Right Ovarian Vein Syndrome

Nasser Algharem, MD, FRCR, EBIR.

KING KHALED HOSPITAL NAJRAN
Disclosure

Speaker name: Nasser Algharem

☐ I do not have any potential conflict of interest
Clinical case
A 47-year-old multiparous woman who had conceived 4 times; had been admitted many times over the past one year suffering from severe right renal colic, listlessness, fatigue, and gross haematuria.

The patient had a long history of multiple medical visits to ER, and urology clinics and lastly had been undergone a cystoscopy and retrograde pyelogram for a possible diagnosis of right sided mid ureter stricture.
She was diagnosed as a case of recurrent UTIs and possible passed stones earlier, then as a stricture at the right ureter due to external compression or internal mucosal neoplastic changes and after a second look careful revision of her CT and MRI images, Rt ovarian vein dilatation around the right ureter was noted.

On ureteroscopy; brush biopsy was obtained and the urologist confirm easy passage of his catheter with no resistance at the expected stricture.
Upon setting with the patient and discussing all previous CT, MRI, IVU and US thoroughly and the clinical symptoms was pointing to a strange increase in pain on lying down and around the cycle.

The possibility of Rt OVS/PCS was discussed with the patient and urologist along with the options of endovascular confirmation and management. Both the patient and the urologist strongly agreed for intervention as she had been suffering for a year and tried most of the available management options.
Coronal CT, irregularity at

Coronal T2WI, Tapered ureter
Post Gd T1WI
In and out of Phase MRI

Dilated Rt ovarian vein
Rt ovarian vein

Rt ureter
US shows Hydronephrosis

DMSA scan, Decrease function of Rt kid.
Rt ovarian venogram, Dilated vein
Foam sclerotherapy and coil embolization of Rt ovarian vein
Post Angio KUB, proximal hydronephrosis
3 months later
Discussion
Introduction:

- Ovarian vein syndrome (OVS) is a rare condition caused by varicose, dilated ovarian veins inducing chronic ureteral obstruction. The OVS was first reported and described by Clark in 1964, yet its existence as a true pathophysiological entity remains controversial.

- It may present as an acute or chronic disease, typically affecting young, multiparous women and is poorly recognised cause of ureteric obstruction and pelvic pain. The clinical symptoms of OVS include renal colic, uronephrosis, flank pain, hematuria, chronic low back pain, and even impaired renal function in some cases. But OVS is difficult to diagnose.
Ovarian Veins Anatomy:

The ovarian veins originate from the ovaries as 5–6 pampiniform plexi that travel behind both sides of uterine body, join the ovarian vein, and then travel along the ovarian artery. The 2 ovarian veins travel upward along the psoas muscles. The right ovarian vein joins the inferior vena cava, while the left ovarian vein joins the left renal vein.
Pathogenesis:

- According to Clark, OVS is caused by the compression of the ureter by dilated ovarian veins induced by pelvic congestion or an enlarged uterus during pregnancy.
- But in 1951, Hodgkinson reported that while ovarian vein flow can increase 60-fold and that the diameter of the ovarian vein can increase 3-fold, this did not result in compression of the ureter.
- In addition, a more recent study conducted by Southwell and Bourne in 1971 showed that when the ovarian vein was fixed and manually dilated, no ureteral obstruction was found.
Pathogenesis:

- Together, the earlier report by Hodgkinson and the later study by Southwell and Bourne suggest that substantially increased venous pressure causes dilation of the ovarian veins and compresses the ureter thus resulting in OVS.

- Therefore, these reports explained that although the pregnant women have different levels of ovarian vein dilation, but OVS incidence is not high. This might be because of the threshold pressure that most pregnant women do not reach to cause OVS.
Clinical features:

- **OVS is uncommon in nulliparous women. Symptoms are variable and non-specific, including abdominal pain, particularly in the iliac fossae, flanks and hypochondrium.**
- The pain tends to be positional, and is worse lying down on the affected side. It is often cyclical, peaking shortly before menstruation.
- **Urinary symptoms from ureteric obstruction include recurrent urinary tract infections, hydronephrosis, pyelonephritis, renal colic and frank haematuria.**
Clinical features:

• Gynaecological conditions such as endometriosis, pelvic inflammatory disease and salpingitis must be considered.

• Ovarian vein thrombophlebitis, a condition which typically presents in the first few days post-partum with iliac fossa pain, fevers, and often a pelvic or abdominal mass should be excluded if such features are present.
Ovarian vein syndrome vs. pelvic congestion syndrome

- OVS should be distinguished from Pelvic Congestion Syndrome (PCS). Whilst sharing a similar pathology (dilated ovarian veins), affecting a similar demographic (women of child-bearing age), and responding to similar surgical treatment (venous embolization/ligation), the clinical manifestation is different.
Ovarian vein syndrome vs. pelvic congestion syndrome

- OVS is attributed to *dilated ovarian veins only*, whilst PCS is thought to be a manifestation of *dilatation of the entire anastomotic network of pelvic veins* (ovarian, uterine, iliac), often with distal extension to involve lower limb veins.

- PCS is characterised by cyclical pelvic pain, often preceding the onset of menstruation. It typically, but not exclusively, begins during pregnancy in multiparous women, when the gravid uterus causes pressure on, with subsequent dilatation of, the ovarian veins.
Ovarian vein syndrome vs. pelvic congestion syndrome

• A dull ache and a sensation of perineal heaviness persist beyond pregnancy, and vascular congestion spreads distal to the ovarian veins giving rise to vulval and lower limb varicosities, with congestion of the pelvic organs.
• Pain is often postural, being worse on standing and eased on lying down, and patients complain of dyspareunia and post-coital pain.
Ovarian vein syndrome vs. pelvic congestion syndrome

• Urinary symptoms are infrequent, with urinary frequency and urgency being the most prevalent features. On clinical examination, there is commonly point tenderness over the region of the ovary and cervical excitation.

• By contrast, OVS is typified by a constellation of urinary symptoms.
Ovarian vein syndrome vs. pelvic congestion syndrome

- Extrinsic compression of the ureters such as tumour compression or retroperitoneal fibrosis, renal colic, and infections e.g. tuberculosis, are all possible differentials, as are general surgical emergencies such as appendicitis.
- Neurological and musculoskeletal disorders should also be considered. Consequently, many feel that OVS is ultimately a diagnosis of exclusion.
Radiological therapy:

- Ovarian vein **embolization** has been used for many years as a treatment for OVS resistant to medical therapy.
- Coil embolization, first described in 1993, and now percutaneous chemical sclerotherapy with polidocanol or sodium tetradecylsulphate (STS) can be offered on an out-patient basis as less invasive options than surgery.
Radiological therapy:

- Short-term success from embolization therapy is estimated at 80–98%.
- Longer-term efficacy, as observed in PCS, also appears promising.
- Technical success rates from embolootherapy for the treatment of varices in PCS have been measured at 98–100%, and follow-up at 12 months has shown a mean reduction in pain scores of 65%.
Radiological therapy:

- Side-effects of embolization include thrombophlebitis, recurrent disease, and embolic material occluding non-targeted veins.
Conclusion:

• The debate around the ovarian vein syndrome continues, however, it is deemed by many to be a very real and easily curable cause of chronic pelvic pain in young women, who might otherwise suffer considerable physical and psychological morbidity when no other explanation for their pain can be found.

• OVS should be considered as a last resort in all young female patients presenting with chronic pain.

• Percutaneous embolization appears as safe outpatient procedure to diagnose and treat OVS.
Companion Cases
May-Thurner Syndrome with sever labial varices

Introduction:
May-Thurner syndrome (MTS) is an anatomically and pathologically variable condition leading to venous outflow obstruction as a result of extrinsic venous compression in the ilio caval venous territory. MTS is defined as extrinsic venous (left iliac vein (LCIV)) compression by the arterial system (Right common Iliac artery, RCIA) against bony structures (L5). With partial venous obstruction, the condition can be asymptomatic, but progression with symptoms related to chronic venous hypertension or venous occlusion can occur, with or without venous thrombosis.
May-Thurner Syndrome with severe labial varices

Result:
After the stenting and coiling the patient feel better for heaviness, swelling, pain and postural changes. The Labial varices much more improved and was on local foam sclerotherapy every second week for 3 months and now labial size reduced for more than 2/3 original size and is referred for plastic surgery.
May-Thurner Syndrome with severe labial varices

**Conclusion:**
Venous stenting offer a good endovascular reconstruction of compressed or occluded iliac veins secondary to MTS appears to be safe and effective. Foam sclerotherapy achieve a good volume reduction of the varicose labia.
RCIA

LCIV

L5

LIV compressed by RIA
Labial varices

Lt Thigh Varicosity
Venogram showing LCIV obstruction & collaterals
Right Ovarian Vein Syndrome

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