



Robotic transmesocolonic Pyelolithotomy of horseshoe kidney

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ABSTRACT

Introduction: The purpose of this video is to demonstrate the use of the robot to perform a transmesocolonic pyelolithotomy of a horseshoe kidney.

Materials and Methods: A 35-year old female presented with vague abdominal pain. CT scan imaging revealed the presence of a left horseshoe kidney with multiple pelvicalyceal stones. The patient was positioned in the supine position. A total of 4 ports were introduced. A 3-arm da Vinci robotic surgical system was docked, and the arms were connected. First, the dilated renal pelvis was identified behind the thin mesocolon. The mesocolon was entered and renal pelvis was dissected completely from the surrounding fat. Then, the renal pelvis was opened after adequate dissection and stones were visualized inside the calyces. By Prograsp forceps, stones were removed from all the calyces under vision and were extracted from the assistant trocar. Finally, the pyelotomy incision was closed using 4 0 Maxon in a continuous fashion and the mesocolon was closed using 3 0 PDS interrupted sutures. A JP drain was placed.

Result: Operative time was forty-five minutes, blood loss was 100 ml. The patient was discharged after 48 hours with no immediate complications.

Conclusion: The utilization of minimal invasive surgery using the robot to extract multiple pelvicalyceal stones from a horseshoe kidney without reflecting the mesocolon proved to be a feasible and novel way in the management of complex stone disease improving the outcome with minimal morbidity.

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EDITORIAL COMMENT

In this video Rajih and colleagues nicely detail the transmesocolic approach for robot-assisted laparoscopic pyelolithotomy. Their patient had a significant stone in a horseshoe kidney. In select patients, laparoscopy can facilitate the removal of large stones. Flexible endoscopes can also be deployed through the laparoscopic trocars

in order to ensure complete stone removal (1). With a transmesocolic approach, mobilization of the colon is not necessary. The renal pelvis can be directly accessed after incision of the mesocolon. This approach is best suited for patients with a thin mesentery when extensive mobilization of the kidney is not required (2). Robotic technology can also help with concomitant repair of a ureteropelvic junction obstruction if present (3).

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