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Left ovarian to left external iliac vein transposition for the treatment of nutcracker syndrome - Preliminary Experience at Bach Mai Hospital, Hanoi

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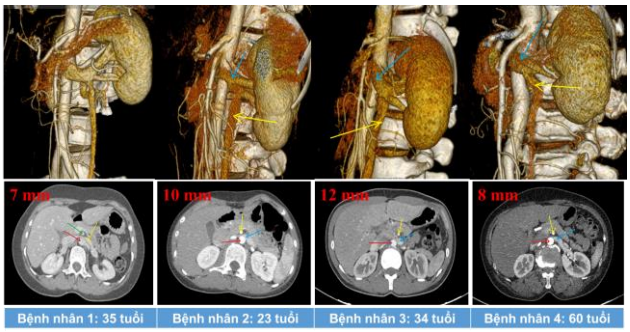
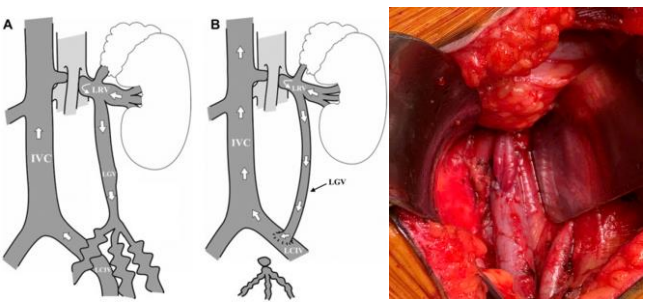
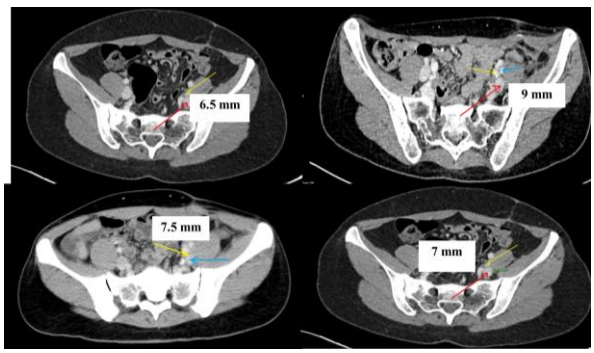
Nutcracker syndrome is defined as compression of the left renal vein (LRV), most commonly between the abdominal aorta (Ao) and the superior mesenteric artery (SMA). This compression increases pressure in the LRV, leading to retrograde flow and dilation of collateral veins such as the gonadal, periureteral, and paravertebral veins. Clinical manifestations are variable, with hematuria—either microscopic or macroscopic—being the most frequent. In females, the condition often presents as chronic pelvic pain, associated with ovarian or vulvar/perineal varices, resulting in pelvic congestion syndrome.



The most common current treatment is endovascular stenting of the LRV to relieve compression and improve symptoms. However, this method has limitations because of the low venous pressure in the renal vein, which predisposes to stent occlusion, and the need for long-term anticoagulation. Surgical options such as LRV transposition or venous bypass have been described, but outcomes remain suboptimal.



In this report, we present the technique of gonadal vein transposition for the treatment of Nutcracker syndrome in a series of four patients. Inclusion criteria were patients diagnosed with Nutcracker syndrome presenting with hematuria, chronic pelvic congestion, and gonadal vein dilatation with a transverse diameter > 6 mm at the iliac vein level. The procedure was performed through a left extraperitoneal approach, with exposure of the gonadal vein and iliac vein. The distal end of the gonadal vein was ligated, and the proximal end was reimplanted in an end-to-side fashion into the iliac vein. Postoperatively, patients received heparin anticoagulation followed by long-term aspirin therapy.



All four patients showed significant symptomatic improvement, with resolution of hematuria and pelvic pain. Follow-up imaging demonstrated a patent gonadal–iliac venous anastomosis and regression of pelvic varices.

1. Anaïs Debucquois, Lucie Salomon du Mont, Wilfried Bertho. Current results of left gonadal vein transposition to treat nutcracker syndrome. J Vasc Surg Venous Lymphat Disord. 2021 Nov;9(6):1504-1509.
2. John V White, Connie Ryjewski, Richard N Messersmith. Left ovarian to left external iliac vein transposition for the treatment of nutcracker syndrome. J Vasc Surg Venous Lymphat Disord . 2016 Jan;4(1):114-8