

# Robotic reconstruction of necrosed ileal ureter: Technical challenges, intra-operative difficulty, and learning points

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## ABSTRACT

This video explores the challenges faced during a re-do robotic intra-corporeal ileal ureter reconstruction in a previously operated case. A 24-year-old woman presented with a 12-cm long stricture after robotic ileal ureter replacement surgery. A proper preoperative evaluation in the form of ureteroscopy and a nephrostogram is essential and the key steps include adhesiolysis, identification of the necrotic ileal ureter, and meticulous dissection. A 13-cm long segment of the ileum was isolated and was anastomosed to the renal pelvis and the bladder. The surgery lasted for 420 min with 300 ml of blood loss. Post-operatively, the patient recovered well and had a normal drainage with no complications at 1-year of follow-up. The factors such as a broad mesentery, a tension-free anastomosis, and avoiding the twisting of the pedicle are crucial for success of robotic ileal ureter replacement surgery.

## OBJECTIVE

To explore the possible technical challenges that arise during the robotic reconstruction in a previously operated case of ileal ureter replacement and to identify the learning points that can help overcome these challenges. Ureteral stricture can result from a variety of causes, and the management differs according to the length and the site of the stricture.<sup>[1]</sup> In a previously operated case of ileal ureter, a redo-reconstructive surgery is challenging and open surgery is usually preferred.<sup>[2]</sup> We hereby present a video of robot-assisted laparoscopic redo intra-corporeal ileal ureter replacement as a feasible option for such complex reconstructions.

## METHODS

A 24-year-old female presented with left flank pain and underwent robotic ileal ureter replacement for a strictured left ureter (due to retained basket after ureteroscopic lithotripsy) 5 months back. Percutaneous nephrostogram, retrograde pyelogram, and ureteroscopy revealed a 12-cm long stricture of the left ileal ureter.

## RESULTS

The operative time was 420 min with an estimated blood loss of 300 ml. Adhesiolysis, identification of the necrosed ileal ureter, and dissection of the ileal ureter were the key steps. [Video 1] A 13-cm long segment of the ileum was isolated around 10 cm proximal to the previous side-to-side anastomosis. The postoperative hospital stay was 6 days, there were no

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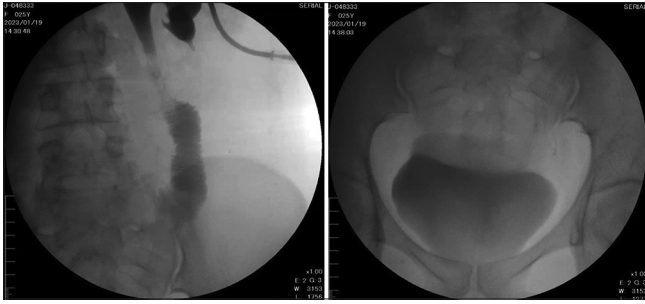
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**Figure 1:** Postoperative nephrostogram after robotic reconstruction of necrosed ileal ureter

postoperative complications, and the creatinine was 0.58. The nephrostogram, performed on the post-operative day 20, showed a normal drainage [Figure 1]. At 1 year of follow-up, the patient was symptom-free with no hydronephrosis.

## CONCLUSION

Proper preoperative evaluation in the form of ureteroscopy and nephrostogram is essential in such complex cases and a water-tight tension-free anastomosis is the backbone of success.<sup>[3]</sup> The mesentery supplying the ileal segment should be broad, twisting should be avoided and tunnelling the ileal segment below the sigmoid mesentery is not always necessary. The robotic approach is a feasible alternative in complex redo reconstructions because of the ability to dissect in narrow spaces for adhesiolysis, owing to the better ability to zoom and a greater degree of freedom of movement.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Video google drive link

[https://drive.google.com/file/d/1hZbmsR983T36VocjEMK aowtsw1fzFDUe/view?usp=share\\_link](https://drive.google.com/file/d/1hZbmsR983T36VocjEMK aowtsw1fzFDUe/view?usp=share_link)

## REFERENCES

1. Martínez-Sagarra JM, Amón Sesmero JH, Santos Largo J, Estébanez Zarranz J, Amo García A, Rodríguez Toves A. Ileal ureteroplasties. *Arch Esp Urol* 1992;45:961-6.
2. Zhu W, Xiong S, Fang D, Hao H, Zhang L, Xiong G, *et al.* Minimally invasive ileal ureter replacement: Comparative analysis of robot-assisted laparoscopic versus conventional laparoscopic surgery. *Int J Med Robot* 2021;17:e2230.
3. Zhong W, Hong P, Ding G, Yang K, Li X, Bao J, *et al.* Technical considerations and outcomes for ileal ureter replacement: A retrospective study in China. *BMC Surg* 2019;19:9.

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