

# Pelvic congestion syndrome – case report

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## ABSTRACT

Pelvic congestion syndrome is unfortunately an often-misdiagnosed disorder that causes chronic pelvic pain in women of fertile age. The main symptoms are represented by chronic pelvic discomfort or pain. This pathology appears to be related to a venous disorder generating pelvic varicosities. There are no standardized diagnosis criteria or treatment guidelines to aid in the management of pelvic congestion syndrome. The therapeutic options consist in medical or surgical treatment, sclerotherapy and endovascular treatment. We present the case of a 33-year-old woman with a severe case of pelvic congestion syndrome, that has affected her both physically and emotionally. The patient received specialized treatment in a Spanish medical unit, with subsequent improved symptoms. We concluded that should be founded specialised centres in our country for the diagnosis and treatment of pelvic congestion syndrome so that these young patients could embrace a normal, painless life.

**Keywords:** pelvic congestion syndrome, pelvic pain, embolization, ultrasound

## INTRODUCTION

Pelvic congestion syndrome (PCS) represents a poorly understood pathology (1), consisting in chronic pelvic discomfort and pain aggravated by prolonged standing or sexual intercourse, affecting women of childbearing age who present periovarian varicosities during ultrasound examination (2). The true incidence cannot be reported due to the absence of diagnostic criteria, but pelvic congestion syndrome accounts for up to 30% of cases presenting chronic pelvic pain (3). The etiopathology appears to be related to a primary venous pathology as women suffering from PCS have dilated, incompetent or with reflux ovarian veins (3,4). Risk factors associated with PCS are multiparity, probably due to the 50% increase in the pelvic venous capacity during pregnancy with reflux and venous incompetence afterwards (4), and premenopause

with the presence of estrogen acting as venous dilator (5-7).

Regarding the clinical features of PCS, women experience pelvic pain for more than 6 months. Usually, pain appears during or after pregnancy, and has an incremental intensity pattern with the following pregnancies (8). Pain is commonly unilateral, but it can also be bilateral; patients describe this pain as a low intensity ache or heaviness that increments premenstrually or after physical activity, prolonged standing or sexual intercourse. Other associated symptoms are urinary urgency, dysmenorrhea, acute dyspareunia or intense pain exacerbations (9); the patient frequently has perineal or even lower extremities varices (10). The physical examination reveals pelvic tenderness during both bimanual examination and direct palpation (3,8).

Currently, there have not been formulated diagnostic criteria for PCS. After excluding other causes

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for chronic pelvic pain, PCS diagnosis is established on specific symptoms, physical examination tenderness and solid evidence for pelvic vein incompetence or dilatation. The pelvic venous system, can be explored using ultrasonography, venography, computer tomography and magnetic resonance. Ultrasonographic findings consist in dilated pelvic veins of the adnexal region sometimes accompanied by the dilated arcuate veins from the myometrium. The left ovarian vein should be targeted; in most cases it presents reversed caudal flow (3,11).

There is no standardized treatment for PCS, the management being individualized and based on symptoms. There have been numerous attempts of medical treatment of PCS without vulvar varices with promising results: etonogestrel implant, goserelin (3.6 mg/month) or medroxyprogesterone acetate (30 to 50 mg per day). These therapies have showed lower pain scores and also lower venography scores (12-14). If resistant to medical treatment, invasive treatment is required. Among the therapeutical methods described in the literature, clinicians can use embolization or sclerotherapy of the ovarian veins with or without the internal iliac veins (11,15,16), laparoscopic or laparotomy ligation of the ovarian veins (17,18) as well as hysterectomy with bilateral salpingo-oophorectomy (BSO) for women who have completed their family planning (7,19).

Regarding treatment of PCS with vulvar varicosities, there is evidence sustaining that embolization and surgical approaches have similar results and outcomes (9,20). Embolization compared to vein ligation appears to be safe and, also, well tolerated by patients, and minimally invasive. Another approach concerns direct vulvar sclerotherapy or local excision of varicosities, which can be performed in cases of persistent disease (20).

Nutcracker syndrome is a variant of PCS associated with simultaneous left ovarian vein compression, subsequent left flank pain and hematuria being treated by laparoscopic gonadal vein ligation or by embolization of the gonadal vein associated or not with renal vein decompression treatment (3,21).

## CASE PRESENTATION

A 33-year-old female presents to our medical unit accusing pelvic pain with onset 2 years previously and with a progressively evolution, ranging from light intensity left pelvic pain occurring during the evening, premenstrual period or after doing effort, with amelioration after the menstrual period, to bilateral pelvic pain with irradiation on the inferior limbs and paresthesia. The patient presented with a weight of 57 kg and a height of 161 cm, with a body mass index of 22 kg/m<sup>2</sup>. Her obstetrical histo-

ry included an *in vitro* fertilization obtained pregnancy in 2015 with a 3,200 g newborn delivered by cesarean section. From the medical history we noted chronic smoking; the family history included varicose disease with varicose ulcer in both her parents. The patient was diagnosed using transvaginal ultrasonographic examination with an important PCS (Figures 1-4). The diagnosis was confirmed by an exploratory angiography which described dilated pelvic veins, performed with the intent of venous embolization (Figure 5).



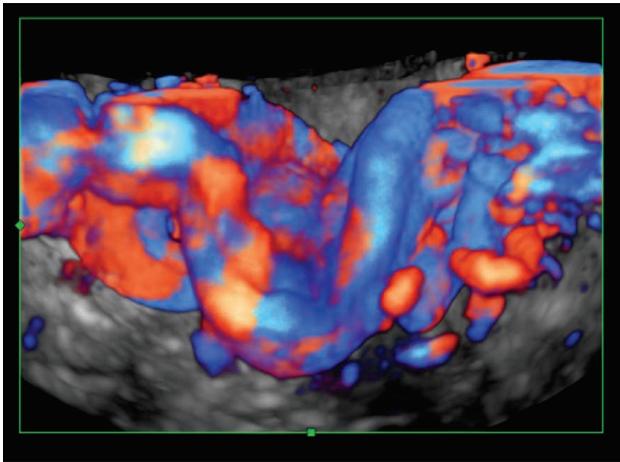
FIGURE 1. 2D transverse section of the uterus with bilateral dilated collector veins



FIGURE 2. 2D ultrasonographic image of periuterine varicosities; a differential diagnosis with hydrosalpinx could be suitable

The patient administered every therapeutic method available, in order to diminish the daily agonizing pain, including: micronized purified flavonoid fraction, healthy lifestyle, prolonged time spent for physical exercising, but with insignificant amelioration of the symptoms. The intensity of pain affected the patient's quality of life and finally she developed a depressive syndrome that requested specialized therapy.

The patient was referred to a Spanish medical unit specialized in treating women suffering from



**FIGURE 3.** 3D static HD-Flow image of varicose veins packages



**FIGURE 4.** 2D-ultrasonographic images of the progression of the PCS, with venous varicosities more severe on the (a) left side (yellow arrow) than the (b) right side (blue arrow)

PCS. She was recommended to undergo an angiograph computed tomography (CT) with venous phase. The CT examination of the abdomen and pelvis after administration of the contrast agent with angiographic acquisitions in the arterial phase, portal phase and late venous phase highlighted dilated pelvic venous plexuses from the broad and bilateral hypertrophic periovarian ligaments, with very accentuated change on the left side where an early



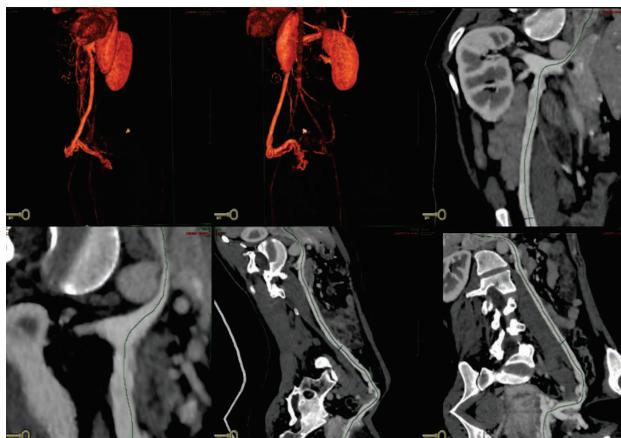
**FIGURE 5.** Angiographic examination aspect of dilated pelvic veins

venous return is observed, visible from the scans acquired in the arterial phase; both ovarian veins flow into the renal veins with obtuse angle on the right side and right angle (90 degrees) on the left side; the venous return gap on the right ovarian vein appeared delayed; the left ovarian vein lumen appeared at least uneven in the portion before pouring into the left renal vein without vascular imprints/ images of obvious vascular clamps; the absence of filling defects in the ovarian veins could be suggestive of constituted thrombi (Figure 6,7).

Preoperatively, the patient was evaluated using intravascular ultrasonography (IVUS) which excluded a Nutcracker syndrome.



**FIGURE 6.** Angio-CT 3D reconstruction – aspect of dilated left ovarian vein



**FIGURE 7.** Angio-CT aspect of dilated left ovarian vein

The patient underwent coil embolization of the left ovarian vein and of the pelvic venous varicosities. The intervention was a success, the symptomatology was significantly ameliorated after the intervention and the patient quality of life increased, due to the fact that the pelvic pain appearance is sporadic now, only associated with intense physical efforts.

## DISCUSSION

Symptoms involved in pelvic congestion syndrome are affecting the patient's quality of life; they are often attributed to a chronic form of pelvic inflammatory disease, with negative microbiological genital testing results. As there has not been yet established a guideline with definitive criteria for the diagnosis and further treatment of PCS, it is quite difficult to reach a positive diagnosis and recommend subsequent treatment to the patient.

Treatment of PCS includes medical therapy, surgical treatment, sclerotherapy, and endovascular treatment (22). Medical therapy consists in psychotherapy, psychotropic drugs administration (gabap-

entin, amitriptyline), dihydroergotamine, non-steroidal anti-inflammatory drugs, hormonal therapy (medroxyprogesterone acetate, goserelin acetate, etonorgestrel) and venoactive drugs (micronized purified flavonoid fraction). A study by Soysal et al. (23) suggests a 60% efficiency in case of simultaneous medical treatment with medroxyprogesterone acetate and psychotherapy. Surgical treatment, represented by ovarian veins ligation, are not commonly used nowadays (22).

Regarding endovascular treatment, a systematic review published in 2018 by Brown et al. (24) reveals that coil embolization has demonstrated clinical improvement from 82.1 to 100% of cases while combined methods using sclerosant with coil and/or Gelfoam embolization have presented clinical success in 83-100% of cases. Another review by Borghi et al. (25) reports 70-85% clinical success in cases of PCS treated using multiple embolization techniques with improved pain scores. Although there are multiple treatment methods described for PCS, there have not been yet established the most appropriate approaches for this pathology. Many studies have analysed the clinical improvement, not the success, therefore there is no 100% successful method for curing this invalidating disease.

## CONCLUSIONS

This under diagnosed pathology, with significant impact on the patient's quality of life, with no definitive diagnosis criteria or standardized treatment with 100% efficiency, presents a progressive evolution, with an intensification of the pain-related symptoms.

There is a real need for specialised centres in our country for the diagnosis and treatment of pelvic congestion syndrome so that these young patients could embrace a normal, painless life.

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