International Surgery Journal
Estrada FGR et al. Int Surg J. 2024 Aug;11(8):1411-1415
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20241974

Review Article

Pelvic congestion syndrome and its treatment: topic review

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Received: 20 June 2024
Accepted: 12 July 2024

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ABSTRACT

Pelvic congestion syndrome (PCS) is a pathology characterized by pain in the pelvic region that occurs chronically and is usually associated with the presence of varicose veins in the genital, vulvar or perineal region as a consequence of venous reflux of gonadal, gluteal or peri uterine veins, as well as compression syndromes in the left renal veins or iliac segments, which can lead to a spectrum of clinical symptoms ranging from dysuria, pain when standing, dyspareunia and intense dysmenorrhea, or equally psychological symptoms such as mood disorders or depression, which affect the quality of life of patients. Despite its high prevalence, this disease continues to be underdiagnosed and mistreated. The etiology varies involving factors in mechanics, hemodynamics, anatomical defects, anomalies of venous return, multiparity, including hormonal factors, obesity, or sedentary lifestyle, which favor blood stasis and consequent venous dilation. The diagnosis is made with an appropriate clinical examination, and confirmed with imaging studies, phlebography being the gold standard due to its diagnostic and therapeutic usefulness. There is currently a wide variety in the treatment of PCS, however endovascular management with sclerotherapy and embolization is the one that has shown the best results with clinical improvement and quality of life. This article seeks to review the literature on pelvic congestion syndrome with the aim of understanding a frequently overlooked disease and the diagnostic and therapeutic alternatives to treat these patients.

Keywords: Pelvic congestion, Varicose veins, Pelvic pain, Revision

INTRODUCTION

Chronic pelvic pain is an entity that affects nearly ten million women worldwide and has important social and economic repercussions. Of the total cases, seven million remain without an etiological diagnosis and therefore do not receive adequate treatment, despite the technological advances available.[1]

Pelvic congestion syndrome treats a common pathology in the multiparous female population, which is rarely diagnosed due to its unconventional clinical features, which warrant a suspicious and directed examination. This has an impact on our clinical field due to its implication on public health and the symptoms on the quality of life of the patients who present it.[2]

An absence of knowledge about adequate treatment has been generated, which leads these patients to wander around different clinical fields, with various erroneous managements that lead to unsatisfactory results that make them remain with symptomatologic limitations during their daily lives.[3]

METHODS

To carry out this review, a bibliographic review of the most recent literature on general aspects, diagnosis and treatment of pelvic congestion syndrome was carried out, for a total of 26 bibliographies reviewed. The Elsevier, PubMed and MEDLINE databases were consulted in English and Spanish.

RESULTS

Etiology

The etiology of PCS is diverse, since mechanical and hormonal factors are involved that lead to insufficiency, and consequent dilation with reflux of the periovarian and peri uterine veins.[4] There may be dysfunction in the valve system, anatomical variations, alterations in uterine posture and changes in hormonal patterns associated with pregnancy, as well as extrinsic compression of the pelvic venous network, specifically the left renal vein or the left common iliac vein. which generates derivative pathways of venous flow that lead to dilation of the pelvic system.[5]

Symptoms

Clinically, it presents as chronic pain in the pelvic region for more than 6 months, dyspareunia and varicose veins that can occur in the genital area or in an atypical way through leaks in the third plane, which appear in the form of venous pathology, with the addition of classic symptoms such as heaviness, pain and trophic changes that characterize chronic venous disease with a typical presentation of the pelvic limbs with its classic truncal shape in saphenous territory or running through pelvic leakage points in the gluteal, vulvar or inguinal region.[6] There is a low response to pharmacological medical treatment, which is associated with the loss of physical and sexual function, which can lead to alterations in family dynamics or even presenting depressive symptoms.[7]

Clinical diagnosis

It is established through clinical history and physical examination, directly asking: chronic pelvic pain for more than six months, in which other causes such as gynecological, urological, psychological, or neurological causes were ruled out (present in 95% of patients); dyspareunia, managed as pain during and after sexual intercourse (present in 57%); dysuria, ruling out neurological or urological disorders (present in 12%); perineal heaviness (present in 38%); and psychological deterioration such as irritability, sleep disturbances and limitation of daily activities (present in 40%).

During the physical examination, observation of the suprapubic, vulvar, inguinal region and pelvic limbs must be considered, looking for: genital varicose veins (present in 60% of patients); varicose veins in pelvic leakage points, considering these: the clitoral, obturator, pudendal, inguinal, gluteus maximus and minimum (present in 90%); atypical varicose veins, not tributary to saphenous trunks or perforating veins (present in 70%); and deformity of external genitalia such as an increase in the size of the labia majora or minora (present in 20%).[8]

The combination of clinical signs and symptoms has a sensitivity of 96% and a specificity of 77%.[9]

Adequate exclusion of other diagnoses of chronic pelvic pain must be made, such as cancer, endometriosis, fibroids, fibromyalgia, orthopedic pathologies, polycystic ovary, pelvic inflammatory disease, among others.[10]

Imaging diagnosis

The presence of pelvic varicose veins in an imaging study is not synonymous with diagnosis, since around 47% of tomography scans of asymptomatic multiparous patients will present with these varicose veins, so the diagnosis of PCS includes a mainly clinical spectrum, in which that imaging studies help us to corroborate the diagnosis and, in the case of phlebography, perform the treatment during said procedure.[11]

Although PCS can occur in isolation due to reflux, secondary to insufficiency of the gonadal or ovarian veins, it can coexist secondary to a compressive process such as nutcracker or May Thurner syndrome (Figure 1), as well as after an obstructive process. as in post-thrombotic syndrome or a combined format between two or more of those previously mentioned.[12] For this reason, it is necessary to correctly visualize each non-invasive imaging complement (abdominal, transvaginal color, and Doppler ultrasound) or invasive (angio tomography, magnetic resonance angiography or diagnostic-therapeutic procedures such as phlebography), and thus perform a scan with an intentional search. of the intrapelvic and extra pelvic venous tracts, the points of possible compression and characteristics of the vessels studied.[13]

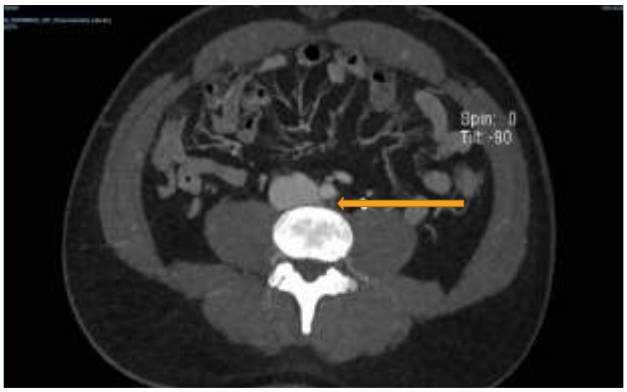

Figure 1: Compression of the left iliac vein by the left iliac artery, towards the vertebral body.

Ultrasound

The use of transvaginal Doppler ultrasound, preferably combined with transabdominal Doppler, is the diagnostic test that should be performed first, due to its profitability, accessibility in the office, practicality, and ease of use, allowing us to evaluate the flow and obtain dynamic images in real time and with Valsalva provocation maneuvers to accentuate venous reflux and thus obtain visualization. However, this is operator dependent and is exposed to false negatives related to abdominal fat or the

use of transvaginal ultrasound in patients who have not had sexual relations.[14,15] However, it can help us rule out other causes of chronic pelvic pain that are part of the differential diagnoses, such as gynecological or urological pathology.

Ultrasound criteria for diagnosis include visualization of dilated ovarian veins greater than 7 mm, the presence of dilated arcuate myometrial veins in communication with pelvic varicose veins, a venous flow pattern less than 5 cm/s, and reflux of the left ovarian vein.[16]

During the ultrasound, sites of extrinsic venous compression in iliac regions should be intentionally searched and, if possible, visualization of the aorto-mesenteric angle to diagnostically exclude compression of the left renal vein.[17]

Computed tomography and magnetic resonance imaging

These types of studies anatomically describe the pelvic vasculature and surrounding tissues in detail. The tomography generates radiation and shows the dilated venous varicose veins in the ovarian vein (Figure 2), area of the uterus or in the pelvis as an isodense image with respect to other abdominal veins on the post-contrast images. It has diagnostic criteria such as the presence of 5 or more ipsilateral para uterine veins that are tortuous (one or more >5 mm in diameter) or a diameter of the gonadal vein >8 mm. The reflux is given with the following categorization: grade I (limited to the left ovarian/gonadal vein), grade II (involves the ipsilateral parauterine veins), and grade III (crosses the midline).[18]

Magnetic resonance imaging provides us with little information regarding vascular dynamics, however it supports us in differential diagnoses, such as endometriosis and adenomyosis.[19]

Pelvic phlebography

It is the gold standard, with which the correct approach protocol for this type of patient mentions that phlebography can be performed once the presence of pelvic varicose veins has been demonstrated or in a diagnostic-therapeutic manner, since during this procedure They can embolize insufficient venous tracts (Figure 3).[20]

Treatment

Conservative and pharmacological treatment has been controversial for decades, since the use of different options has been analyzed such as phlebotonics, dihydroergotamine, non-steroidal anti-inflammatory drugs (NSAIDs), hormonal therapy with gonadotropin-releasing hormone (GnRH) agonists or progestogens and even psychological therapy.[21] And despite the improvement of symptoms with side effects that occur temporarily, such as alterations in body weight and mood, diaphoresis, edema, dryness in the vaginal area, among others.

The surgical option has shown improved long-term benefits, despite the risk of an invasive procedure, which the patient must be aware of as part of their therapeutic options.

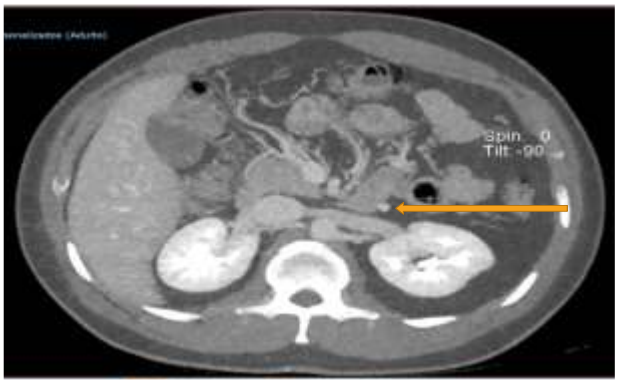

Figure 2: Dilatation of the left ovarian vein.

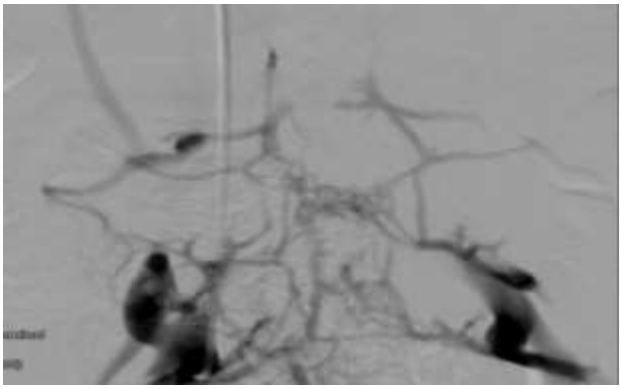

Figure 3: Pelvic phlebography with collaterality and venous reflux.

Endovascular treatment

Since 1991, Edwards et al published the first case of PCS managed endovascularly with embolization of the gonadal veins, finding adequate results in quality of life and improvement in symptoms.[22] For this reason, along with the development of improvements in endovascular therapy with updated embolization devices and minimally invasive techniques, SCP therapy during phlebography has become the standard of treatment.[23]

The Ibero American pelvis study group maintains a proposal for an intervention algorithm during diagnostic therapeutic phlebography, which covers the sequential study of congestive and compressive syndromes with their pelvic leak points, which lead to PCS.

This protocol is carried out with special attention to the use of local anesthetic to keep the patient awake and the consequent adequate performance of the Valsalva maneuver during the procedure. The approach is suggested in the forearm, through the basilic, cephalic or humeral vein, without excluding the option of an approach through

the internal jugular vein, always with the support of Doppler ultrasound for venipuncture.

Using a multipurpose 5 Fr catheter and a 0.035 mm hydrophilic guide, they are placed in the inferior vena cava for the initial performance of a cavography, to continue positioning in the left renal vein and the possible identification of reflux, compressive phenomena, and bypass pathways. gonadal, ascending and descending lumbar, adrenal. Once this segment has been assessed, it is cannulated and phlebography is performed, always with a Valsalva maneuver, of the left gonadal vein, in which reflux or peri uterine and adnexal collaterality, a union with the left iliac vein, as well as a possible derivation can be identified. to veins of the round ligament as an inguinal leak point. Subsequently, the right renal and gonadal veins, with the same technique as the left ones. We proceed to the iliac segment, with cannulation of the left common iliac vein and the possible identification of compressive phenomena (May Thurner syndrome) in all its variants that can cause flow reversal through the path of the internal iliac or hypogastric vein or even by the presacral or lumbar system, which can cause chronic low back pain as part of the symptoms due to narrowing of the conus medullaris.[24] Selectively, phlebography of the left internal iliac vein is performed, with supraselective cannulation of its branches that could cause leak points, these being the superior gluteal, inferior gluteal, obturator and internal pudendal veins, insisting on the use of the Valsalva maneuver. with which venous insufficiency and filling were evident at the time of contrast medium injection. Finally, the same procedure is performed contralaterally, starting phlebography in the right common iliac vein, subsequently selectively in the internal iliac vein and supraselective in the previously mentioned terminal branches.

For embolization, the use of 2% sclerosant with polidocanol in the form of a foam composed of 50% air and 50% sclerosant solution is suggested. Likewise, the use of controlled release coils, oversized by 30% with respect to the diameter of the vessel, with total occlusion of the vessel from distal to proximal, keeping 3 to 4 cm free prior to the mouth of the vessel, is mentioned as an appropriate embolization technique. of embolizing material (Figure 4); the performance of the sandwich technique (coil-foam-coil) and the use of NSAIDs for euthermia and adequate analgesia of the patient, who should ambulate early.[8]

DISCUSSION

The correct approach to the symptoms of PCS, especially pelvic pain that lasts more than six months, requires an analysis and study of the patient from the questioning to the meticulous clinical evaluation, which can allow us to direct the patient for decision-making. time to perform a diagnostic method.

We are faced with a pathology for which there is no study that establishes definitive risk factors associated with each subtype of PCS, since many aspects of the pathophysiology arise, including the morphological alterations in each person.

There is a consensus on the clinical presentation with the typical symptoms of PCS, which in the articles from which the data for this analysis were obtained, show as the majority chronic pelvic pain, pelvic sensitivity with heaviness, dyspareunia, and psychological disorders with a tendency to depression.

The diagnostic methods used are recommended in a uniform manner, sequential to their availability and with established criteria to maintain a global consensus. The use of Doppler ultrasound is mentioned in all bibliographies in the first instance due to its accessibility and lack of invasiveness compared to other methods. However, currently the gold standard is therapeutic diagnostic phlebography, which despite the use of contrast medium and high cost, presents the method of choice in all studies.

Pharmacological therapy is not discussed in depth, since if imaging confirmation is performed, the long-term improvement in symptoms will be seen with mostly satisfactory results using endovascular procedures with embolization of insufficient venous tracts, which has presented low rates of complications.

However, it is not exempt from these, as there are studies that have reported renal vein thrombosis, pulmonary thromboembolism due to migration of embolization material (coils), perforations in venous tracts with retroperitoneal bleeding, among others, however it is insisted on the low incidence of this type of events.[25]

Patient follow-up should be carried out to manage the extra pelvic leak points and pelvic limbs through the saphenous axis with sclerotherapy, as well as transabdominal Doppler ultrasound at 6 months to monitor the patency of the venous segments, as well as complementary psychotherapy if necessary.[26]

CONCLUSION

Pelvic congestion syndrome requires suspicious training at the time of clinical evaluation, as well as the performance and evaluation of imaging studies. Therapy must be combined and appropriate to the situation, in the first instance, intrapelvic resolution, then complementary extra pelvic resolution of the leak points and resolution of vertical or horizontal venous reflux of the limbs. This has proven to be effective with minimal morbidity and excellent results in the follow-up period. Training is required in all embolization techniques, stenting, thermal ablations, mechanochemical ablations, among others. If we focus on performing intrapelvic therapy, without considering the extra pelvic component, pelvic leaks may have partial results, with poor patient satisfaction, with recurrences or persistence responsible for the symptoms.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Estrada FGR, Juarez MAS, Valenzuela MEL. Pelvic congestion syndrome and its treatment: topic review. Int Surg J 2024;11:1411-5.