

# Detection of Venous Leakage Using CT Cavernography in Men with Erectile Dysfunction



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**Introduction:** Venous erectile dysfunction (ED) is defined as the inability to achieve or maintain rigid erection because of abnormal venous outflow from corpora cavernosa. Knowledge of exact pathways of the venous leak is crucial for choosing the adequate type of penile venous surgery. The aim of the study was to evaluate the CT cavernosograms and their possible contribution to the treatment of venous ED.

**Methods:** From January 2012 to June 2013 CT cavernography was performed in 16 men with a suspicion on venous ED. ED was primary in 9 men, secondary of unknown origin in 4 men, secondary after a pelvic trauma in 1 man, secondary after a pelvic surgery in 1 man and secondary from Peyronie's disease in 1 man. The average age of patients was 36 years (21 - 69 years). The average IIEF-5 was 7.6 (1-14). The average EHS was 2.6 (1-4). The testosterone level was normal in all patients. Based on Doppler ultrasound examination under intracavernous (IC) pharmacological stimulation of the erection we excluded arterial insufficiency (PSV over 35 cm/s) and suspected abnormal venous outflow (EDV over 6 cm/s). CT cavernography scan of pelvis and penis was performed after IC of contrast medium 10 to 15 min after the pharmacologically induced erection with Aprostadil 10ug. Venous drainage was analysed; deep and superficial veins (SVs) and caverno-spongious communications were indentified. We classified the drainage as deep (leak through the deep dorsal vein (DDV) and through aberrant veins from the crura penis), superficial (leak from the superficial penis veins to the external pudendal vein) or combined.

**Results:** Venous leak of contrast medium was observed in 15 patients. In 13 patients (86.7 %) DDV leakage was detected. Aberrant veins from crura penis were visible in 5 patients (33.3 %) and caverno-spongious communications in 5 patients (33.3 %). Results in tab. 1. Superficial drainage was detected in 9 patients (60 %). Combined deep and superficial drainage was observed in majority of patients (66.7 %). An exclusive drainage through SVs was visible only in 1 patient, through DDV only in 3 patients and through aberrant veins from crura penis only in 1 patient. Results in tab. 2. No significant correlation between the EHS score and the IIEF-5 score and the type of the drainage was found.



Fig. 1 – No drainage, normal finding

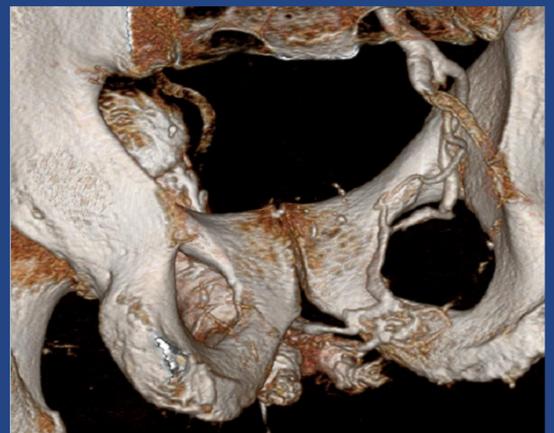


Fig. 2 – Deep drainage, DDV leakage and aberrant veins from crura

No drainage	Superficial drainage	Deep drainage	Combined drainage
1	1	4 (3x DDV, 1x crura)	10
	6.6 %	26.7 %	66.7 %

Tab. 1 - Pathways of leakage

DDV	Aberrant veins from crura	Caverno-spongious communications	SVs
13	5	5	9
86.7 %	33.3 %	33.3 %	60 %

Tab. 2 – Classification of leakage

## Conclusion:

In majority of our patients (66.7 %) we observed a combined deep and superficial drainage. The most common pathway of the drainage was through DDV (in 13 patients - 86.7 %)

CT cavernography allows an exact evaluation of the venous leak from the corpora cavernosa during erection and, as a result, choosing an individual therapeutic approach to each patient, which should increase the success in treatment of venous ED.

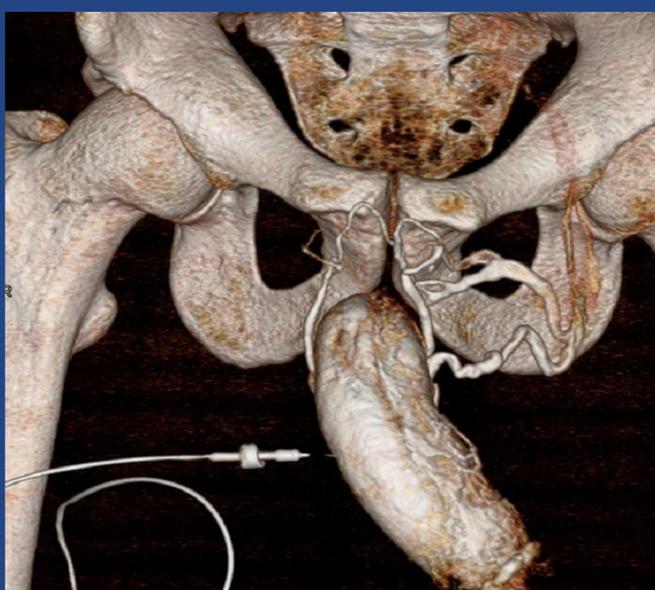


Fig. 3- Superficial drainage, SSv leakage



Fig. 4 – Combined drainage, SSv and DDV leakage, aberrant veins from crura



Fig. 5 - Combined drainage, incl. caverno-spongious communications