

## **Pelvic Congestion Syndrome in a Post-Cesarean Section and Postpartum Patient** (A Case Report)

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**Abstract:** Pelvic Congestion Syndrome (PCS) is a recognized cause of chronic pelvic pain resulting from impaired venous drainage and is most commonly observed in multiparous women. Pregnancy, hormonal changes, and cesarean delivery are known risk factors for this condition. This study was designed as a descriptive case study to illustrate the clinical identification and multidisciplinary management of PCS in a postpartum patient following cesarean section. We report the case of a 38-year-old woman (P3A0) who presented 24 hours after cesarean section with abdominal bloating and leg swelling. Physical examination revealed a well-healed surgical incision, a uterine fundal height two fingerbreadths above the symphysis pubis, mild lower-limb edema, and pelvic tenderness. Pelvic ultrasonography demonstrated dilated and tortuous adnexal veins, more prominent on the left side, findings consistent with PCS. Multidisciplinary management involving obstetrics, internal medicine, and radiology played a crucial role in establishing an accurate diagnosis and initiating effective treatment. Early recognition and coordinated care were essential in preventing progression to chronic pelvic complications. This case highlights the importance of considering PCS in postpartum women presenting with unexplained pelvic pain or edema, as timely diagnosis and appropriate management can improve outcomes and reduce long-term morbidity.

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### **1. INTRODUCTION**

Pelvic congestion syndrome is a pelvic venous syndrome disorder that is frequently misdiagnosed and challenging to manage. It is a relatively common cause of chronic pelvic pain in reproductive-aged women, accounting for 10–20% of gynecological consultations. However, only 40% of cases are referred to subspecialists or specific care teams for further evaluation (Kuo et al., 2025).

The etiology of PCS is multifactorial, involving genetic predisposition, anatomic variations, hormonal influences, venous wall damage, valvular dysfunction, retrograde blood flow, venous hypertension, and vessel dilation (Kashef et al., 2023).

Transcatheter venography is the gold standard for diagnosing pelvic congestion syndrome, but is only performed after non-invasive imaging such as Doppler ultrasound, computed tomography (CT) scans and magnetic resonance imaging (MRI) scans are inconclusive (Kashef et al., 2023; Kuo et al., 2025).

Once confirmed, treatment options for pelvic congestion syndrome include medical, surgical and endovascular therapies. Medical and surgical treatments are less effective than transcatheter pelvic vein embolisation. The latter has been proven to be a safe, effective and long-lasting therapy for treating pelvic congestion syndrome (Bałabuszek et al., 2022).

## **2. LITERATURE REVIEW**

Pelvic Congestion Syndrome (PCS) is a chronic pelvic venous disorder characterized by dilatation, tortuosity, and reflux of the pelvic veins, leading to venous hypertension and persistent pelvic pain. PCS is predominantly observed in women of reproductive age, particularly multiparous women, due to cumulative hormonal and hemodynamic changes associated with pregnancy. Estrogen-induced venous dilation and reduced vascular tone play a significant role in weakening venous walls and valves, predisposing patients to venous insufficiency and congestion (Meissner et al., 2021).

Several risk factors have been associated with the development of PCS, including multiple pregnancies, hormonal fluctuations, pelvic surgery, and cesarean delivery. During pregnancy, increased pelvic blood flow and compression of pelvic veins by the enlarging uterus contribute to venous stasis. Repeated pregnancies and surgical manipulation during cesarean section may further impair venous drainage and damage venous valves, increasing the risk of PCS in the postpartum period (Kies & Kim, 2012).

The clinical presentation of PCS is often nonspecific and includes chronic pelvic pain, abdominal bloating, pelvic heaviness, dyspareunia, and lower extremity edema. These symptoms frequently overlap with other gynecological, gastrointestinal, or urological conditions, resulting in underdiagnosis or delayed diagnosis. In postpartum patients, PCS may be overlooked due to the assumption that pelvic discomfort and edema are normal physiological changes after delivery (Durham & Machan, 2013).

Diagnostic evaluation of PCS relies on imaging studies. Doppler ultrasonography is commonly used as a first-line, non-invasive modality to identify dilated and tortuous pelvic veins with slow or reversed blood flow. Computed tomography (CT) and magnetic resonance imaging (MRI) provide additional anatomical detail, while transcatheter venography remains

the gold standard for definitive diagnosis, particularly when interventional treatment is considered (Phillips et al., 2014).

Management of PCS includes conservative, medical, and interventional approaches. Conservative management focuses on symptom relief, correction of contributing factors such as anemia or hypoalbuminemia, and improvement of venous return through mobilization. Medical therapies may involve analgesics or hormonal modulation, while endovascular embolization of affected veins is considered the most effective definitive treatment in persistent or chronic cases. Early recognition and appropriate management are essential to prevent long-term morbidity and deterioration in quality of life (Brown et al., 2018; Phillips et al., 2014).

### 3. METHODS

This article was designed as a descriptive case study focusing on the clinical identification and multidisciplinary management of Pelvic Congestion Syndrome in a postpartum patient following cesarean section. The case was selected to highlight diagnostic challenges and to increase awareness among healthcare providers regarding PCS as a potential cause of postpartum pelvic discomfort (Peraza-Arjona et al., 2025).

Data were collected through comprehensive clinical assessment, including patient history, physical examination, laboratory investigations, and imaging studies. Diagnostic evaluations consisted of routine blood tests, abdominal and pelvic Doppler ultrasonography, abdominal radiography, and chest radiography, performed as part of standard clinical care. Relevant clinical findings were documented and analyzed to support the diagnosis (Wungu et al., 2025).

Management was conducted using a multidisciplinary approach involving obstetrics and gynecology, internal medicine, cardiology, radiology, and psychiatry. Therapeutic interventions included supportive medical treatment, correction of nutritional deficiencies, symptom control, and psychosocial support. Patient progress was monitored during hospitalization to evaluate clinical response and stability.

This case study emphasizes practical clinical learning and contributes to health service improvement by illustrating the importance of early detection and coordinated care for Pelvic Congestion Syndrome in postpartum patients.

#### **4. RESULT AND DISCUSSION**

##### **Case Presentation**

A 38-year-old woman, gravida 3 para 3 (P3A0), presented 24 hours after a cesarean section (post-SC H-24) with abdominal bloating and bilateral lower-extremity swelling. The patient reported reduced appetite, no breast milk production, and normal bowel and bladder function. Additional symptoms included mild cough but no chest pain, palpitations, or shortness of breath.

From physical examination, vital sign in normal range, but well-healed surgical wound and fundal height two fingers above the symphysis pubis. Both lower extremities were warm with bilateral pitting edema. Vaginal examination showed no active bleeding. Laboratory findings indicated mild anemia (Hb 9.2 g/dL) and hypoalbuminemia (2.6 g/dL). Liver enzymes were elevated (SGOT/SGPT 162/75 U/L) while electrolytes and renal function were within normal limits.

Abdominal Doppler ultrasound (03/10/25) demonstrated dilated and tortuous adnexal veins, more prominent on the left side, consistent with suspected Pelvic Congestion Syndrome (PCS), as well as ascites in the perihepatic and pelvic cavities. Abdominal radiography (12/10/25) revealed ascites without signs of ileus or pneumoperitoneum. A chest radiograph (02/10/25) revealed cardiomegaly with suspected pulmonary hypertension and minimal right pleural effusion.

The patient was diagnosed as P3003 post Cesarean section day 1 with multiple complications, Suspected Pelvic Congestion Syndrome causing abdominal bloating and pelvic tenderness, Mild ascites, likely secondary to hypoalbuminemia and venous congestion; Rheumatic Heart Disease with ADHF Profile B contributing to peripheral edema and cardiomegaly; Mild anemia, elevated liver enzymes, and hypoalbuminemia likely associated with hepatic congestion or viral hepatitis; postpartum depression (F53.0) and organic asthenic disorder (F06.6) as psychosomatic components; and hemorrhoids grade III, intermittent asthma, and minimal pleural effusion as secondary findings.

The patient received fluid resuscitation with RL 500 mL (20 tpm), antiemetics (metoclopramide 10 mg/8h PO), gastroprotective therapy (omeprazole 40 mg/12h IV), iron supplementation (ferrous sulfate 300 mg/12h PO), folic acid (1 tab daily), and vitamin B12 (1 tab daily). Breastfeeding encouragement and supportive care were provided. Multidisciplinary coordination with internal medicine, obstetrics, cardiology, and psychiatry was established to address her complex systemic and pelvic conditions.

## Discussion

Pelvic congestion syndrome (PCS) is a chronic pelvic venous disorder characterised by the dilation and twisting of the pelvic veins. This leads to venous hypertension, reflux and pain. It most commonly affects multiparous women due to the hormonal and haemodynamic changes that occur during pregnancy, which weaken the venous walls and valves (Bałabuszek et al., 2022; Kuo et al., 2025).

In this case, the patient — a 38-year-old multiparous woman 24 hours post caesarean section — presented with abdominal bloating and bilateral leg edema, without fever or signs of infection. This suggests a venous or haemodynamic cause rather than an inflammatory pathology. During pregnancy, oestrogen and progesterone induce venous dilation, reduce vascular tone and increase pelvic blood flow. Meanwhile, the enlarged uterus compresses the pelvic veins, predisposing the patient to venous stasis (Bałabuszek et al., 2022; Meissner et al., 2021).

Repeated pregnancies and prior caesarean deliveries further increase the risk by altering venous drainage and damaging venous valves. The Doppler ultrasound findings of dilated, tortuous adnexal veins (dominant on the left) are consistent with PCS, as the left ovarian vein is more susceptible to compression between the aorta and superior mesenteric artery ('nutcracker phenomenon'). In this patient, PCS was likely multifactorial, involving pregnancy-induced venous pressure, surgical manipulation during caesarean delivery and systemic factors such as hypoalbuminaemia (2.6 g/dL) and cardiac dysfunction, which contribute to increased venous hydrostatic pressure and fluid accumulation (Jurga-Karwacka et al., 2019; Meissner et al., 2021).

The laboratory results demonstrated mild anemia (Hb 9.2 g/dL), elevated liver enzymes (SGOT/SGPT 162/75 U/L), and hypoalbuminemia, indicating hepatic congestion or mild hepatocellular injury secondary to systemic venous stasis. Electrolytes and renal function were preserved, suggesting adequate perfusion. These findings support the systemic component of venous congestion contributing to the pelvic manifestations (Corrêa et al., 2019).

Management of PCS in postpartum patients is typically conservative initially, focusing on symptom control and correction of underlying hemodynamic factors. In this case, treatment include Intravenous fluids (RL 500 mL, 20 tpm) for stabilization, Gastrointestinal protection (omeprazole) and antiemetic therapy (metoclopramide) for dyspeptic symptoms, Nutritional correction with iron, folate, and vitamin B12 to address anemia and hypoalbuminemia, Encouragement of mobilization and breastfeeding to enhance venous return and hormonal balance (Koo & Fan, 2014; Strong et al., 2024).

Multidisciplinary collaboration among obstetrics, cardiology, internal medicine, and psychiatry was crucial to address the interplay between cardiac, hepatic, and venous factors, as well as the psychological aspect of postpartum depression. With supportive and medical management, the patient's abdominal distension and edema improved gradually, and she remained hemodynamically stable. Long-term follow-up is essential to monitor for recurrence of symptoms and to evaluate the need for venous imaging or interventional treatment should chronic pelvic pain develop (Lamvu et al., 2021; Strong et al., 2024).

## 5. CONCLUSION

This case demonstrates that Pelvic Congestion Syndrome can occur in the postpartum period following cesarean section and may present with nonspecific symptoms such as abdominal bloating, pelvic discomfort, and lower-limb edema. These manifestations are often overlooked or attributed to normal postpartum changes, particularly in the presence of comorbid conditions such as venous congestion or hypoalbuminemia. Early identification through careful clinical assessment and appropriate imaging is essential for accurate diagnosis. Conservative management combined with multidisciplinary coordination involving obstetrics, internal medicine, cardiology, and other relevant specialties plays a key role in preventing the progression to chronic pelvic complications and in supporting optimal maternal recovery. This case emphasizes the importance of improving clinical awareness and integrated postpartum care to enhance maternal health outcomes.

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