

Dissection steps for cadaveric penile disassembly

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Urogenital anatomy is the basis for medical student and surgeon training alike. A critical part of the andrology surgeon's understanding of the genitourinary apparatus and morphology comes from cadaveric dissection. Anatomical dissection provides an unparalleled practical knowledge of penile structures. Human penile disassembly was first described by S.V. Perovic [1], who specialized in correcting complex penile deformities consequent to Peyronie's disease, but the technique can be extended to organ reconstruction for a variety of penile diseases [2]. The steps involved in cadaveric penile dissection and disassembly are described below.

Recommended equipment:

- Dissection scalpel
- Dissection scissors
- Super-light titanium needle holder
- Vicryl™ 4/0 (polyglactin 910) suture for the circumferential subcoronal incision.

Procedure: The penis is degloved through a circumferential subcoronal incision: dissection involves the relatively avascular plane between Buck's fascia and dartos fascia. The urethra is dissected off the tunica albuginea by two longitudinal paraurethral incisions of Buck's fascia, one on each side of the urethra (Figure 1), in the avascular plane above the tunica albuginea of the corpora cavernosa, enabling the urethra to be literally

lifted off the corpora cavernosa. Care is taken to remain in the plane between the corpus spongiosum and the corpus cavernosum, because on the ventral aspect of the corpus cavernosum the tunica albuginea is made up of only two layers and is extremely thin. The urethra is completely dissected off the corpora cavernosa down to its bulbous portion, to maximize tissue length and elasticity (Figure 2). Next Buck's fascia, containing the dorsal neurovascular bundle, is dissected and mobilized dorsally off the tunica albuginea by combined sharp and blunt dissection. At this time communication between the cavernosal and dorsal arteries, which may lead to postoperative arteriogenic erectile dysfunction, must be excluded because it is a contraindication for total penile disassembly. Buck's fascia is dissected off the corpora cavernosa from the penile root to the groove of the glans; the deep dorsal vein runs longitudinally in the middle of the neurovascular bundle with a dorsal artery and a dorsal nerve on each side. Complete dissection of the urethra and Buck's fascia off the corpora cavernosa is shown on slings for demonstration purposes in Figure 3. Blunt dissection of the glans penis off the tips of the corpora cavernosa with scissors is then performed, carefully avoiding injury to the tunica albuginea, leaving any spongy tissue on the corpora cavernosa, or damaging the dorsal penile arteries that reach the glans lateral to the deep dorsal vein. After complete dissection of the glans, Buck's fascia and urethra, the corporal tips are completely denuded (Figure 4) and penis disassembly is complete (Figure 5).

Re-assembly is always performed for ethical reasons. It involves replacing the glans cap on the tip of the corpora cavernosa with a 4/0 polyglactin 910 mattress suture; repositioning Buck's fascia and the urethra respectively on the dorsal and ventral aspect of the corpora cavernosa, and closing the two paraurethral incisions of Buck's fascia with a running 4/0 polyglactin 910 suture, to prevent postoperative mobilization and hematoma formation. Skin re-approximation along the subcoronal circumferential incision with interrupted 4/0 sutures completes the re-assembly.

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Figure 1: Carla Loreto, Giulio Garaffa, Rados Dijnovic, Guido Barbagli, Massimo Villa, Salvatore Sansalone "Penile disassembly: anatomical surgical steps" BJU Int 2013; 112(7): 1035-45, p.1036. Copyright [2013 BJU International]. "This material is reproduced with permission of John Wiley & Sons, Inc."

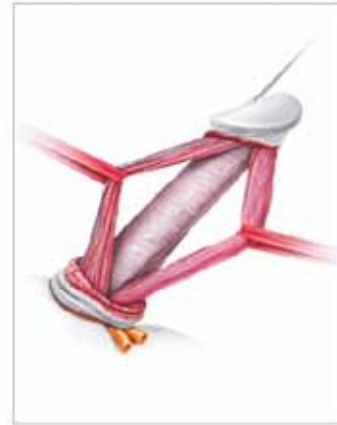


Figure 3: Carla Loreto, Giulio Garaffa, Rados Dijnovic, Guido Barbagli, Massimo Villa, Salvatore Sansalone "Penile disassembly: anatomical surgical steps" BJU Int 2013; 112(7): 1035-45, p. 1040. Copyright [2013 BJU International]. "This material is reproduced with permission of John Wiley & Sons, Inc."



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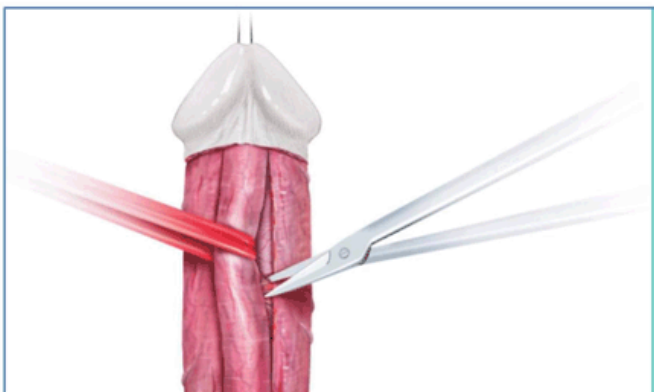


Figure 2: Carla Loreto, Giulio Garaffa, Rados Dijnovic, Guido Barbagli, Massimo Villa, Salvatore Sansalone "Penile disassembly: anatomical surgical steps" BJU Int 2013; 112(7): 1035-45, p.1037 Copyright [2013 BJU International]. "This material is reproduced with permission of John Wiley & Sons, Inc."



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Loreto C. – Substantial contributions to conception and design, Acquisition of data, Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Sansalone S. – Analysis and interpretation of data, Drafting the article, Revising it critically for important intellectual content, Final approval of the version to be published

Guarantor

The corresponding author is the guarantor of submission.

Conflict of Interest

Authors declare no conflict of interest.

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