Novel pilot films providing indispensable information in pharmaco-cavernosography

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Abstract

Conventional pharmaco-cavernosograph y including CT-cavernosography provides little information on penile venous anatomy, although it is acceptable in documenting veno-occlusive erectile dysfunction (ED). We report an innovative method, which can exclusively provide penile venous anatomy for guiding penile venous stripping. From July 2010 to November 2017, 896 impotent men, aged 20 to 75 years, underwent this method of pharmaco-cavernosography in which two sets of 60 mL of 50% omnipaque solution were administered intracavernously. The first set of pilot cavernosograms was taken at intervals of five, ten, twenty and thirty seconds after the commencement of the injection. The second set of cavernosograms was taken in the same intervals within 30 minutes following the pilot set, preceded by the injection of 20 μg prostaglandin E1 (PGE1). For comparison, the pilot cavernosograms were routinely performed immediately postoperative on the patient undergoing penile venous stripping.

An analysis was conducted on the drainage veins including deep dorsal vein (DDV), cavernosal veins (CVs) and para-arterial veins (PAVs) accordingly. The veins demonstrated in the pilot cavernosograms, and the second set was compared in terms of venous numbers and presentation percentage. A radio-opacity of the penile crura and that of the femoral cortex was made. There was a statistically significant difference ($P<0.001$) between the total number of independent venous drainage channels and the presentation percentage of DDV, CVs and PAVs observed in the pilot cavernosograms, and those in second set (4.5 *vs*. 2.1; 97.48%, 60.35%, and 38.93% *vs*. 57.08%, 29.37%, and 19.07%, respectively). A stronger radio-opacity of the penile crura is unexceptional noted. Compared with conventional pharmaco-cavernosograph y methods, pilot cavernosograms are readily able to show detailed penile venous anatomy which is indispensable for guiding venous stripping surgery. It is, therefore, may be concluded that pilot cavernosograms are an exclusively

valuable addition to conventional protocols of pharmaco-cavernosography and CT-cavernosography.



Figure 1: Dual Pharmaco-cavernosography. (A) An anterior-posterior view was first used for the first set of our dual cavernosography. The complex distribution of the erection related veins was characteristic. Note at least 7 significant veins drained sinusoidal blood away from the corpora cavernosa. (B). A 30-degree right oblique position was then used to see the lateral view of the erection related veins. (C). A pharmacocavernosogram showed a veno-occlusive dysfunction (VOD) despite the rigid erection exist 15 minutes after artificially induced erection by intracavernous prostaglandin E1.

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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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