BJUI BJU INTERNATIONAL

Surgery Illustrated – Surgical Atlas
Female robotic radical cystectomy

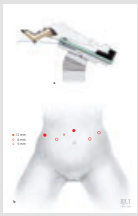
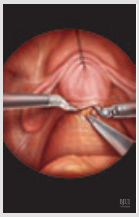
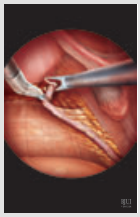
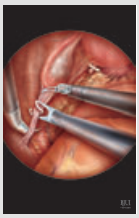
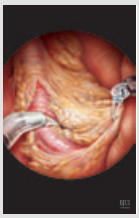
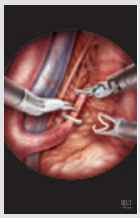
Alexandre Mottrie, Nicolo Buffi*, Giovanni Lughezzani*, Geert Denaeyer, Peter Schatteman, Paul Carpentier and Etienne Fonteyne

*Departments of Urology, Onze-Lieve-Vrouw Ziekenhuis, Aalst, Belgium, and *Vita-Salute University San Raffaele Turro, Milan, Italy*

ILLUSTRATIONS by STEPHAN SPITZER www.spitzer-illustration.com

PROCEDURE

The entire procedure is performed using a DaVinci-S HD System (Intuitive Surgical, Mountain View, CA, USA).

JOURNAL COMPILATION © 2009 BJU INTERNATIONAL | 104, 1024–1035 | doi:10.1111/j.1464-410X.2009.08877.x

Figure 1

Under general anaesthesia, the patient is placed supine with a nasogastric tube and Foley urethral catheter in place. Subsequently, the ports are placed [1].

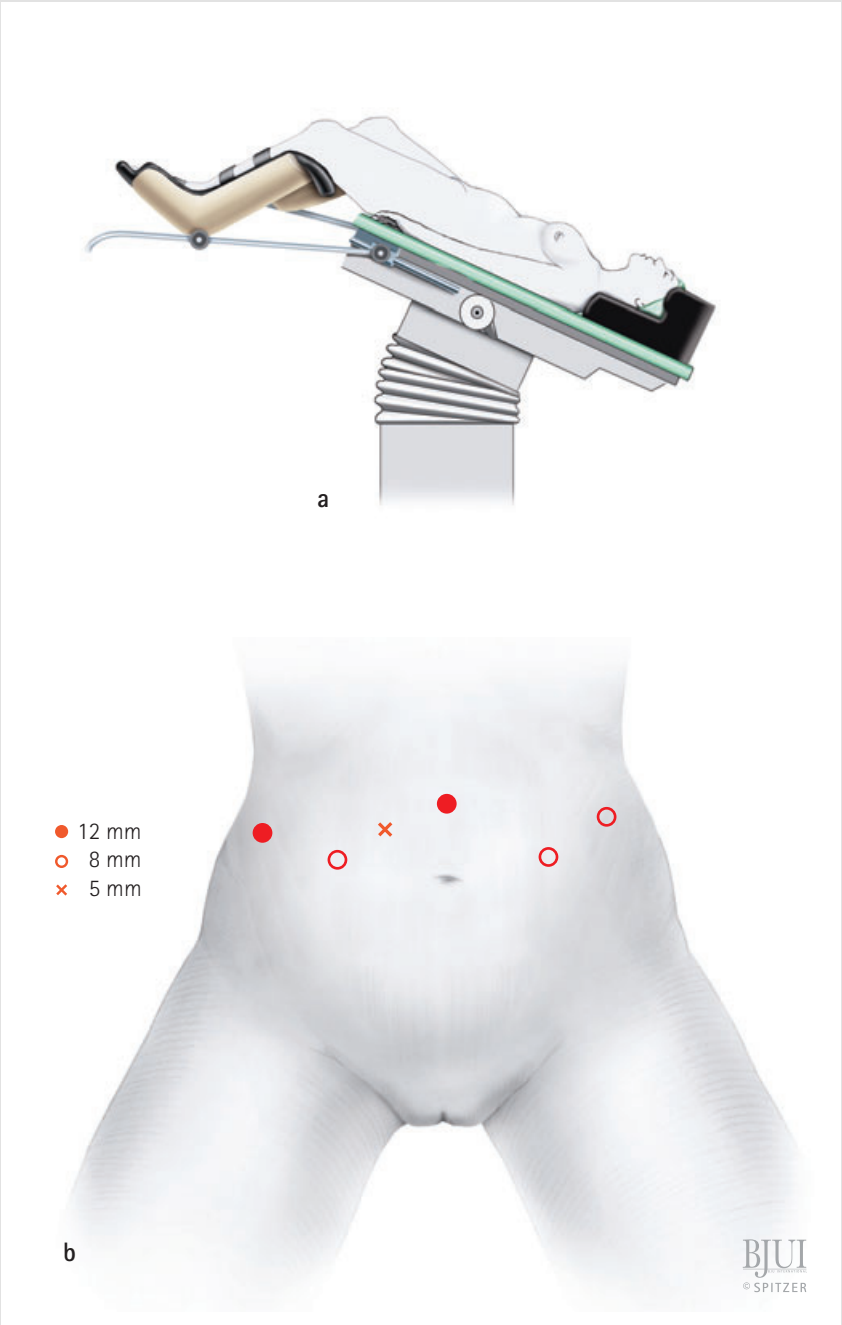


Figure 2

OPENING OF THE DOUGLAS POUCH

First, a transfixing suture with a straight needle is brought through the abdominal wall and placed through the corpus of the uterus, to lift the uterus up and fix it to the abdominal wall. This allows good access to the Douglas pouch. The Douglas pouch is now opened just under the junction of the uterus and the posterior vaginal wall.

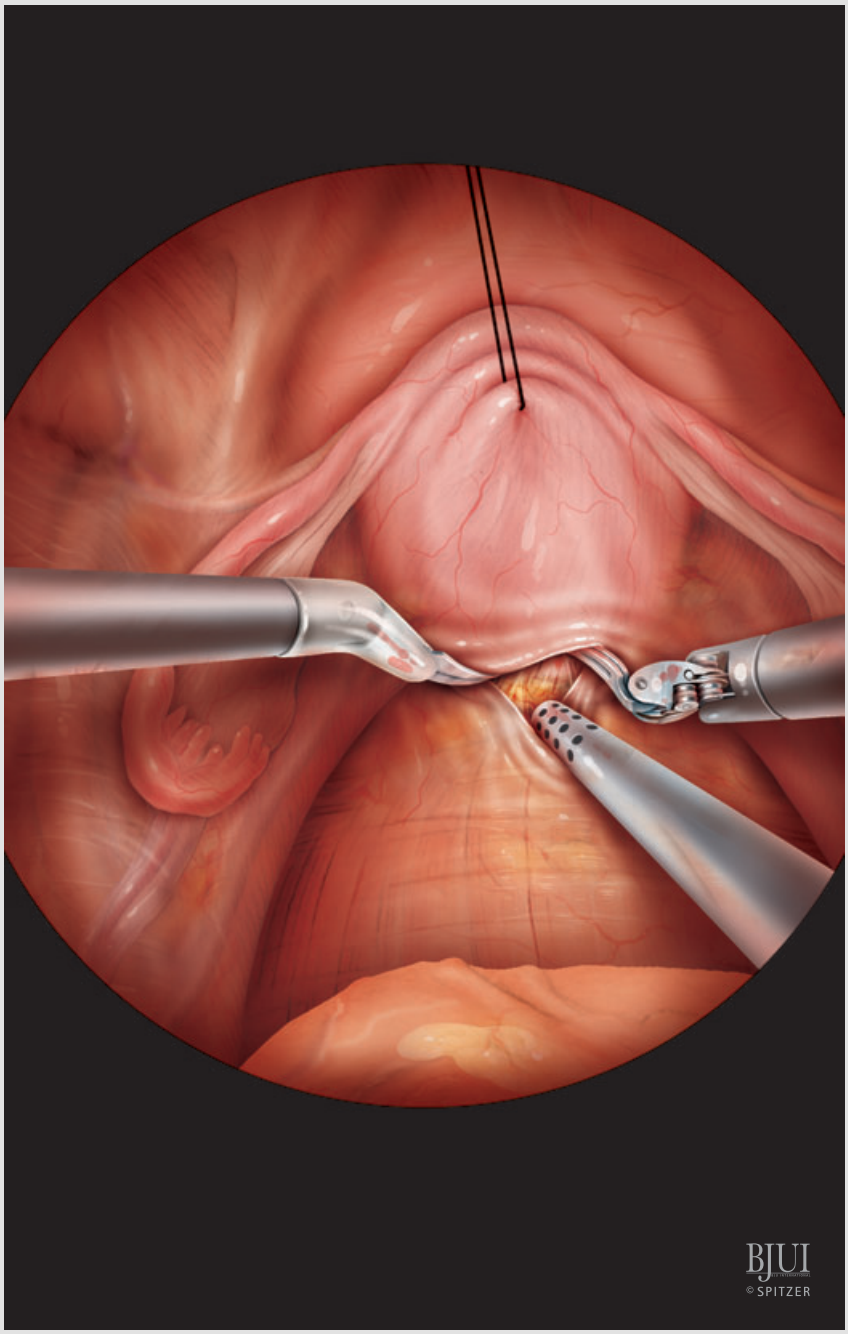


Figure 3

ISOLATE THE URETERS

The ureters are frequently identified at their crossing over the iliac vessels. The goal is to first mobilize the ureters from above the crossing of the iliac vessels up to the level of the bladder, then to ligate and transect them close to the bladder. The ureters are ligated using a Hem-o-lok™ clip (Weck Closure Systems, Research Triangle Park, USA) and transected. The ends are sent for frozen-section analysis. The ureter is dissected proximally as far as possible without disturbing its vasculature. The ureters are tucked into the upper quadrants, away from the pelvic dissection.

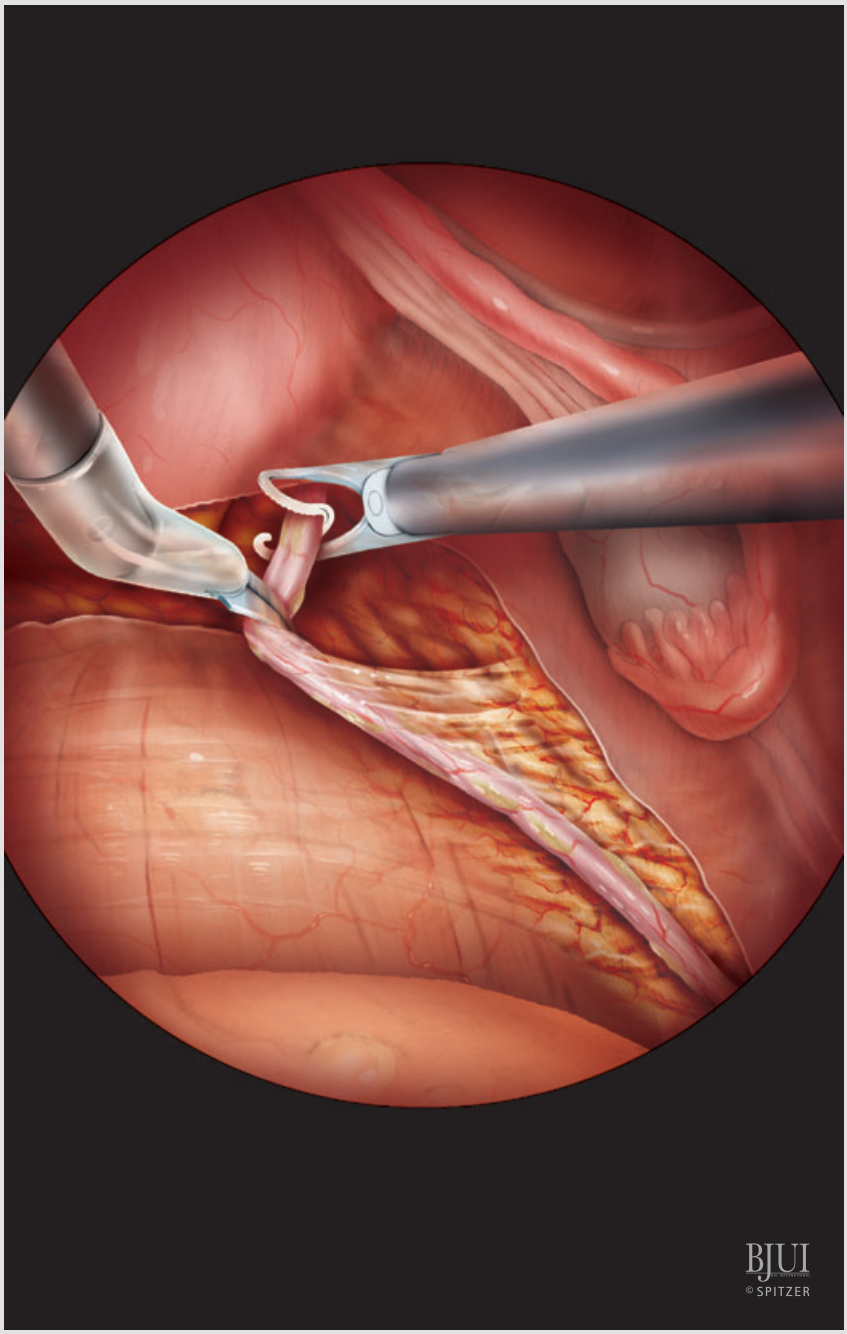


Figure 4

DIVISION OF THE OVARIAN PEDICLES AND DISSECTION OF UTERINE SUPPORT

The ovarian pedicles are identified and divided between clips. The cardinal and uterosacral ligaments should be divided bilaterally. The ovaries are dissected laterally away from the pelvic wall.

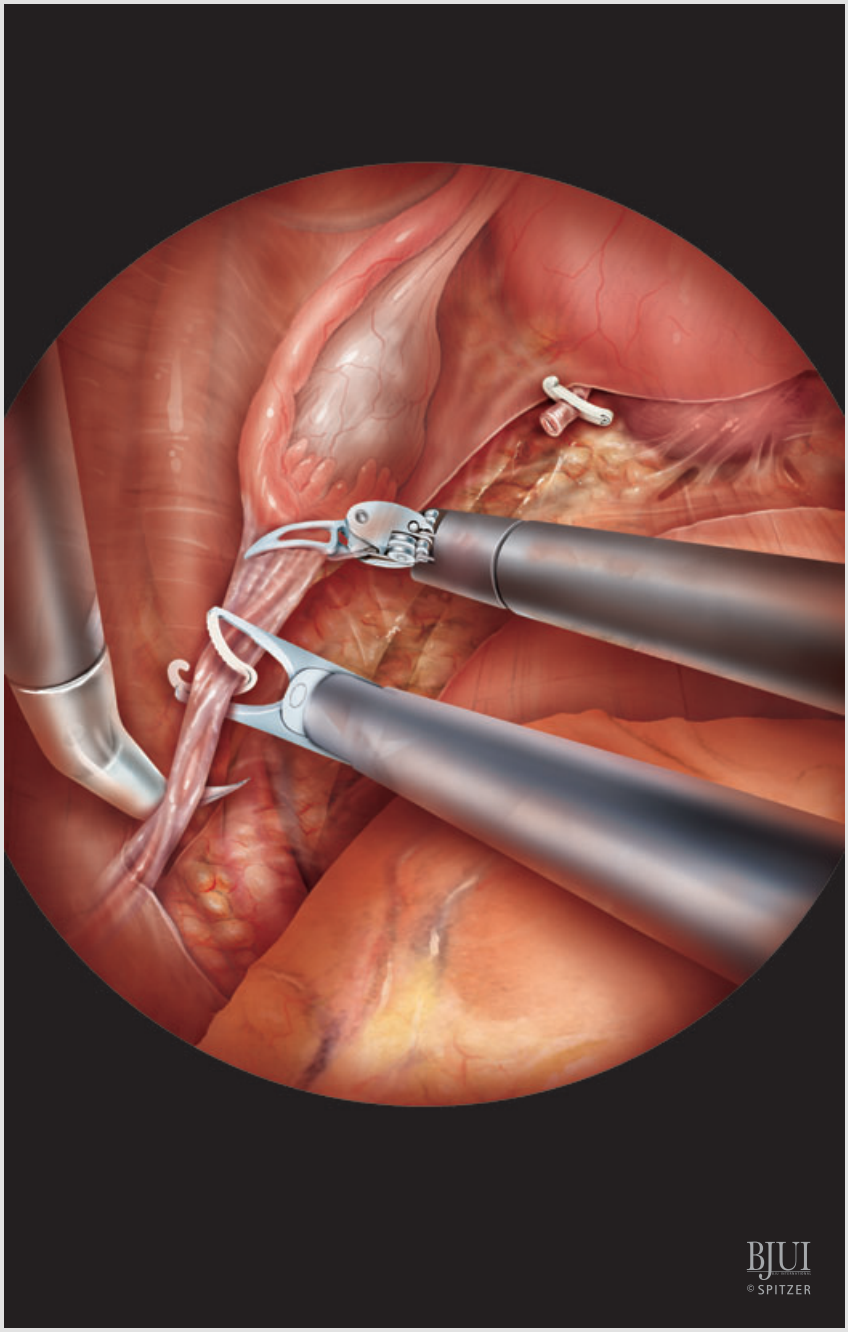


Figure 5

Extended lymphadenectomy (see chapter: Male Cystoprostatectomy)

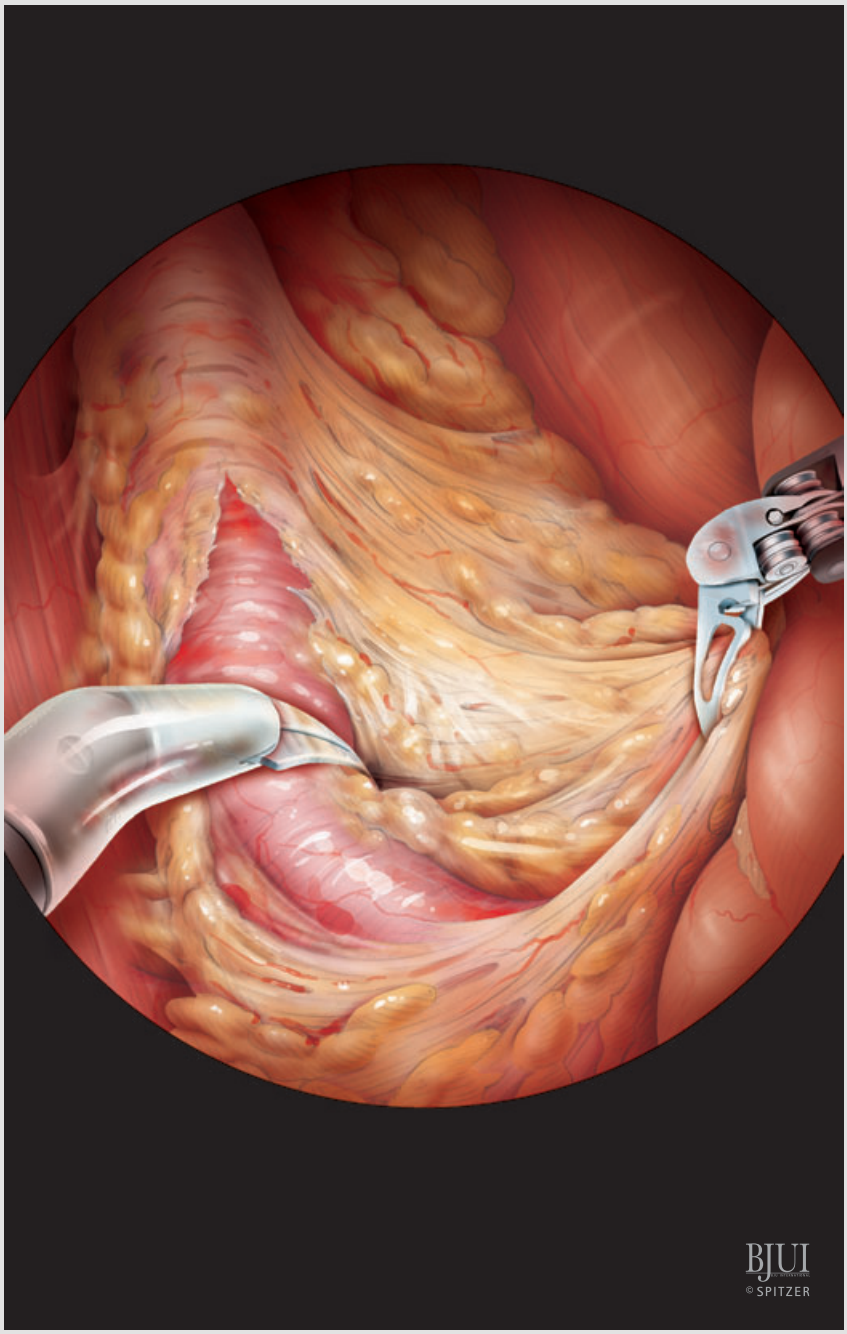


Figure 6

SECURE THE BLADDER PEDICLES

An Endowrist robotic radiofrequency device (Gyrus Medical, Cardiff, UK) is used to coagulate the vascular pedicles of the bladder. Only the major vessels require clipping. The bladder pedicles are identified and isolated. The internal iliac arteries are followed downwards. The umbilical artery is secured with a clip at its origin and cut. Further distally, the upper vesical artery is encountered, clipped and cut. The dissection is continued until the endopelvic fascia is reached.

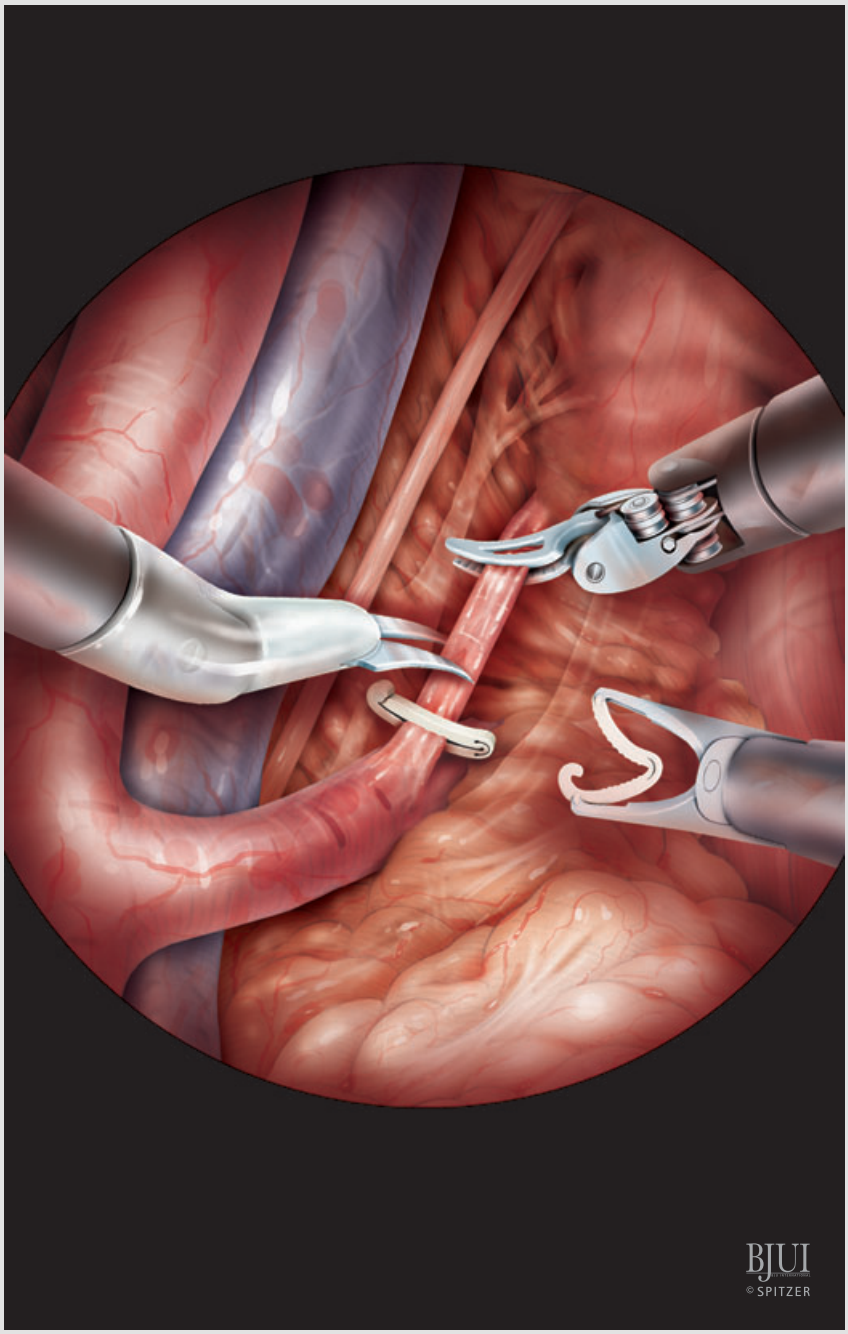


Figure 7

VAGINAL DISSECTION

Visually identify the posterior junction of the vagina and the uterus. A transverse incision opens the junction until the uterine manipulator or sponge stick is visible within the vagina.

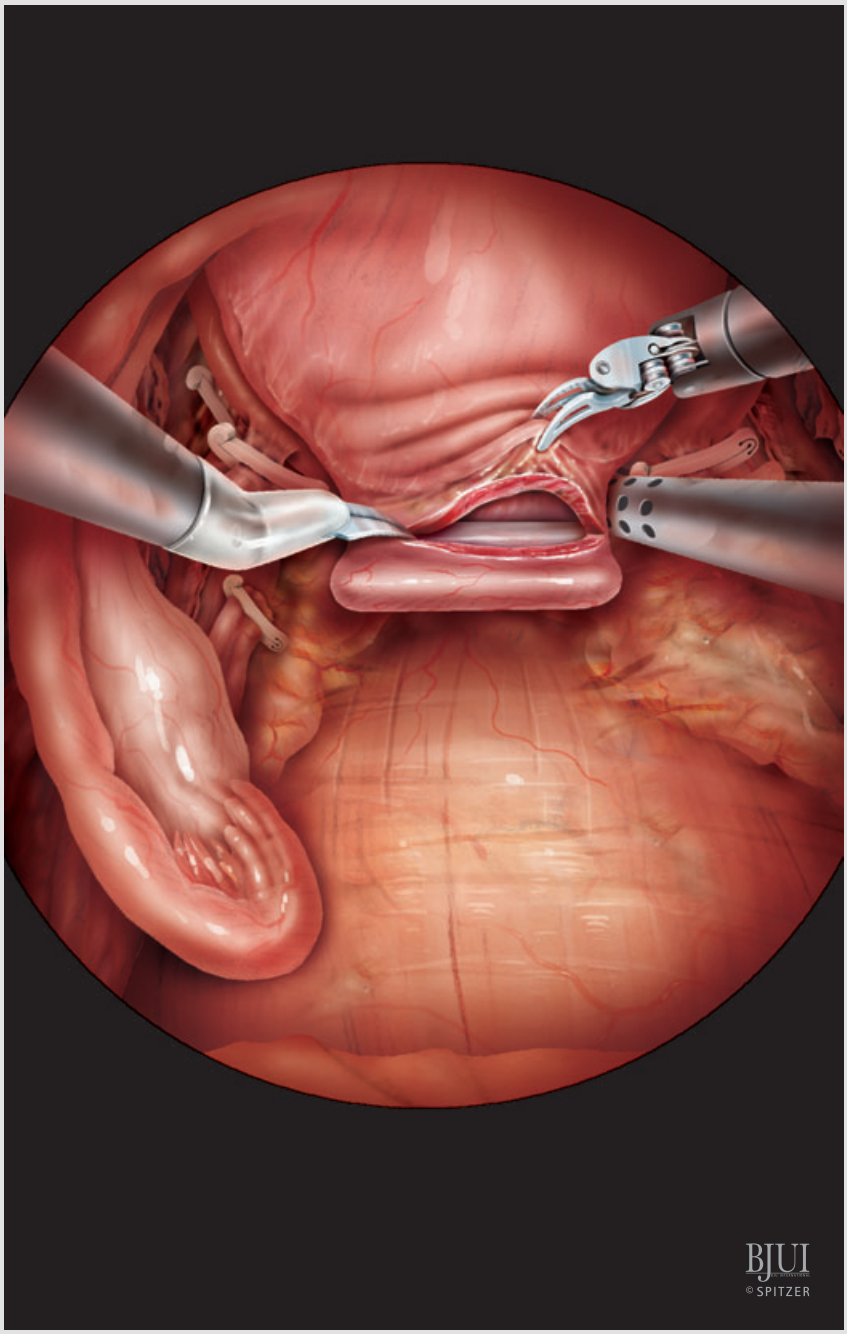


Figure 8

The vaginal incision is carried laterally past the urethra to ensure that a strip of the anterior vaginal wall is removed en bloc with the bladder. The anterior blood supply to the bladder and cervix of the uterus is secured with the Endowrist robotic Gyrus radiofrequency device. To avoid air loss through the vagina, it can be filled with wet sponges or alternatively with a glove filled with air.

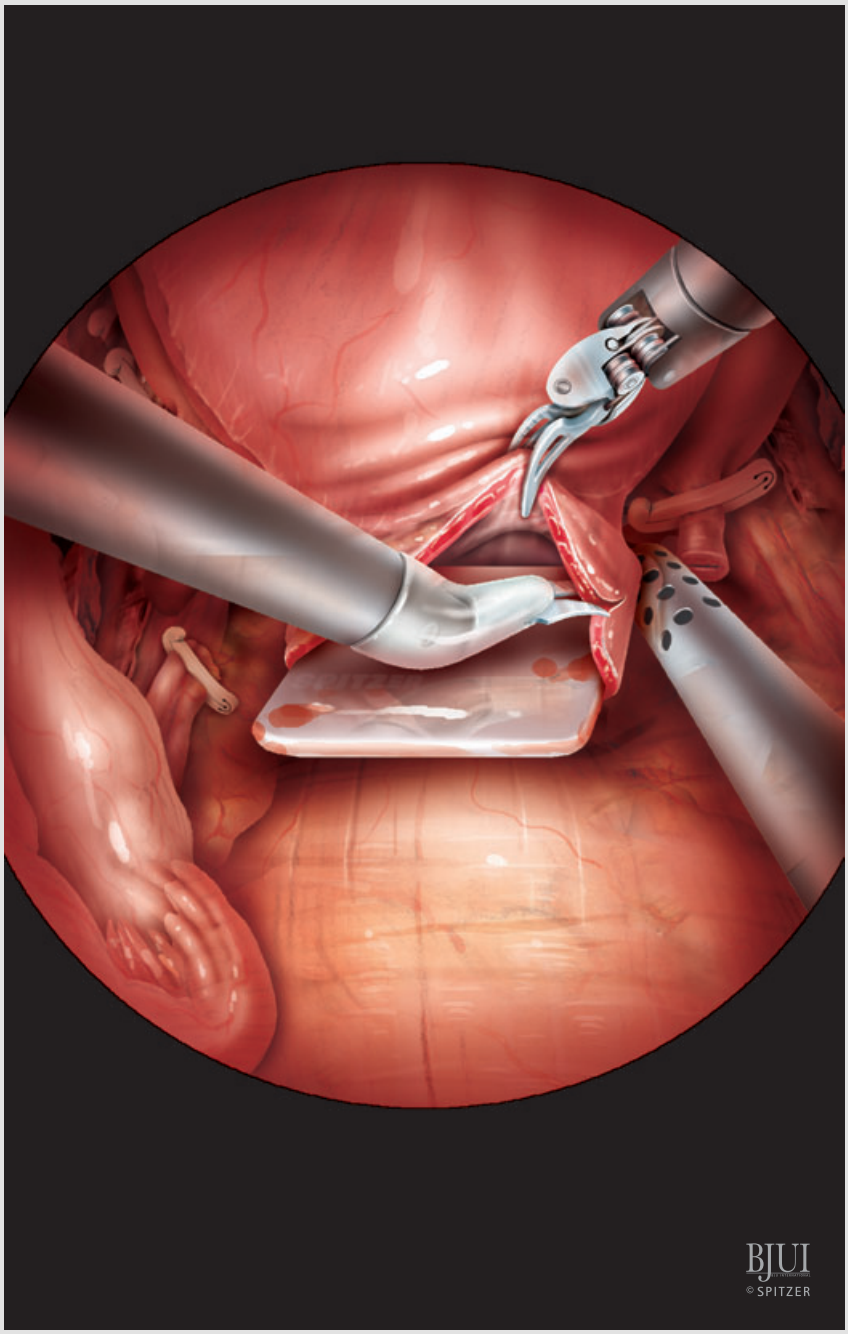


Figure 9

ANTERIOR DISSECTION

The aim of this dissection is to drop the bladder posteriorly, to access the space of Retzius. The transfixing suture through the uterus is cut, the peritoneum is incised anteriorly through the medial umbilical ligaments and the urachus, just below the umbilicus, and the bladder is dropped.

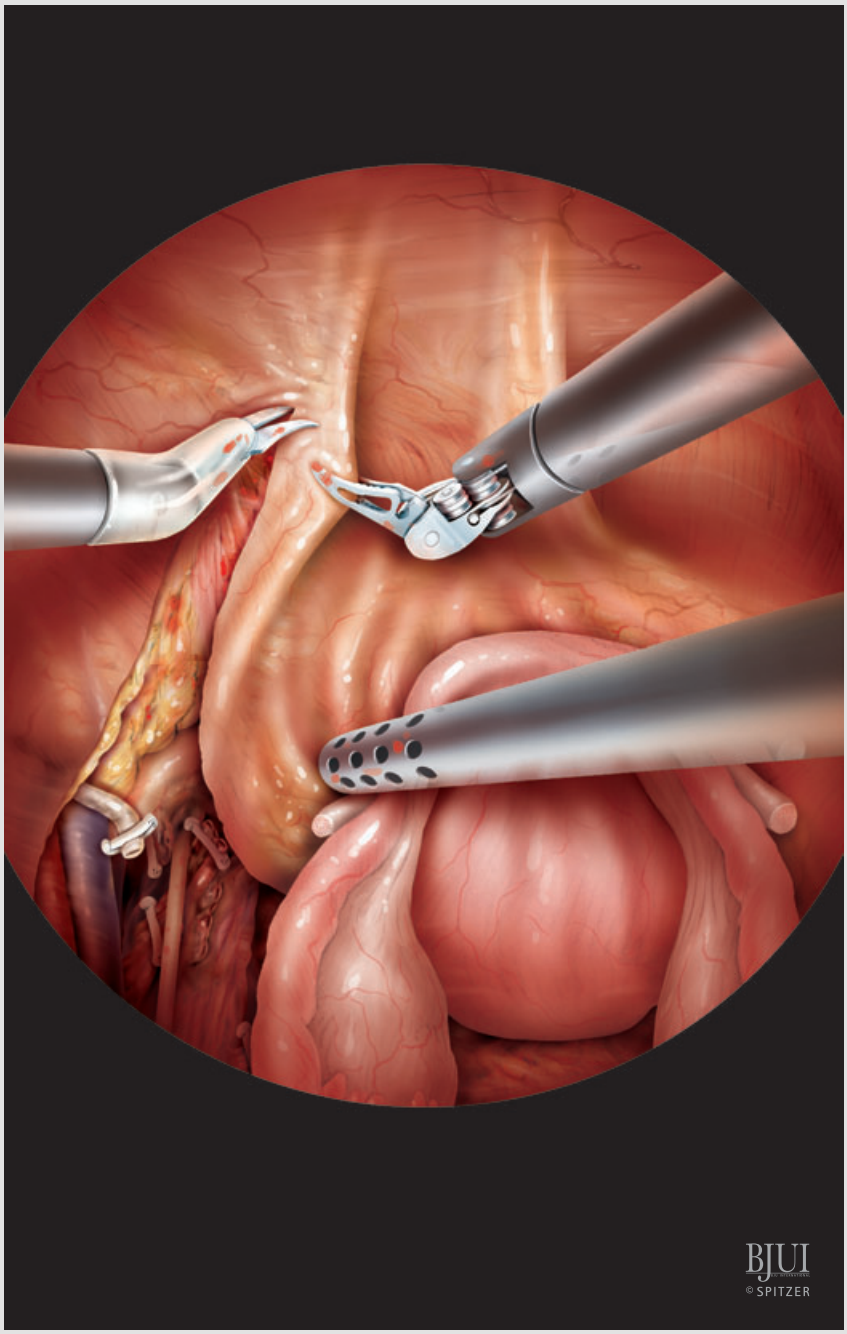


Figure 10

The dorsal vein complex (DVC) is incised cold. To avoid venous bleeding, the intra-abdominal pressure is brought to 20 mmHg and the assistant is forbidden to aspirate. During incision of the DVC, two arteries are mostly encountered that are secured with monopolar coagulation. The anterior contour of the bladder is followed until the urethra is reached. The urethra is resected en bloc with the bladder. The anterior part of the vagina stays attached to the specimen and is resected distal to the meatus. The DVC is now secured with a running suture of poliglecaprone 2/0 and the intra-abdominal pressure is lowered again.

The specimen is put in a large Endocatch bag coming from the opening in the vagina. The bag is closed and pulled through the vagina.

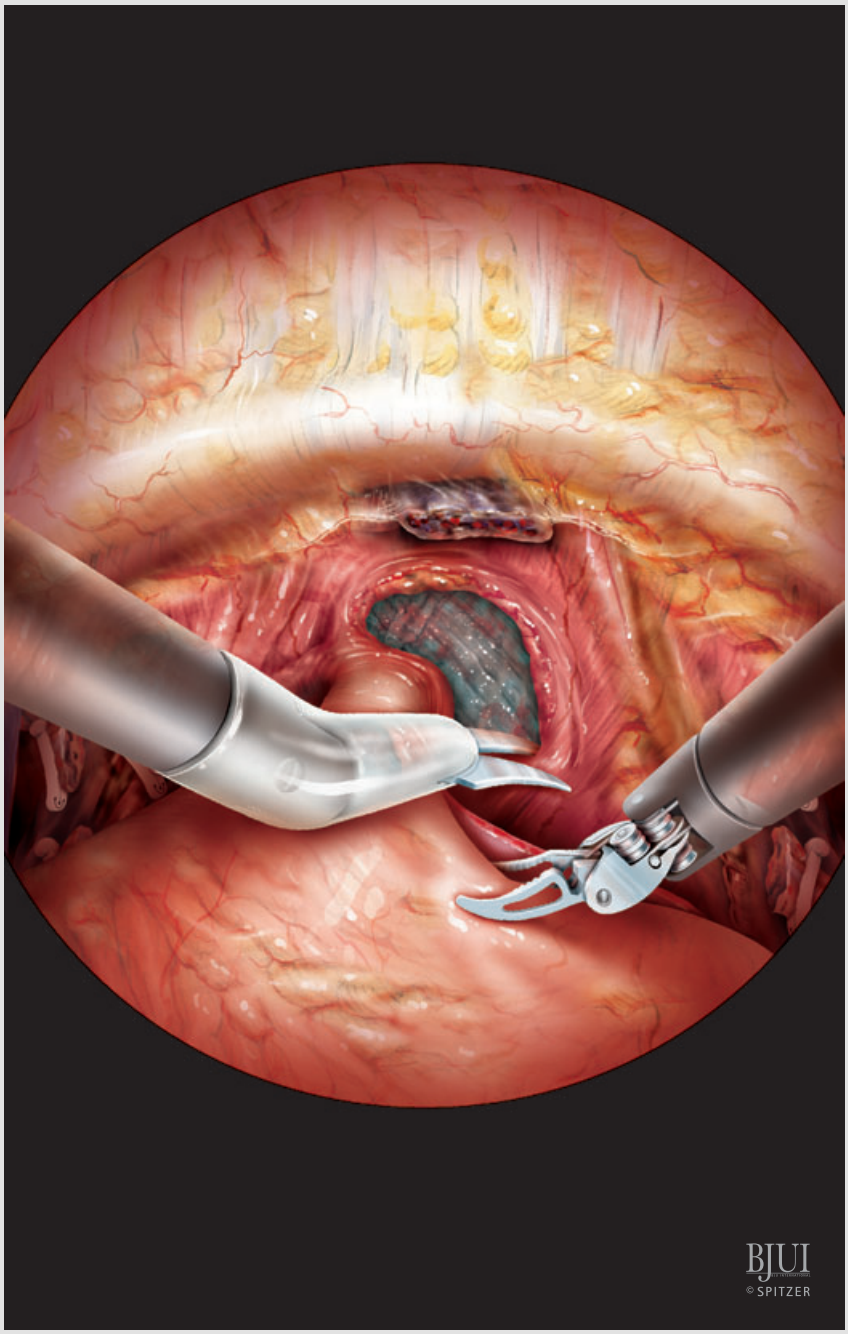
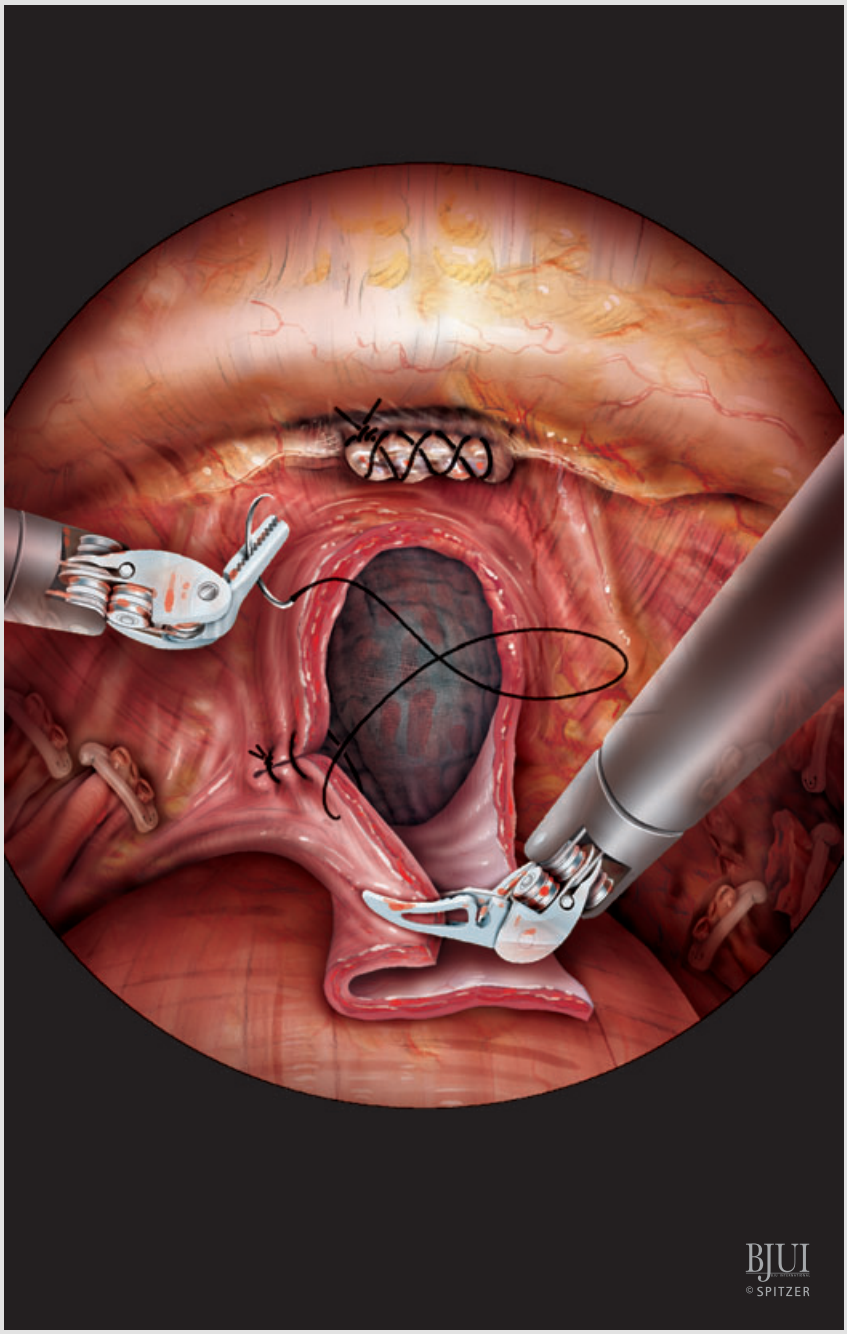


Figure 11

RECONSTRUCTION OF THE VAGINA

The vagina is reconstructed using a running suture of polyglactin 2/0. The posterior lip of the vagina is mobilized and used to close the anterior defect.



REFERENCE

1 **Buffi N, Mottrie A, Lughezzani G *et al.*** Robotic radical cystectomy in the male. *BJU Int* 2009; **104**: 726–45

Correspondence: Alexandre Mottrie, Department of Urology, Onze-Lieve-Vrouw Ziekenhuis, Aalst, Belgium,
e-mail: Alex.Mottrie@olvz-aalst.be