Is coil embolization effectively and minimally invasive in the young man suffering from veno-occlusive dysfunction?

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Abstract

Is coil embolization effective and safe to treat impotence resulting from veno-occlusive dysfunction, we report five cases and literature review. From 2012 to 2017, refractory impotence prompted five young men to consult us despite coil venous embolization performed elsewhere. All patients were evaluated with general X-ray, Doppler sonography, computerized tomography, the abridged 5-item version of the international index of erectile function (IIEF-5) and our dual pharmaco-cavernosography. They were treated with the latest method of penile venous stripping which was carried out with circumferential and pubic longitudinal approaches under acupuncture aided local anesthesia. The deep dorsal vein, cavernosal veins were thoroughly stripped while the para-arterial veins were ligated segmentally. Follow-
up cavernosography was routinely
conducted for confirming sufficient venous stripping and comparison of radio-opacity between the femoral cortex and the corpora cavernosa especially the penile crura while the IIEF-5 follow was merely made via the Internet. A review of the literature on coil embolization was obtained using MEDLINE. Coils migration took place in 4 patients in which each 2 were found in pelvic and pulmonary area respectively and one patient disclosed dozens of coils in the periprostatic plexus, all had no improvement in impotence.
Postoperative cavernosography disclose
d radio-opacity of the penile crura was denser than that of the femoral cortex. However, the IIEF-5 score changed from 10.4±2.4 to 15.9±2.8, $p < 0.001$). One man required additional oral sildenafil and two men ended with a penile implant. Coil migration was not uncommon in the medical literature, which varied from 2.5% to 11.1%.The efficacy of penile venous embolization appears controversial, and its safety may not be sustainable although larger samples may be required.

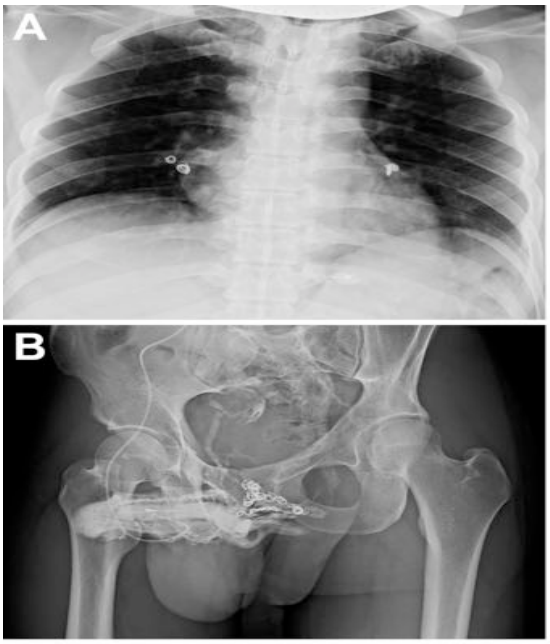


Figure 1: Imaging of patients who received prior penile venous embolization. (A) Several embolization coils are likely lodged in the pulmonary artery and further confirmed by contrast CT Scanning which disclosed one coil perforated cardiac right ventricle. In recent years, the patient was susceptible to hemoptysis. (B) A cavernosogram of another patient disclosed several dozens of coils lodged in the Santorini plexus.

Recent publications

1. Hsu GL, Chen HS, Hsieh CH, Lee WY, Chen KL and Chang CH (2010) Clinical Experience of a Refined Penile Venous Surgery Procedure for Patients with Erectile Dysfunction: Is It a Viable Option? Journal of Andrology 31:271-280.
2. Hsu GL, Chen HS, Hsieh CH, Lee WY, Chen KL and Chang CH (2010) Salvaging Penile Venous Stripping Surgery Journal of Andrology 31:250-260.
3. Hsieh CH, Liu SP, Hsu GL Chen HS, Molodysky E, Chen YH, Yu HJ (2012) Advances in our understanding of mammalian penile evolution, human penile anatomy and human erection physiology: Clinical implications for physicians and surgeons Medical Science Monitor 18:RA118-125.
4. Hsu GL, Hung YP, Tsai MH, Hsieh CH, Chen HS, Molodysky E, Huynh CC, and Yu HJ (2012). Penile veins are the principal component in erectile rigidity: a study of penile venous stripping on defrosted human cadavers, Journal of Andrology 33:1176-1185.
5. Hsu GL. "Physiological approach to penile venous stripping surgical procedure for patients with erectile dysfunction (Patent No.: US 8,240,313, B2). "http://www.google.com/patents/US20110271966.
6. Molodysky E , Liu SP, Hsu GL (2013). Penile vascular surgery for treatment of erectile dysfunction: Current role and future direction. Arab Journal Urology 11:254-266.
7. Hsu GL, Huang YP, Tsai MH, Chang HC, Liu SP, Molodysky E, Hsu MCY (2013) The venous drainage of the corpora cavernosa in the human penis, Arab Journal Urology 11:384-391.

8. Hsu GL**,** Molodysky E, Liu SP, Chang HC, Hsieh CH, Hsu CY (2013) Reconstructive surgery for idealizing penile shape and erectile functional restoration on patients with penile dysmorphology and erectile dysfunction. Arab Journal Urology 11：375–383.
9. Hsu GL, Hill JW, Chen HS, Huang SJ (2014) Novel pilot films providing a dispensable information in pharmaco-cavernosography. Translation Andrology and Urology 4:398-405.
10. Hsieh CH, Huang YP, Tsai MH, Chen HS, Huang PC, Lin CW, Hsu GL (2015) Tunical Outer Layer Plays an Essential Role in Penile veno-occlusive Mechanism Evidenced from Electrocautery Effects to the Corpora Cavernosa in Defrosted Human Cadavers Urology 86: 1129-1136.
11. Hsieh CH. Hsu GL(2016) Current Role of Vascular Surgery (Arterial and venous) in Erectile Dysfunction. In: International book of erectile dysfunction, 1st ed. Edited by Djordjevic, M. L. and Martins F. E. New York: Nova Publisher, chapt. 9, pp. 130-157.
12. Huang PC, Hsu GL (2018) Male Reproduction Tract: Vascular surgery for erectile dysfunction, Chapter 89, in Volume 4: Reproduction Medicine, Reproduction Encyclopedia, 2018.



Biography

Dr Chi Can Huynh graduated from Sydney University in 1999. During his senior years in Medical School he completed a surgical research term with Tom DeMeester at the University of Southern California. He was accepted into the Advanced General Surgical training scheme in 2003 and then onto the Advanced Urology Training Program in 2005. He was the inaugural Robotic Fellow at St Vincent's Prostate Cancer Centre in 2008. Following this, he spent 18 months in Manchester (United Kingdom) completing a laparoscopic prostate fellowship.

Dr Huynh has interests in erectile restorative surgery and robotic prostate surgery and was the first in Australia to perform a robotic assisted radical nephro-ureterectomy and penile erection restorative vein surgery. His research interests are in erectile dysfunction and is a part time fellow in

erectile restorative surgery overseas. He has co-authored papers in peer reviewed medical journals and presented at multiple international conferences on the topic. He also holds teaching positions with the Rural Medical School of the Australian National University and the Australian School of Advanced Medicine.

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