Laparoscopic treatment of ovarian vein syndrome: A case series

Wissem Hmida, Mouna Ben Othmen, Faouzi Mallat, Sidiya Oueld Chavey, Mehdi Jaidane, Faouzi Mosbah

ABSTRACT

Introduction: Ovarian vein syndrome is a rare entity of ureteral obstruction. Its pathogeny and clinical expression are highly polymorphic. The treatment gains great advances because of the development of laparoscopy.

Case Series: We reported two cases of ovarian vein syndrome occurring in two multiparous women, with unremarkable past medical history. The patients were presented with isolated right flank pain. The diagnosis was confirmed by computed tomography angiography in the two cases. Ovarian vein ligation was successfully performed throughout a retroperitoneoscopical approach with excellent outcomes.

Conclusion: The ovarian vein syndrome continues to be a rare diagnosis that should be recognized. The diagnosis is mainly urographic. Owing to its simplicity, low morbidity, and good results attained, the laparoscopic approach will continue to advance the surgical management of ovarian vein syndrome.

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Introduction: Ovarian vein syndrome is a rare entity of ureteral obstruction. Its pathogeny and clinical expression are highly polymorphic. The treatment gains great advances because of the development of laparoscopy. Case Series: We reported two cases of ovarian vein syndrome occurring in two multiparous women, with unremarkable past medical history. The patients were presented with isolated right flank pain. The diagnosis was confirmed by computed tomography angiography in the two cases. Ovarian vein ligation was successfully performed throughout a retroperitoneoscopic approach with excellent outcomes. Conclusion: The ovarian vein syndrome continues to be a rare diagnosis that should be recognized. The diagnosis is mainly urographic. Owing to its simplicity, low morbidity, and good results attained, the laparoscopic approach will continue to advance the surgical management of ovarian vein syndrome.

Keywords: Ovarian vein syndrome, Urographic, Laparoscopic approach

INTRODUCTION

Ovarian vein syndrome is an uncommon cause of ureteral obstruction caused by an aberrant dilated ovarian vein [1]. It is a poorly understood clinic-pathological condition first described in 1964 [2]. Typically occurring in young multiparous woman with a right-sided predilection. The symptoms are non-specific including acute or chronic lumbar pain. The diagnosis is urographic. The treatment gains great advances because of the development of laparoscopy.

CASE SERIES

We reported two cases of ovarian vein syndrome treated by laparoscopic approach.

Case 1: A 43-year-old female with obstetric history of three gestations, presented with a 24-month history of recurrent right flank pain. She denied having a history of gross hematuria or urinary tract infection. On physical examination, BMI was at 17. Laboratory tests revealed a creatinine 90 μmol/L. The urine analysis was normal.

Ultrasound followed by computed tomography (Figure 1) showed a moderate dilatation of the right upper urinary tract and confirmed the diagnosis of right ovarian vein syndrome.

Through a retroperitoneoscopic approach, the ovarian vein was dissected, ligated and resected. The mean operating time was one hour. Preoperative and...
postoperative period were uneventful, and the patient was discharged after 48 hours of surgery.

In a follow-up of nine months the patient remained asymptomatic. Urine cultures repeated every three months were negative and there were no radiologic signs of ureteral obstruction.

**Case 2:** A 38-year-old female with obstetric history of two gestations, presented with a nine-month history of recurrent right lumbar pain. She reported that the pain was exacerbated in premenstrual period, but she did not have any history of hematuria or urinary tract infection. The physical examination did not reveal any abnormality. Laboratory tests showed a negative urine culture and a creatinine value of 65 μmol/L.

Imaging investigations showed moderate dilation of upper right urinary tract. The diagnosis was confirmed by computed tomography angiography revealing the compression of the right ureter by a dilated ovarian vein measuring 9 mm in diameter.

The patient underwent a ligation of ovarian vein throughout a retroperitoneoscopic approach. The procedure was successfully performed and the mean operating time was 55 minutes. Postoperative outcomes were good and the patient was discharged after 48 hours. In a follow-up of two years, the patient was asymptomatic with resolution of obstruction in radiologic finding.

**DISCUSSION**

Ovarian vein syndrome is a rare cause of ureteral obstruction [1]. In 1964, Clark reported a series of 129 right-sided ovarian vein syndromes. Many authors have published case reports of the ovarian vein syndrome, but the largest study includes only eight cases [2]. It is classically described on the right side in 95% of cases [3, 4].

The pathophysiology of ovarian vein syndrome is still poorly understood. Several mechanisms have been suggested [2], mainly a ureteral compression by an aberrant ovarian vein draining into the right renal vein, hormonal changes associated with pregnancy may also explain ovarian vein syndrome [2, 5, 6]. It is probably a multifactorial syndrome [7].

The symptoms appear frequently in multiparous women, but have been also described in nulliparous women and children [2, 8–12]. The clinical features have no specificity including an acute or chronic lumbar pain, recurrent urinary tract infection, and frank hematuria [2, 9, 13]. Typically, the pain is exacerbated in premenstrual period or during pregnancy [7, 4]. In this cases, the two patients were presented with isolated right lumbar pain; one of the exacerbated in premenstrual period.

A careful preoperative evaluation must be required to eliminate other ureteral obstruction causes such as tumor compression and retroperitoneal fibrosis [1]. That is why some radiological examinations were indicated to confirm the diagnosis of ovarian vein syndrome [4]. The abdominal ultrasound showed generally moderate dilatation of the upper urinary tract. Tranvaginal ultrasound can reveal dilated ovarian veins [7].

The gold standard for diagnosis was intravenous urography showing typically dilation and tortuosity of upper ureter with transverse defect at L3/L4 level [2, 7]. The computed tomography angiography revealed the crossing ovarian vein and excludes other causes of ureteral compression such as tumor compression retroperitoneal fibrosis [8].

In the case of our patients, the diagnosis was confirmed by computed tomography angiography.

Various management options for ovarian vein syndrome have been described; including conservative measures (medical treatment and embolization), and surgical excision, Wish represent the radical treatment of this entity [14].

Traditionally, ligation of ovarian vein has been performed through an open surgery. However, the laparoscopic approach has gained traction since the first report of transperitoneal laparoscopic ovarian vein ligation published by Elashry et al. in 1996.

The laparoscopic treatment, as a minimally invasive alternative to the open surgery [8]. It had progressed well recently to involve use of retroperitoneoscopic approach [2]. It had proven to be a valuable technique, offering superior visualization of the operative field. It permits careful assessment of the periureteral anatomy and identification of the ovarian vein [1].

It may limit the risk of hemorrhagic complications [1], reducing postoperative pain and analgesic requirement improvement in convalescence time and patient outcomes [1, 8, 15, 16]. As seen in these cases, the ligation of the ovarian vein and ureteral dissection by retroperitoneoscopic approach was easy, with an excellent immediate and long-term outcomes and the patients being discharged after a short hospital stay.
CONCLUSION

The ovarian vein syndrome continues to be a rare diagnosis that should be recognized. The diagnosis is mainly urographic. Owing to its simplicity, low morbidity, and good results attained, the retroperitoneoscopic approach will continue to advance the surgical management of ovarian vein syndrome.

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Acknowledgements
We are grateful to Pr. Faouzi Mosbah for his comments on the manuscript.

Author Contributions
Wissem Hmida – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Mouna Ben Othmen – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Final approval of the version to be published
Faouzi Mallat – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
Sidiya Oueld Chavey – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published
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Faouzi Mosbah – Substantial contributions to conception and design, Acquisition of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor
The corresponding author is the guarantor of submission.

Conflict of Interest
Authors declare no conflict of interest.

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### Article citation:
Hmida W, Othmen MB, Mallat F, Chavey SO, Jaidane M, Mosbah F. Laparoscopic treatment of ovarian vein syndrome: A case series. Int J Case Rep Images 2014;5(11):739–743.

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