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## Case Report

# Pelvic congestion syndrome: a potentially treatable cause of intractable dysmenorrhoea

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### ABSTRACT

Pelvic congestion syndrome (PCS) comprises a constellation of symptoms such as noncyclical pelvic pain, pelvic varicosities, dysmenorrhea and dyspareunia in multiparous women of reproductive age. It occurs due to pelvic venous insufficiency. The condition is a challenging entity and diagnosed after excluding other pelvic pathologies. Although venography has been considered gold standard for imaging diagnosis, Doppler ultrasonography, cross sectional imaging of pelvic veins at CT and MRI have been shown to provide adequate and accurate diagnosis. Here we report a case of intractable dysmenorrhoea in a 42-year multiparous woman and its successful management with embolization of pelvic varicose veins.

**Keywords:** Chronic pelvic pain, Pelvic venous insufficiency, PCS, Intractable dysmenorrhoea, Gonadal vein embolization

### INTRODUCTION

Pelvic congestion syndrome (PCS) includes all events related to the dysfunction of the pelvic venous system which could be congenital or acquired. The term "PCS" was first described by Louis Alfred Richet in 1857 and characterized by chronic, dull pelvic pain, pressure, and heaviness that persist for more than 6 months with no other cause.<sup>1</sup> These symptoms are attributed to dilated, tortuous and congested veins within the pelvis and is analogous to varicocele in the men. As the pelvic varicosities are not externally visible, the diagnosis remains frequently obscured.<sup>2-4</sup> Symptoms are exacerbated with menstruation, prolonged standing and activities that increase the abdominal pressure and are felt more during the daytime.<sup>2,3</sup> Physical examination may reveal varicose veins involving the vulva, perineal area and buttocks, copious vaginal discharge and sometimes cervical motion tenderness. Pelvic venous congestion (PVC) is reported in patients with family history of varicose veins, hormonal aberration, previous pelvic surgery, a retroverted uterus, and multiple

pregnancies.<sup>2,5</sup> A higher estradiol level has been frequently attributed to increased venous dilatation and the same generally subsides after menopause. Therefore, pharmacologic ovarian suppression has also been tried with variable success in PCS.<sup>6</sup>

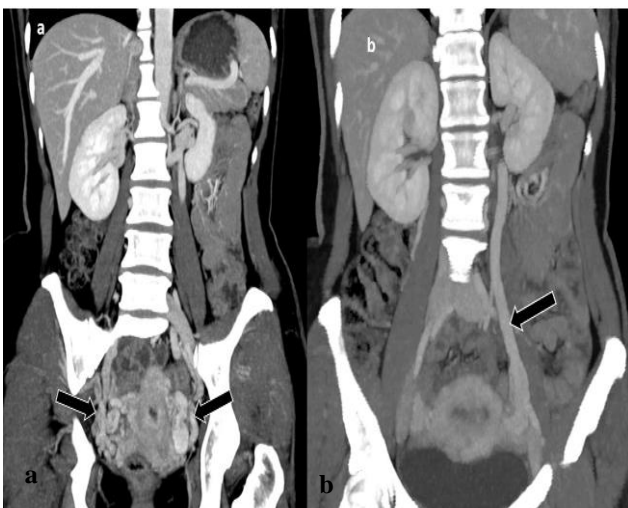
### CASE REPORT

A 40-year-old multiparous woman presented to us with progressively worsening dysmenorrhea over five years. She was diagnosed with pelvic inflammatory disease and adenomyosis by multiple physicians and her dysmenorrhea was refractory to conventional medical management. On pelvic examination the uterus was normal in size, with minimal bilateral adnexal tenderness. A transvaginal ultrasound was performed which revealed marked dilatation and tortuosity of veins in both adnexae, more on the left side with sluggish flow noted on colour flow Doppler suggestive of PVC. A contrast enhanced computerised tomography (CECT) was performed which showed multiple dilated and tortuous veins in bilateral

adnexa draining into respective ovarian veins which were also dilated. Right ovarian vein measured 8mm and left ovarian vein 10 mm in diameter. Dilated myometrial veins were also noted in the left lateral wall of uterus draining to the left adnexal veins. The uterus was normal in size with normal thickness of endometrial lining. Both ovaries were also normal and showed some follicles. Findings of the axial and coronal sections of contrast enhanced CT images obtained during the venous phase were diagnostic of PCS (Figure 1 and 2). Subsequently, she underwent embolization of bilateral gonadal veins and its tributaries with liquid sclerosing agent 3% sodium tetradecyl sulphate. At follow up three months following the procedure the patient showed symptomatic improvement.



**Figure 1: Axial section of contrast enhanced CT in the venous phase showing (a) dilated and tortuous venous varicosities in bilateral adnexa (black arrows); and (b) dilated myometrial veins in the left lateral uterine wall draining into left adnexal vein (black arrow).**



**Figure 2: Contrast enhanced CT abdomen and pelvis in the venous phase- (a) coronal reformatted image showing multiple tortuous venous varicosities in bilateral adnexa (black arrows); and (b) coronal Maximum intensity projection image showing dilated left renal vein (black arrow).**

## DISCUSSION

PCS is a condition that results from retrograde flow through incompetent valves in ovarian veins and tends to be more common in multiparous, premenopausal women.<sup>7</sup> Pelvic varicosities can be found in about 15% of women, a small subset of whom manifest with symptoms. PVC is a diagnosis of exclusion and the certainty regarding its presence is crucial as it is potentially treatable. Three main types of venous damage have been reported during selective phlebography.<sup>8</sup> The management is generally based on the type of PVC.<sup>9</sup> Type 1 corresponds to valvular or parietal venous incompetence which is responsible for the reflux. It is the most frequent physiopathology and endovascular treatments are the preferred method of management. Type 2 relates to stenosis or obstruction in a draining vein responsible for symptomatic substitute collaterals. Venous embolization along with release of obstruction has been advocated to manage type 2 PVC. Type 3 pelvic vein anomalies and pelvic reflux are secondary to a local extrinsic cause and surgical removal of mass or tumour seems more definitive option. Our patient had type 1 PVC. When clinical findings are equivocal, multimodal imaging modalities prove crucial to confirm venous dilatation.<sup>9</sup> Ultrasonography with Colour Doppler may show multiple dilated veins in the adnexae with dilated ovarian vein measuring >5-6 mm in calibre with flow reversal, which may get exacerbated with valsalva manoeuvre. CECT typically shows multiple dilated pelvic and ovarian veins. The absence of retroaortic left renal vein and left renal vein compression by superior mesenteric artery ruled out the possibility of Nutcracker syndrome in our patient.<sup>10</sup> Early diagnosis of PVC syndrome in a woman presenting with refractory dysmenorrhea or chronic pelvic pain is crucial to plan definitive management.

## CONCLUSION

Early diagnosis and appropriate management strategy depending upon the type of PCS are vital in improving patient satisfaction. Embolization appears safe and effective method in patient with type 1 PCS. However, randomized trials are needed in each category to establish the safety and efficacy of different treatment approaches.

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