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Urologic clinical cases Cios Alpha

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Urology clinical cases with Cios Alpha

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Case 1:
Cystography follow-up control, 15 days after radical prostatectomy

Case 2:
Bilateral nephrostomies for urine drainage

Case 3:
Bilateral Double J (DJ) stent insertion to prepare radical gastrointestinal surgery

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Case 1

Cystography follow-up control, 15 days after radical prostatectomy

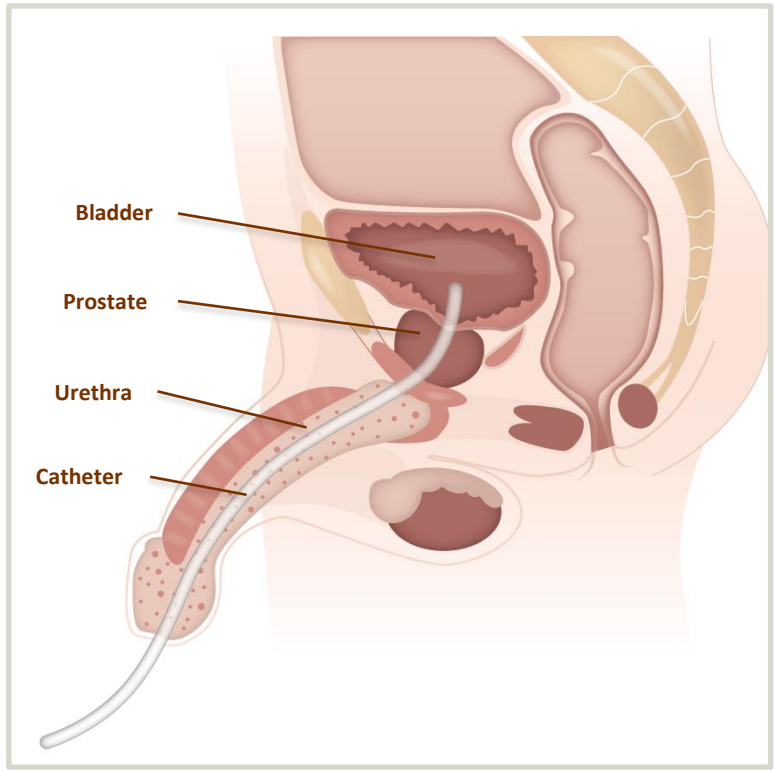
General procedure description

Cystography

- Visualize the urinary bladder under X-ray and evaluate volume, morphology, leak tightness, and functionality

- During the procedure, the bladder is filled through a catheter with contrast medium, and then voided

- Consists of up to four exposures of the bladder:
  - before contrast medium is inserted
  - filled with contrast medium, a.p.
  - filled with contrast medium, lateral
  - after contrast medium is voided



Case description

Condition	Radical prostatectomy – the complete removal of the prostate – is the surgical state-of-the-art treatment for prostate cancer. The procedure implies a surgical anastomosis of urethra and bladder. Cystography as a follow-up control checks for tightness or potential leakage of the anastomosis. A leak requires further treatment in order to prevent scarring and inflammation.
Patient (Gender, Age, Size, Weight)	Male, 64 years, 170 cm, 88 kg
Key procedure steps	Take exposures of the bladder in a.p. and lateral projection before and after filling with contrast medium. Assess the leak tightness of the anastomosis. Magnification for precise depiction of the leakage.
Outcome	A small leak, located right dorsal, was detected. Due to the small size of the leak, the urine catheter was removed and no further treatment was required.

Key procedure steps during the case

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Prepare the contrast medium and position the FD

Take fluoroscopy scene of the filling phase

View the resulting fluoro sequences and X-ray images

Clinical case images

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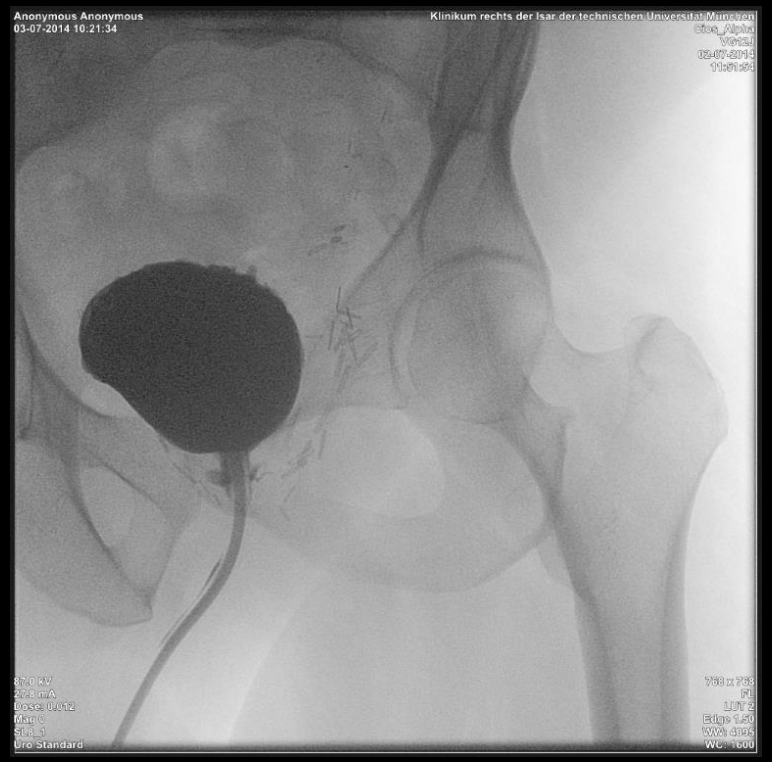
Bladder filled with contrast medium a.p. projection

Bladder filled with contrast medium, lateral projection, depicting a small leak, right dorsal



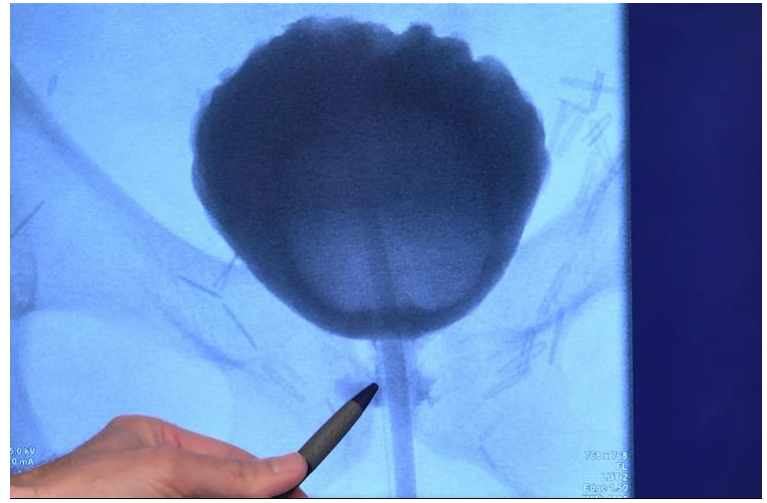
Magnification with focus on the anastomosis

Case-related system highlights

Motorized single-touch positioning* between a.p. and lateral projection – precise and fast

Magnification of the X-ray image at the push of a button, for a better view of the anatomical detail

Brilliant image quality provided by the flat detector technology and the Retina Imaging Chain of Cios Alpha



*option

*„I was very happy with the image quality in this case, the system provided good contrast between the bladder and the surrounding tissue. I was able to detect a minimal leakage of the bladder outlet.”**

Michael Straub, MD

Managing Senior Physician
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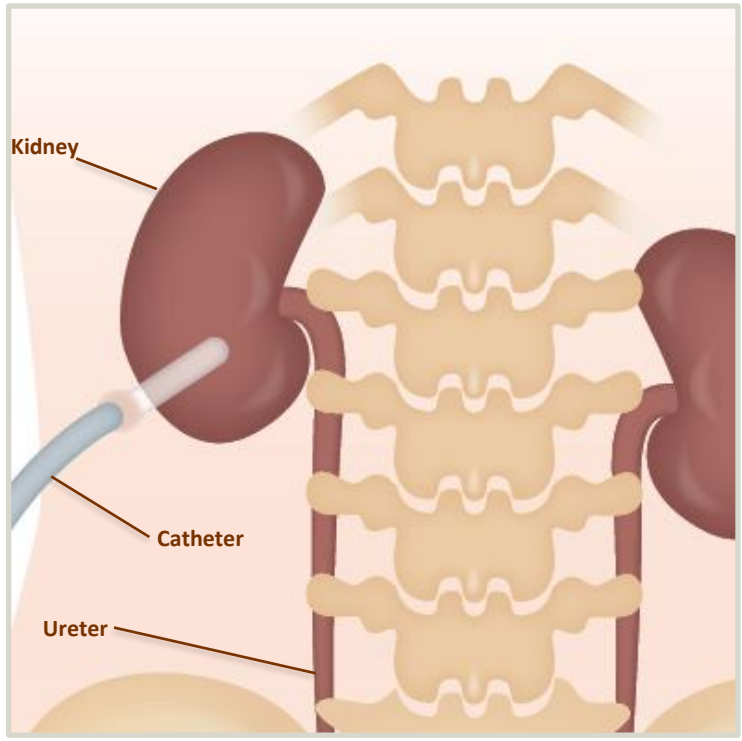
Case 2

Bilateral nephrostomies for urine drainage

General procedure description

Percutaneous nephrostomy

- Placement of a catheter percutaneously into the renal pelvis for urinary drainage
- A nephrostomy is necessary if an obstruction blocks the flow of urine from the kidney to the bladder
- During the procedure an antegrade pyelography is used to control the correct position of the tube

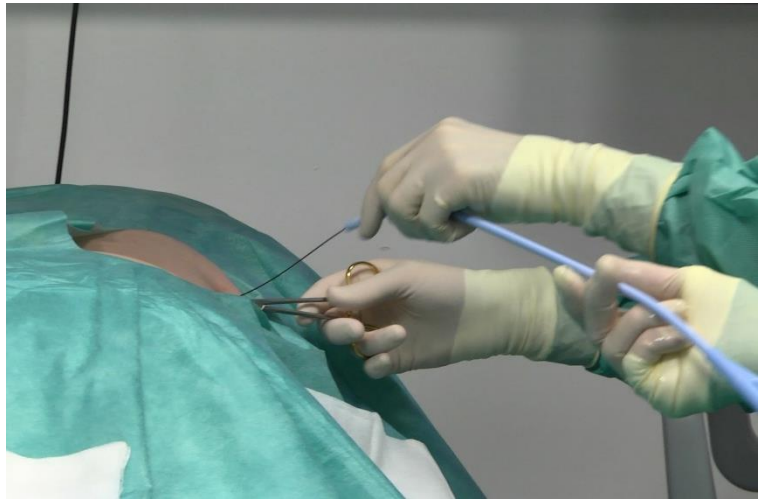


Case description

Condition	Prostate cancer can lead to ureter obstructions and subsequently blocked urinary flow. Nephrostomy tubes ensure urine drainage and preserve kidney function. Usually nephrostomy tubes must be exchanged every 4-6 weeks.
Patient (Gender, Age, Size, Weight)	Male, 74 years, 175 cm, 75 kg
Key procedure steps	Replacement of nephrostomy tubes under local anesthesia and in Seldinger technique. Check for correct positioning of the tubes in the renal pelvis with contrast medium and fluoroscopy. Connection of the nephrostomy tubes to an external urinary bag.
Outcome	Bilateral nephrostomy tubes were successfully exchanged. Side effect: small extravasation caused by the stiff guide wire.

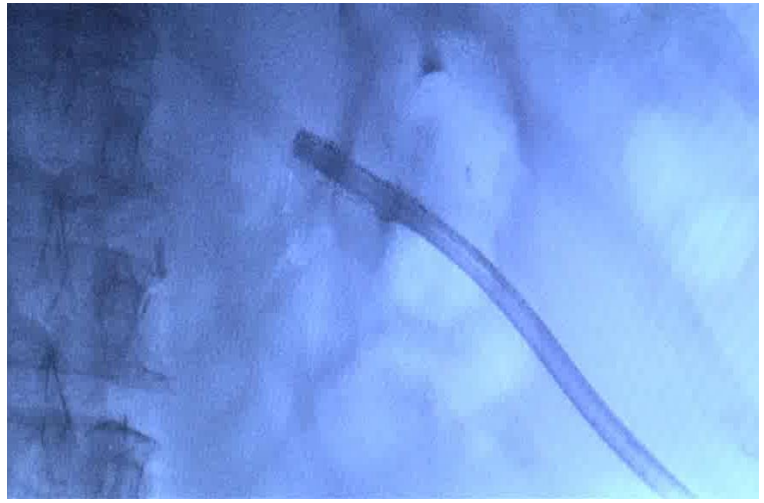
Key procedure steps during the case

Place the nephrostomy tube over a guide wire into the kidney



Insert contrast medium through the nephrostomy tube for position control

Control the placement and filling of the nephrostomy tube via antegrade pyelography



Clinical case images

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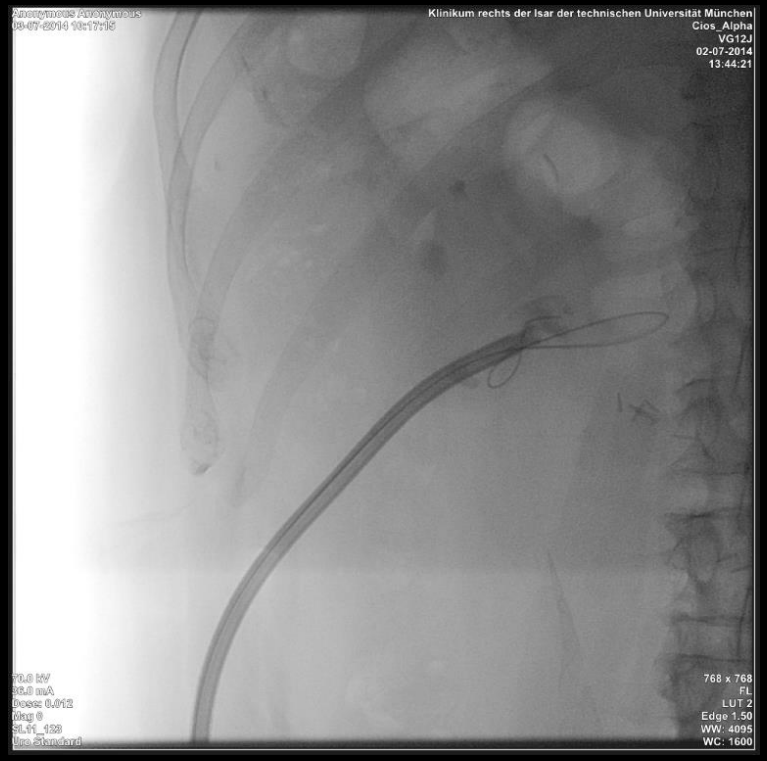
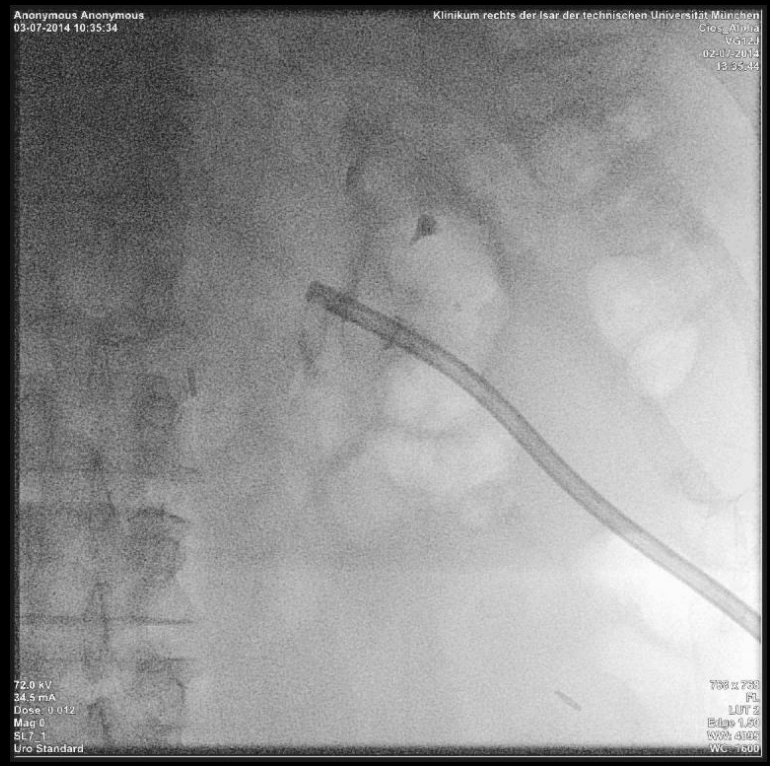
First step of Seldinger technique: positioning the guide wire



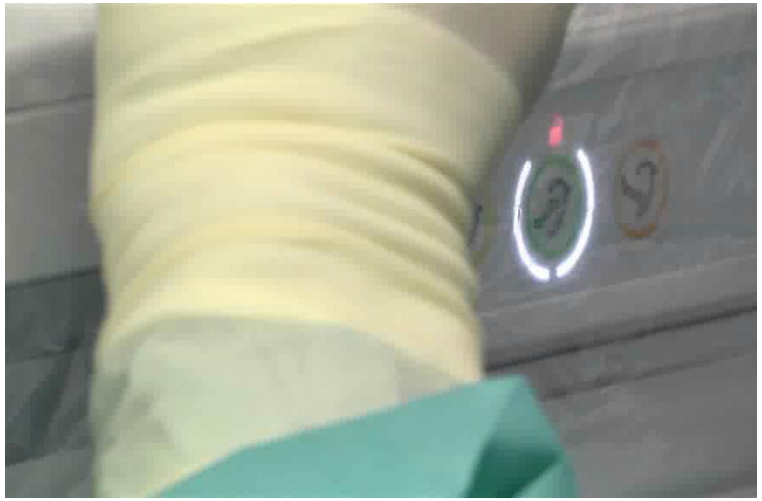
Antegrade pyelography of the left kidney. Finding: nephrostomy tube correctly placed, small extravasation caused by the stiff guide wire

Antegrade pyelography of the right kidney

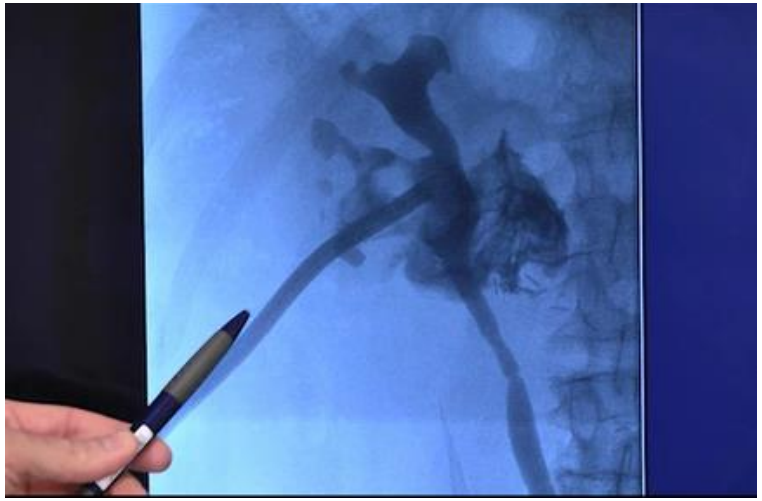


Case-related system highlights

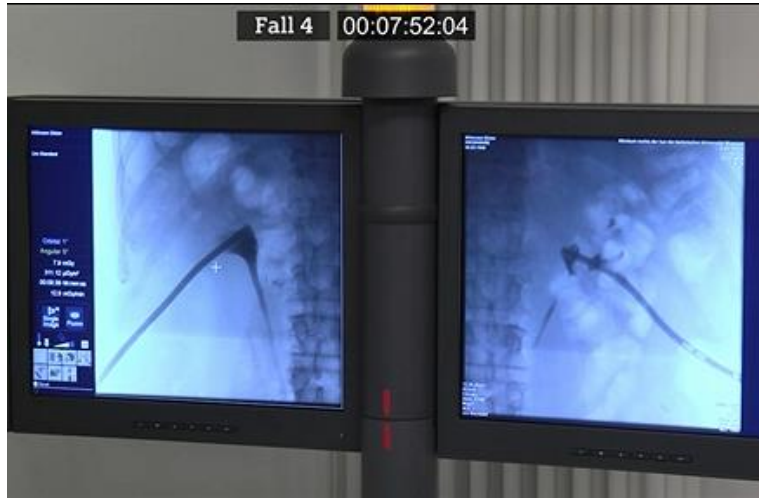
The FD mounted brake controls allow for simple and convenient operation of the C-arm in the sterile field; here to change from one kidney to the other



Flat detector technology and Retina Imaging Chain for brilliant image quality; here to view very fine differentiated imaging of the renal collecting system and the extravasation behind the renal pelvis



Side-by-side viewing for comparison of the left and the right kidney



*„The patient needed bilateral nephrostomy tube exchanges. Normally this requires repositioning of the patient during the case including additional efforts for the urologist and his team. With Cios Alpha I moved the C-arm within seconds very conveniently from the left to the right kidney without moving the patient nor leaving my sterile position.” **

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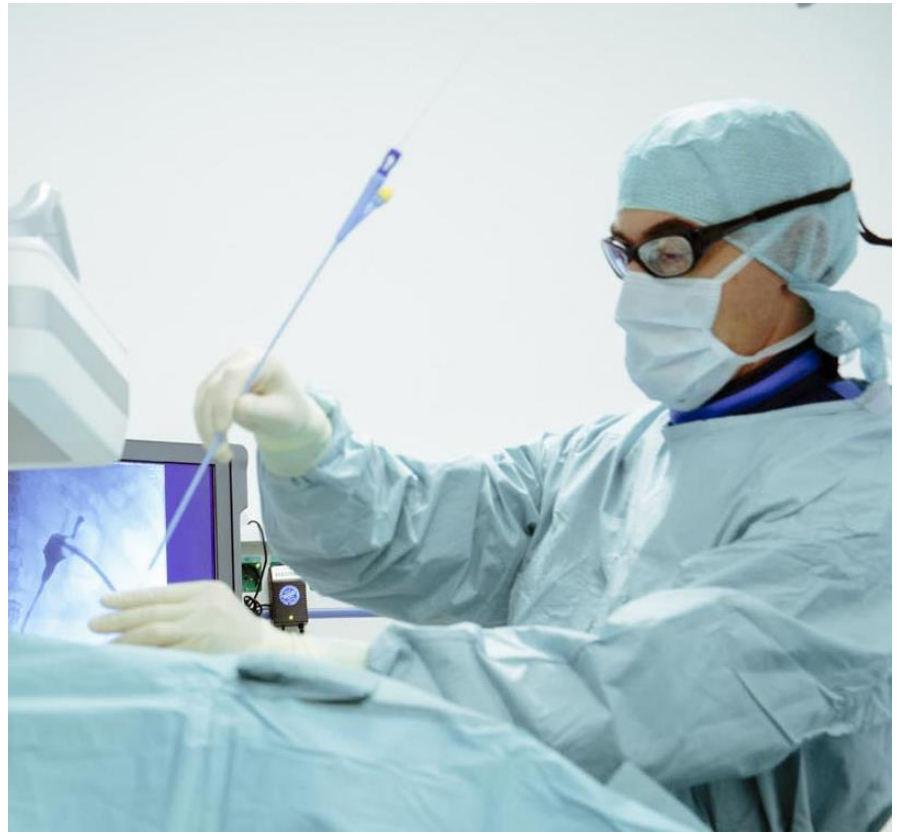

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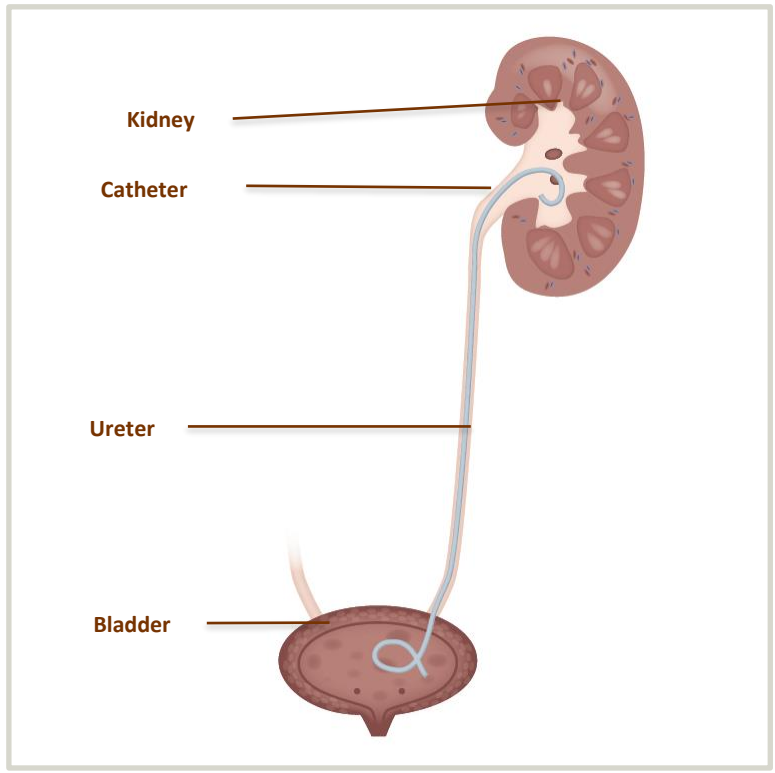
Case 3

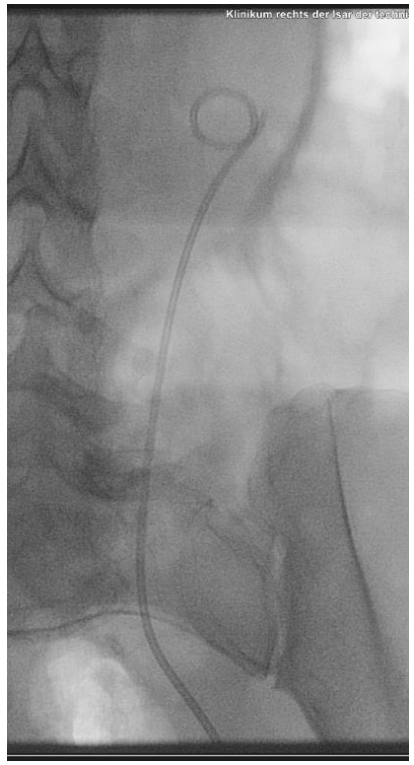
Bilateral Double J (DJ) stent insertion to prepare radical gastrointestinal surgery

General procedure description

DJ stent insertion

- DJ stents are placed between the renal pelvis and the bladder
- Before major surgery, DJ stents are inserted to prevent inadvertent injury and to maintain urine flow in the ureter
- The special shape (double-J) of the catheter ends prevents the catheter from dislocating



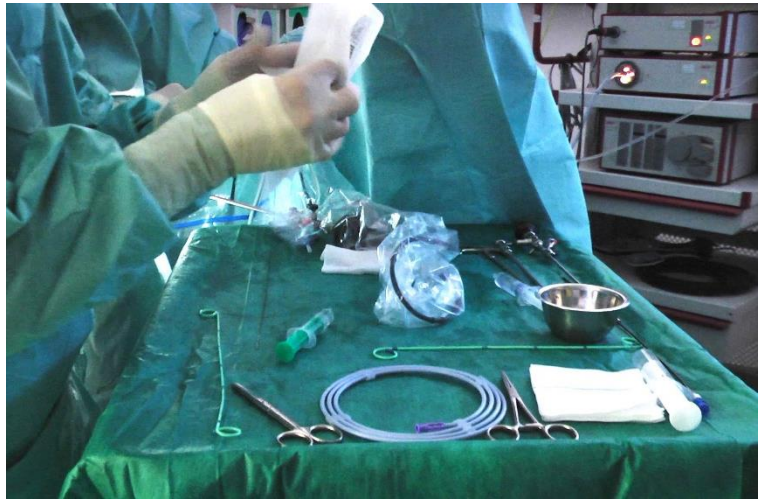


Case description

Condition	A large colorectal tumor requires open surgery. DJ stents are inserted on both sides as a safety measure in preparation for gastrointestinal surgery.
Patient (Gender, Age, Size, Weight)	Female, 70 years, 165 cm, 68 kg
Key procedure steps	Insertion of DJ stents under endoscopic and fluoroscopic control. Verification and documentation of proper placement of the DJ stent in the kidney and bladder region.
Outcome	Bilateral DJ stents are successfully inserted and the patient is prepared for the upcoming surgical intervention.

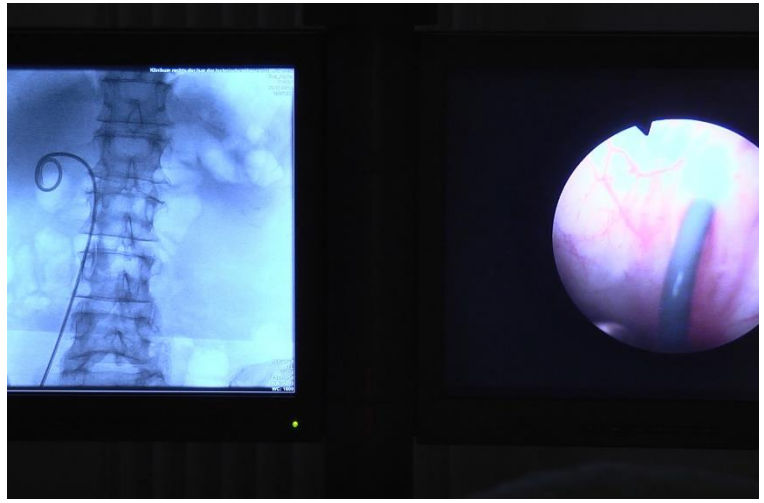
Key procedure steps during the case

Prepare the DJ stent on the sterile OR table



Insert the DJ stent in Seldinger technique through the endoscope into the urinary tract

Place the DJ stent under fluoroscopic and endoscopic view



Clinical case images

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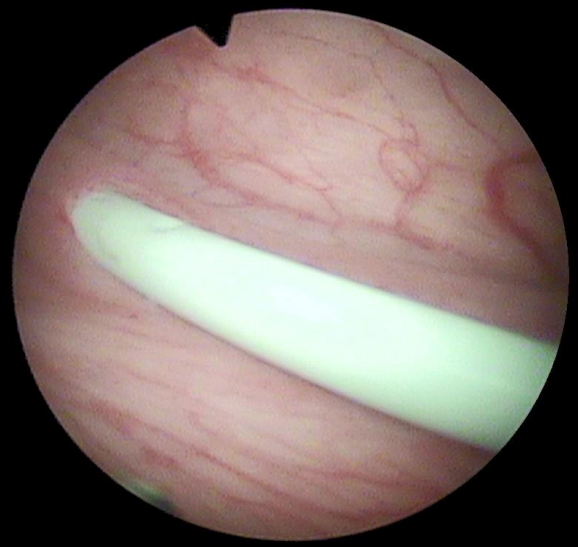
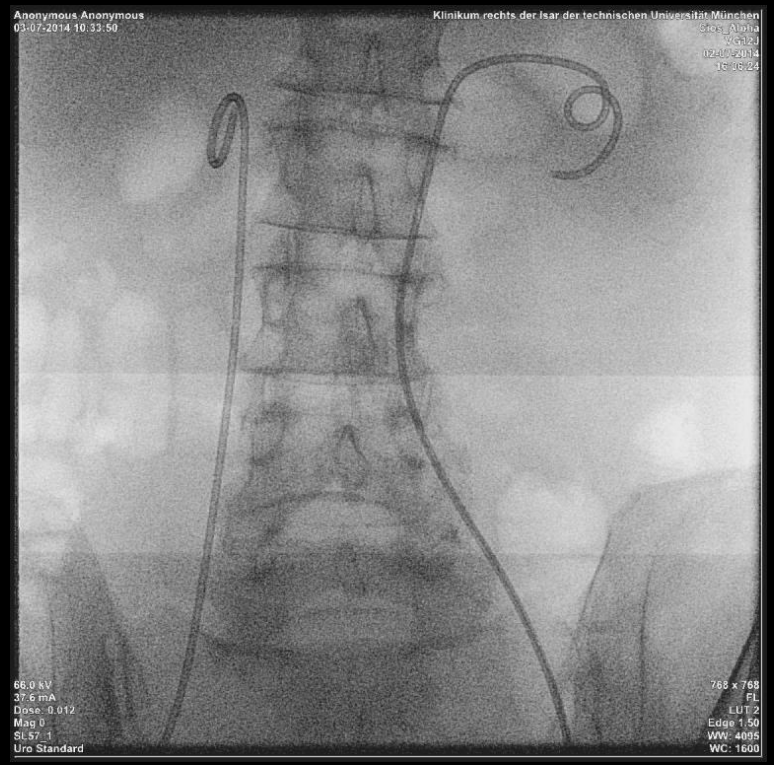
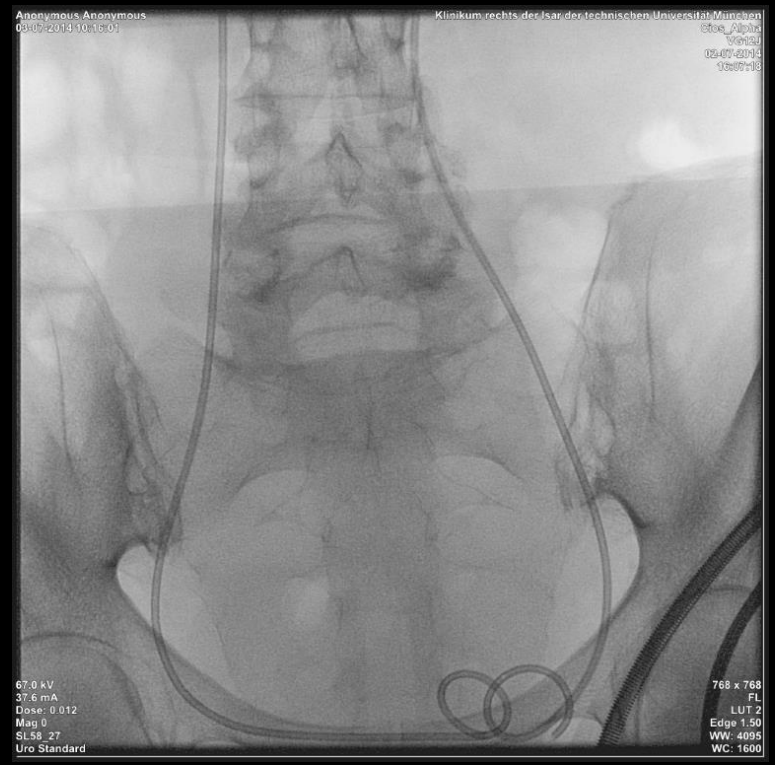
Endoscopy image of the DJ stent passing the right orifice of the bladder



Fluoroloop documentation of the placement of 2nd DJ stent



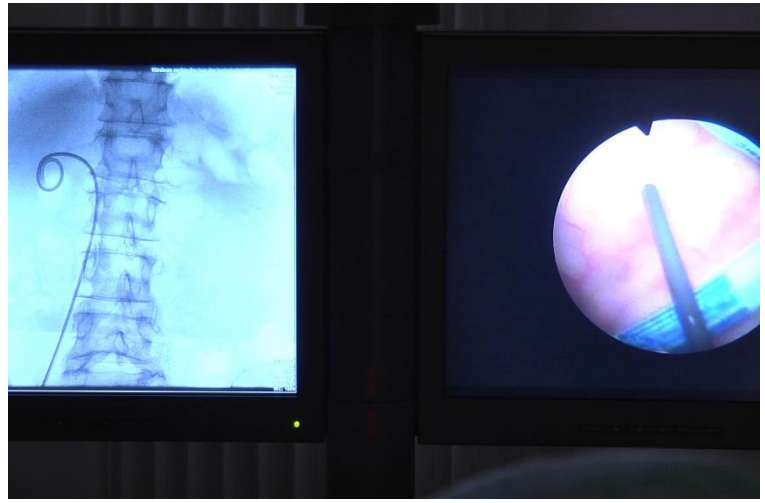
Placement in the bladder



Case-related system highlights

Imaging of the complete urinary tract thanks to the large 30 cm x 30 cm flat detector

SmartView provides comfortable side-by-side viewing of X-ray and endoscopic images



With HD EndoStore, images from all modalities can be stored in one patient folder for complete case documentation

*„For an endourologist it is very important to have the fluoroscopic and endoscopic images in the same view. I have to work with both imaging modalities simultaneously for stent placement. This is a big step towards efficient work in the OR.” **

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*„ After 15 years of experience in endourology I worked with many different C-arms. In my opinion Cios Alpha is very comfortable with respect to image quality and flexibility in movements in the OR. It offers all possibilities that I need in modern endourology.” **

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Disclaimer

Cios Alpha is not commercially available in all countries. Due to regulatory reasons its future availability cannot be guaranteed. Please contact your local Siemens organization for further details.

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Thank you
for your enthusiasm!

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