varies according to the clinical presentation. In nulliparous women, non-pregnant multiparous women and in children, the treatment is conservative. Yet, pregnancy may promote an intensification of this condition, leading to the necessity of a surgical intervention [1]. We present a case report of ovarian vein syndrome treated by transperitoneal laparoscopic approach, with a surgical technique description.

Keywords: Hydroureter; Laparoscopic; Ovarian; Robotic; Syndrome; Vein

Surgical Technique

With the patient in a flank lateral position, using veress needle in the right upper quadrant for insufflation, maintaining the pneumoperitoneum under a pressure of 14-15 mm Hg. Then, insertion of the first 10 mm trocar in the umbilicus for the 45° camera, and 2 trocars of 5mm and 12 mm inserted lateral to the right rectus muscle, distal and cranial, respectively, for the Ligasure, forceps and GIA- stapler passage. First incision of the Toldt line is made, then mobilization of the right colon medially. The ureter and ovarian vein are identified. Both structures are dissected, the ovarian vein segment is resected using a 45 mm-vascular gastrointestinal anastomosis- GIA.

Case Report

A 30 year- old female, presented with 9 years' history of recurrent right flank pain, she denied having a history of gross hematuria nor stones. On examination, there was tenderness in right lower abdomen and right flank. Urine analysis was normal; serum creatinine was 0.53 mg/dl. She was studied by ultrasonography, CTU (Figure 1), and Retrograde Pyelography (RP) (Figure 2) and DTPA renal scan- diethylenetriamine penta-acetic acid, (Figure 3). Right moderate hydronephrosis and hydroureter in ultrasonography and CTU, and delayed excretion in CTU and renal scan (Figure 2 and 3). In RP external ureteric obstruction at the level of common iliac vessels and dilated ureter above the obstruction. She was diagnosed as OVS. The case was treated with laparoscopic surgery. As mentioned in surgical technique, the entire operation was transperitoneal. We dissected the ovarian vein and the ureter, and released the ureter and its folds, resected the ovarian vein. The ureter seemed good in diameter, there was no need to resect a part of the ureter and re- anastomose. No intraoperative complications. The procedure was performed in 90 minutes. The day after we removed the catheter. The postoperative period was uneventful. She was discharged 72 hours later. Renal scan from eight months later (Figure 4) showed improvement from 30.8% to 46.5%. Renal scan from two years later showed right kidney with 47.9% functioning, with good renogram graph (Figure 5). Ultrasonography from 24 months later showed no hydronephrosis. Today, nine years later, she is still asymptomatic without evidence of obstruction.

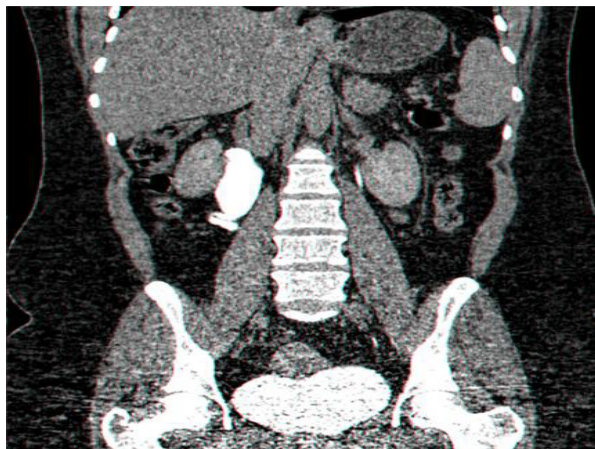


Figure 1: CTU- before operation.

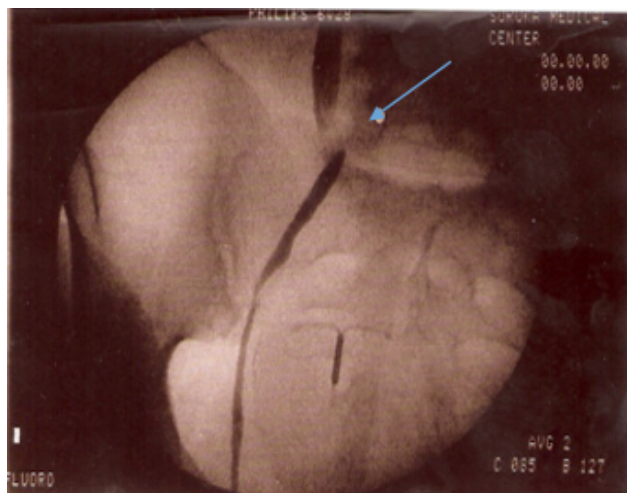


Figure 2: Retrograde pyelography.

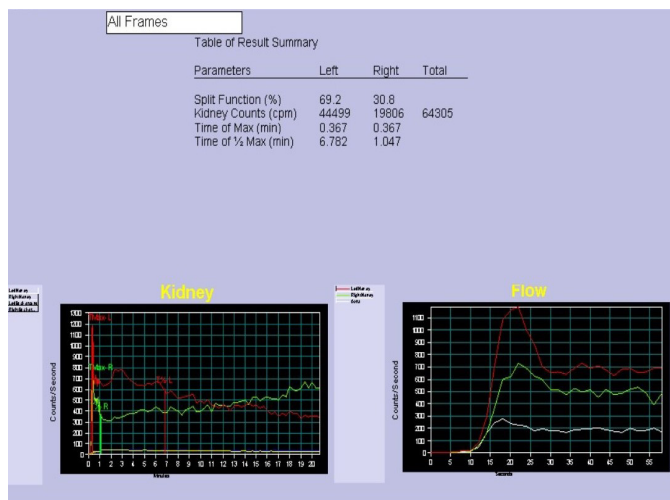


Figure 3: DTPA- Renal Scan, before operation.

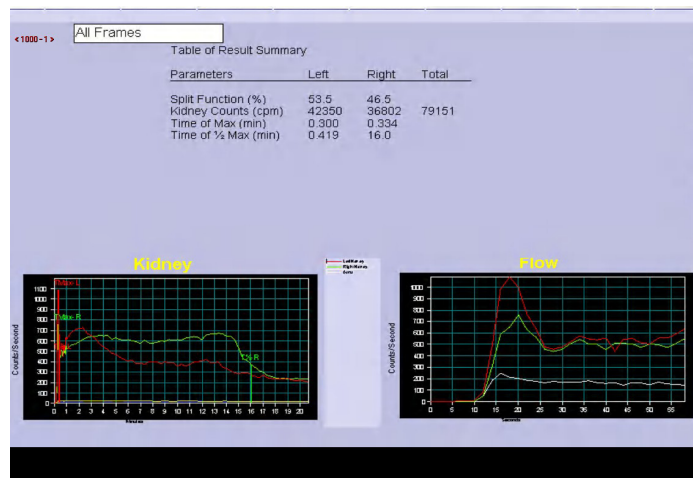


Figure 4: DTPA- Renal Scan, eight months Later.

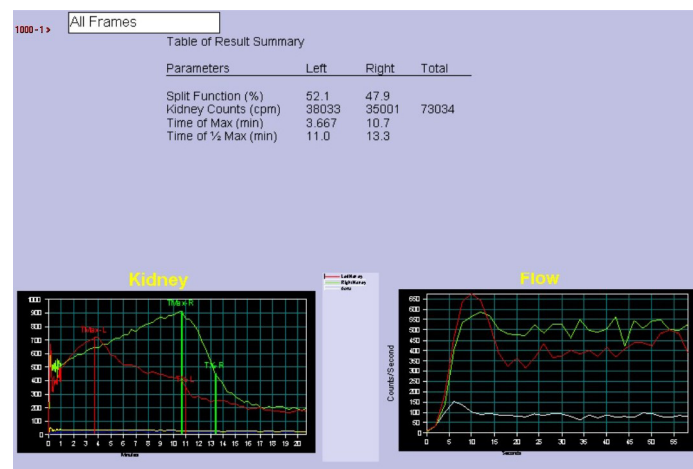


Figure 5: DTPA- Renal Scan, two years Later.

Discussion

The OVS is an uncommon clinical entity causing external ureteral obstruction and hydroureter. Tourne` G et al published the results of eight cases. They concluded that surgery was the appropriate therapy and the laparoscopic approach should be preferred [2]. Elashry et al. presented six cases with benign extrinsic ureteral obstruction, four patients presented retroperitoneal fibrosis, one case due to ovarian disease and one case was the OVS, the latter was the first case reported in the literature on a patient submitted to a laparoscopic surgery management [3]. In 1998 Marcovich and Wolf jr. published the second case of OVS managed by ureterolysis and ovarian vein laparoscopic resection, they showed the benefits of this technique such as direct inspection of the pathologic anatomic conditions, the postoperative morbidity, and the excellent cosmetic results [4]. Almeida et al. published their successful case report with OVS using a laparoscopic approach with hasson trocar

[5]. Kone KR, published his article with OVS in an 8-year-old child. Laparoscopic ureterolysis was performed with ligation of the arteriovenous malformation during the first operation. In their case ureterolysis was not effective, the patient was re-operated and ureter ureterostomy was performed after 3 months. This was to emphasize the importance of removing the diseased segment even if it looks normal [6]. In the published OVS case reports there was no need to re-operate the patients. Manoharan et al. reported their case of OVS in a young female which was managed by robot-assisted laparoscopic ovarian vein ligation, resection of stenosed ureteric segment and end-to-end ureterostomy [7]. Badger et al. were the first to use the robot for ureterolysis and ovarian vein excision [8].

We preferred to operate the patient using a trans peritoneal approach, because of large intraperitoneal space, and it is easier to deal with other main vessels like the common iliac, so laparoscopic approach may limit the risk of hemorrhagic complications if a vessel is incised [9]. As we can see in retrograde pyelography that the obstruction at the level of the right common iliac vessel (Figure 2). Sato et al. described a case of OVS successfully treated with retroperitoneoscopic techniques. It was the first paper to describe ureterolysis and ovarian vein resection using retroperitoneoscopic techniques. The patient has been completely pain free for 36 months of follow-up [10]. Ovarian vein syndrome is a rare cause of ureteral obstruction. Most of these cases occur during pregnancy likely from the gravid uterus causing ovarian vein dilatation and valvular incompetence. Hormonal changes associated with pregnancy also affect the muscular wall of ureter, causing decrease in tone and may facilitate compression as well. There is a predilection for right side and in thin females. The traditional treatment has been the ligation of ovarian vein and ureterolysis.

The ureteral approach by trans peritoneal laparoscopy and colon mobilization facilitates its dissection, identifies its relation to other structures, as well as making possible the concomitant treatment of gynecological diseases. For the ovarian syndrome treatment, ureterolysis and ovarian vein resection are performed, using only 3 trocars. Owing to its simplicity, low morbidity, and good results obtained, this procedure represents a good option for the surgical management of this syndrome.

Conclusion

OVS is an uncommon disorder. Differential diagnosis should be done when dealing with external ureteral obstruction. In our opinion laparoscopic surgery should be the best approach to treat this pathology.

References

1. Hubner G (1978) The ovarian vein syndrome. Eur Urol 4: 263-268.
2. Tourn'e G, Ducroux A, Bourbon M, Blinding H (2002) The ovarian vein syndrome: eight cases and review of the literature. J Gynecol Obstet Biol Reprod (Paris) 31: 471-477.
3. Elashry OM, Nakada SY, Wolf JS Jr, Figenshau RS, McDougall EM, et al. (1996) Ureterolysis for extrinsic ureteral obstruction: a comparison of laparoscopic and open surgical techniques. J Urol 156: 1403-1410.
4. Marcovich R, Wolf JS Jr (1998) Laparoscopy for the treatment of positional renal pain. Urology 52: 38-43.
5. Almeida A, Cavalcanti F, Barbosa S, Cohen R, Medeiros A (2003) Laparoscopic approach in the ovarian vein syndrome. Int Braz J Urol 29: 45-47.
6. Kone KR (2014) Arteriovenous malformation causing obstructive uropathy: A different dimension to ovarian vein syndrome. Indian J Urol 30: 448-449.
7. Manoharan V, Parmar K, Mavuduru RS, Rai T, Tyagi S (2018) A rare indication of robot-assisted uretero-ureterostomy: ovarian vein syndrome. J Robot Surg 1-3.
8. Badger WJ, De EJ, Kaufman RP Jr (2008) Robotically assisted excision of ovarian vein for intermittent ureteral obstruction. JSLS. 12: 166-168.
9. Gettman MT, Lotan Y, Cadeddu J (2003) Laparoscopic treatment of ovarian vein syndrome. JSLS 7: 257-260.
10. Sato F, Nomura T, Shin T, Hirai K, Matsubara T, et al. (2008) Retroperitoneoscopic treatment of ovarian vein syndrome. J Laparoendosc Adv Surg Tech A. 200818: 739-742.