



# Step-by-Step robotic heminephrectomy for duplicated renal collecting system

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## ABSTRACT

*Introduction:* A duplicated renal collecting system is a relatively common congenital anomaly rarely presenting in adults.

*Aim:* In this video we demonstrate our step-by-step technique of Robotic heminephrectomy in a patient with non-functioning upper pole moiety.

*Materials and Methods:* Following cystoscopy and ureteral catheter insertion the patient was placed in 60° modified flank position with the ipsilateral arm positioned at the side of the patient. A straight-line, three arm robotic port configuration was employed. The robot was docked at a 90-degree angle, perpendicular to the patient. Following mobilization the colon and identifying both ureters of the duplicated system, the ureters were followed cephalically toward, hilar vessels where the hilar anatomy was identified. The nonfunctioning pole vasculature was ligated using hem-o-lok clips. The ureter was sharply divided and the proximal ureteral stump was passed posterior the renal hilum. Ureteral stump was used as for retraction and heminephrectomy is completed along the line demarcating the upper and lower pole moieties. Renorrhaphy was performed using 0-Vicryl suture with a CT-1 needle. The nonfunctioning pole ureter was then dissected caudally toward the bladder hiatus, ligated using clips, and transected.

*Results:* The operating time was 240 minutes and blood loss was 100 cc. There was no complication post-operatively.

*Conclusions:* Wrist articulation and degree of freedom offered by robotic platform facilitates successful performance of minimally invasive heminephrectomy in the setting of an atrophic and symptomatic renal segment.

## ARTICLE INFO

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## EDITORIAL COMMENT

In this video by Zargar and colleagues from the Cleveland Clinic, the use of minimally invasive robotic surgery to perform an upper pole heminephrectomy for a non-functional renal segment is very nicely depicted. Clearly, the adoption of robotic minimally invasive surgery to the realm of renal sparing surgery is becoming common place at most academic and community centers internationally. The present video highlights that that this be accomplished in both the benign pathology and oncological setting to address an underlying clinical manifestation requiring surgical resection. Similarly, the authors of the present video have nicely

depicted the surgical steps such as vascular control and renal parenchymal apposition techniques that can be employed in a number of surgical procedures and modalities. The impetus lies on us as a surgical community to only advocate such minimally invasive or other innovative surgical approaches only if they can consistently replicate the surgical outcomes of open surgery hence the gauntlet is passed to all of us to consider reproducing the present outcomes in a study setting before it can be recommended within our field. Like all facets of medicine and surgery, an evidence based approach is the standard to which we must strictly adhere to nevertheless, we need to continually strive to optimize our therapeutic outcomes.

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