SH_BahniniA_Management of the Nutcracker Syndrome.txt

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abstract: The Nutcracker syndrome (NCS) is defined as a tight stenosis of the left renal vein (LRV) due to compression with a pressure gradient > 3mm Hg. The most common form is the compression of LRV between the anterior aspect of the aorta and the superior mesenteric artery. High pressure in the LRV can cause renal dysfunction and/or pelvic congestion syndrome, with development of huge pelvic varicose veins due to reflux into the left ovarian vein (LOV). Symptoms of medullar compression due to high pressure in medullar veins can be seen.

Patients and methods: From June 2006 to January 2011, we have operated upon 11 women, mean age 34.1 (25-45 years). 9 were multiparous. 10 complained of severe pelvic pain, dyspareunia, dysmenorrhea, associated with micturition and defecation problems. 7 had pain in the lumbar fossa and left flank and one had lower limbs claudication. 5 had significant varicose veins of lower limbs originating from the pelvis and vulvar varices. 9 had hematuria. Duplex scan showed a tight stenosis of the LRV with a permanent retrograde flow in the LOV in supine position in 10 patients. Phlebography disclosed a severe compression of the LRV between the aorta and the superior mesenteric artery with a mean reno-caval pressure gradient of 6.5mmHg (3-11mmHg), associated to a huge collateral network draining into big varicose pelvic veins, mainly through the LOV in 10 patients. In one patient with LOV agenesia, renal blood was drained into peri-renal collateral network. All patients were treated by surgical transposition of the LRV.

Results: 2 patients had a post-op hematoma that resolved spontaneously. With a mean follow-up of 18 months, pelvic congestion symptoms had completely resolved in 7 patients and were significantly reduced in two patients. In one patient, persisting macroscopic haematuria was symptomatic of a restenosis of the LRV at 6 months. 8 LRV transpositions were patent without anomaly on duplex scan, two had tight restenosis and one a positional compression. Both LRV restenosis were successfully treated by angioplasty and covered stents.

Conclusion: although rare, symptomatic NCS should be diagnosed. Indication of surgical treatment should be carefully weighed and proposed only in very selected cases including patients with disabling symptoms, renal repercussions, and venous hypertension. Midterm results of surgical LRV transposition are satisfactory.

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