VENOUS MALFORMATION LEADING TO PELVIC CONGESTION SYNDROME: A CASE REPORT

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ABSTRACT:
Pelvic congestion syndrome (PCS) is a chronic condition that mainly affects female. We report a case of long-standing chronic lower abdominal pain caused by pelvic congestion syndrome, which is often underdiagnosed, and discuss the imaging findings. The patient was treated endovascularly with an IUD and lipiodol glue.

Keywords: Pelvic congestion syndrome, CT, Computed Tomography, Embolization, Coiling, lipiodol glue.

INTRODUCTION

Pelvic congestion syndrome (PCS) is a chronic condition that primarily affects women [1]. The American University of Obstetricians and Gynaecologists has given a detailed definition of PCS: 'Non-cyclical pain lasting 6 or more months localised in the pelvis, anterior abdominal wall at or below the umbilicus, lumbosacral back, or buttocks. The pain is severe enough to cause functional disability or require medical treatment, taking into account localisation and comorbidity [2]. Symptoms may worsen with prolonged standing or in an upright position [3]. The aetiology of PCS is not only caused by the failure of the mechanics of the venous system (missing/dysfunctional valves, venous kinks), but hormonal imbalances have also been reported to play an important role in the development of PCS [4].

Making the diagnosis of PCS is challenging because of the non-specific clinical presentation, and usually the diagnosis of PCS is made later, after several investigations have been performed on the patient. Treatment of PCS is by endovascular embolization of the diseased vein causing the venous congestion [5]. We have a case to discuss; a lady who had several underlying diseases was examined several times without any relief from her chronic pelvic pain. She was diagnosed with PCS and underwent embolization of the gonadal veins and showed marked improvement after the procedure.

CASE REPORT

A 59-year-old woman with fibromyalgia and hypothyroidism complained of long-standing chronic lower abdominal pain radiating to the hip and perineum. Occasionally associated with lower

back pain and altered bowel habits. There was no history of pelvic or abdominal surgery. She had been treated by other specialists: a rheumatologist, a gynaecologist, an orthopaedic surgeon and a colorectal surgeon who diagnosed uterine fibroid, lumbar spondylosis and diverticular disease. However, these diagnoses did not explain the pain and despite treatment, the patient continued to complain of persistent pain in the pelvic region.

Physical examination revealed no significant abnormalities except for mild tenderness in the suprapubic region. Blood tests revealed no signs of infection. A contrast examination was performed CT which showed abnormally dilated and tortuous parauterine veins (Figure 1). The venous dilatation extends to the left gonadal vein with no junction causing the congestion. A pelvic venogram was performed which showed a lobulated abnormal venous lake in the left hemipelvis draining into the left gonadal vein and tributaries of the left and right internal iliac veins (Figure 2). No arterial opacity or fistula was seen. These features are consistent with a venous malformation of the paraplexal vein. The patient was treated with endovascular embolization using a coil and lipiodol glue as the embolic agent, with the embolic agents targeted to the centre of the venous malformation. After embolization, the dilated left gonadal vein and the inflows of the left and right internal iliac veins are no longer opacified. At the outpatient follow-up three months ago, the patient confirmed that the symptoms had completely disappeared.

DISCUSSION

Pelvic congestion syndrome (PCS) is well established to be caused by pelvic venous insufficiency [1]. Nearly 40% of the thirty percent of patients with chronic pelvic pain are due to PCS [8]. The prevalence of chronic pelvic pain among women aged 18 to 50 is about 43% in the whole world population [9,10]. The aetiology is thought to be due to various causes: valvular insufficiency, venous obstruction and hormones. Obstruction or sluggish drainage of the utero-ovarian and salpingo-ovarian veins causes the patient to feel pain due to the stretching of the veins, which in turn leads to inflammation or obstruction of the genital organs, which increases the pain in the viscera, skin or muscles that share common spinal cord segments, resulting in what is known as viscero-visceral hyperalgesia [5]. Two anatomical findings that may lead to PCS: Ovarian vein reflux and varicose veins of the pelvis. Some patients may present with either condition and may also be asymptomatic. Primary pelvic insufficiency includes congenital or acquired ovarian vein insufficiency from non-obstructive causes. Secondary pelvic insufficiency can be caused by conditions such as nutcracker syndrome or May-Turner syndrome, in which the outflow of the ovarian or pelvic veins may be obstructed [1,8].

PCS consists of anatomic and physiologic abnormalities of the venous system or known as venous insufficiency along with clinical symptoms [6]; classically being chronic, non-cyclic pelvic pain or feeling of heaviness exacerbated by prolonged standing as well as closely related with urinary urgency, dysmenorrhoea, dysparenia and pelvic or lower extremities insufficiency [6,7]. Pelvic varices may also develop as a result of slow flow, inflammation, thrombosis and insufficiency in which patient can be asymptomatic [12]. Venous malformations in the pelvis are typically associated with insufficiency of the ovarian vein and is very rare [15].

The diagnosis of PCS was made only after a venogram, the gold standard for detecting PCS. The diagnosis was also made by a contrast-enhanced examination CT, which revealed a lobulated venous lake suggestive of venous malformation. As a rule, the diagnosis of PCS is not always considered in the work-up of chronic pelvic pain in the absence of specific clinical symptoms and can only be made after other causes of chronic pelvic pain have been ruled out. As it is challenging to clarify the causes of chronic pelvic pain, most patients are often not referred for appropriate investigation and follow-up [15].

Embolization of dilated and/or refluxing gonadal and iliac veins shows promise for relieving pain symptoms in PCS patients. There are publications with consistent evidence that embolization is effective and has a low complication rate with a high technical success and a recurrence rate of 8% [15]. One study in the gynaecology literature reports that the technical

and clinical success rate is 100%, which indirectly supports embolization for PCS. The American Venous Forum has also updated its current guideline - ovarian vein embolization is a treatment for PCS.

CONCLUSION

To date, only one case of pelvic congestion syndrome secondary to pelvic vein malformation has been published. PCS is a rare condition with a non-specific clinical presentation, making it a real challenge for the physician to diagnose PCS. Proper examination, follow-up and imaging are essential to make the diagnosis of PCS.

STATEMENT OF ETHICS:

Informed consent was obtained from the patient for the publication of this work.

CONFLICTS OF INTEREST:

The authors have no potential conflicts of interest to disclose.

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DATA AVAILABILITY STATEMENTS:

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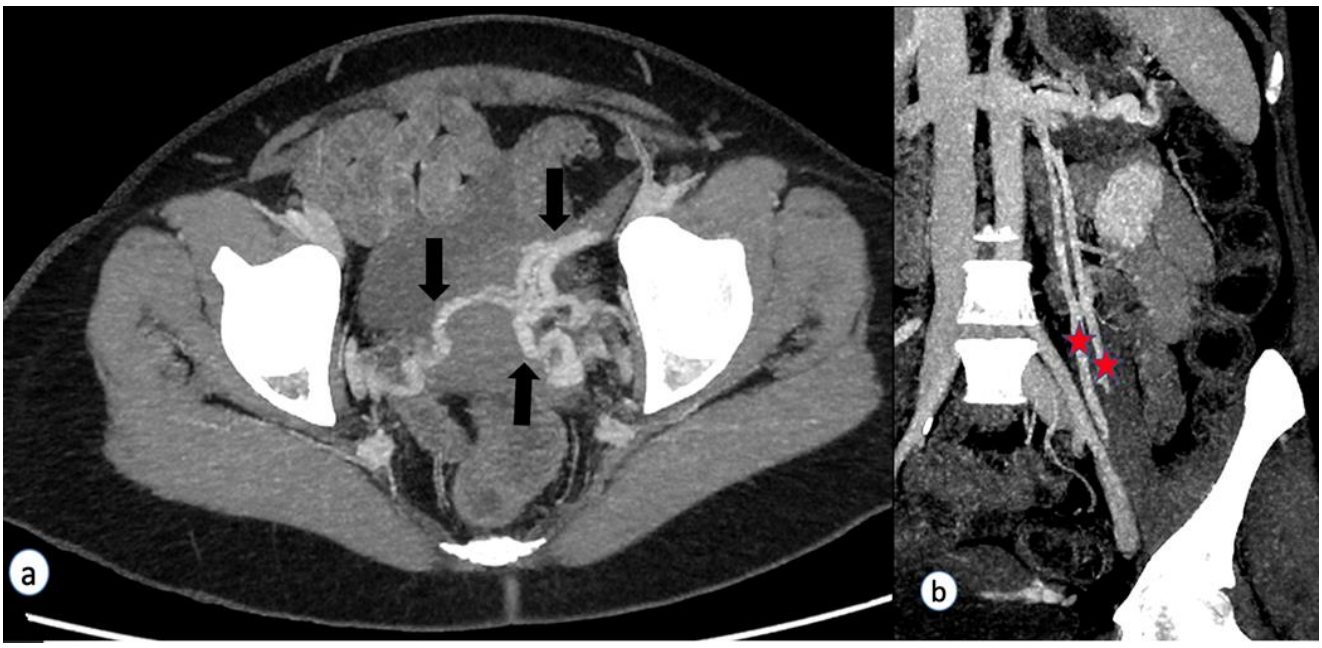

Figure 1: Maximum Intensity Projection (MIP) of contrasted CT Abdomen.
a. Axial view - enlarged tortuous parauterine veins (black arrows).
b. Coronal view - dilated and engorged left ovarian veins (red stars).

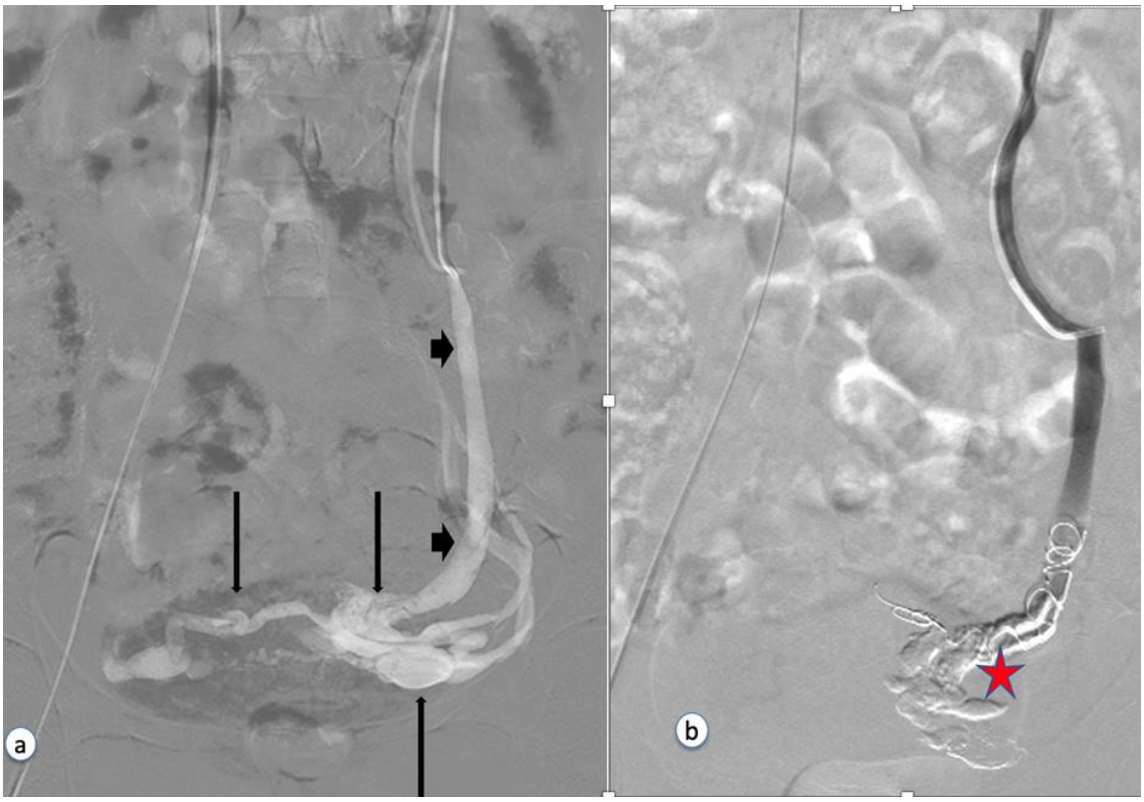

Figure 2: Digital Subtraction Angiography (DSA) of the parauterine veins.

a. Abnormal venous lake in the left hemipelvis (Thin arrows). The left ovarian vein is also dilated (Thick arrows).

b. Embolization performed using coils and glue (red star). The embolization material was targeted at the abnormal venous lake where the adjacent veins are draining into centre of the venous malformation.