



Black-Star® - magnetic DJ removal

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Introductions and Objectives

Ureteral stenting is a common procedure in endourology. One routine indication is after ureteroscopic stone extraction if small urothelial lesions occurred. The cystoscopic removal of a ureteral stent can cause unpleasant side effects, such as urinary frequency, urgency, incontinence, haematuria, bladder pain and flank pain, which have a negative impact on a patient's life. It is necessary to minimize the pain during stent removal in order to increase the patient's quality of life. Therefore we prospectively assessed the feasibility of a newly developed ureter stent (DJ) with a small magnet at its distal end (Magnetic Black Star, Urotech (Achenmühle, Germany) and a customized magnetic retrieval catheter.

Methods

The magnetic Blackstar DJ is a 7 french ureteral stent with a small magnet fixed with a string at the distal DJ loop. To remove the DJ a customized catheter with a magnetic Tiemann tip is used. The catheter is inserted after transurethral application of a standard lubricant and removed with the DJ after getting in contact with the DJ's magnet. The study was approved by local ethics committee. We placed the magnetic DJ in 20 consecutive patients after ureteroscopy for stone removal. No additional foley catheter was placed. The DJ was removed the next day with the magnetic retrieval catheter either by a physician or a nurse. Retrieval time, patient comfort and feasibility of the retrieval device were assessed.

Results

The DJ could be removed with the retrieval device within less than 30 seconds in 19 out of 20 patients. In the first patient the removal was not successful due to an enlarged prostate middle lobe. For this patient a cystoscopical removal was needed. In the second patient the removal was performed under fluoroscopic control to ensure safe handling of the retrieval device by the

surgeon. In all other patients the removal of the catheter was performed in the patients room on the ward.

Conclusions

The removal of the magnetic DJ using the retrieval device is fast and easy and can be performed by physicians as well as nurses. The patients didn't complain about a lot of discomfort during the removal. This technique might lead to significant cost reduction compared to the standard cystoscopical removal of ureter stents with sterile instruments in the endourological operation room. Our feasibility study indicates this magnetic DJ to significantly reduce patient's discomfort by DJ removal and therefore seems to be a promising new device for endourologists.

Authors

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