

Supine Percutaneous Nephrolithotomy for Bilateral Complete Staghorn Calculi in an L-shaped Cross-fused Renal Ectopic Anomaly

Shashikant Mishra, Raguram Ganesamoni, Arvind P. Ganpule, Ravindra B. Sabnis, and Mahesh R. Desai

A 68-year-old woman was diagnosed to have a left-to-right L-shaped crossed-fused kidney with staghorn calculi in both renal moieties on evaluation for abdominal pain. She underwent supine percutaneous nephrolithotomy using 3 tracts in 3 stages. By using 3-dimensional reconstructed computed tomography urogram, proper preoperative planning, appropriate patient positioning, ultrasound-guided access, intraoperative traction, and flexible nephroscopy, complete stone clearance can be achieved in seemingly difficult stones in anomalous kidneys. *UROLOGY* 81: e3–e4, 2013. © 2013 Elsevier Inc.

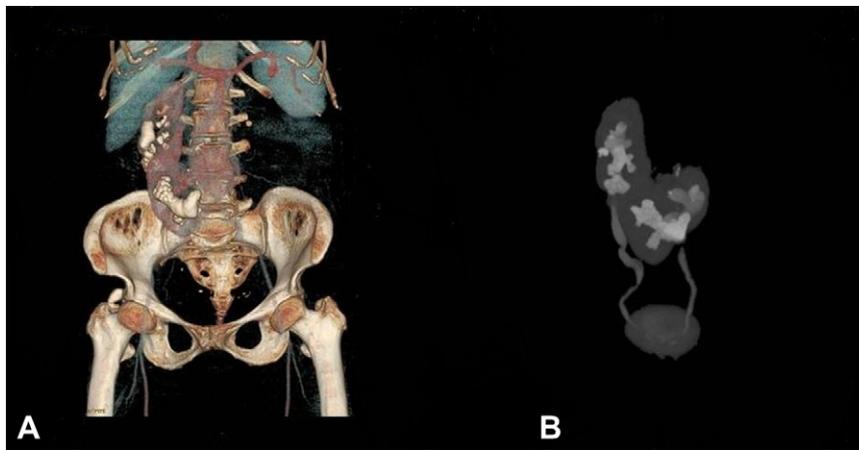


Figure 1. (A) A 3-dimensional reconstructed computed tomography image shows bilateral staghorn calculi in an L-shaped kidney. (B) A maximum-intensity projection image shows the calculi in relation to the pelvicalyceal system.



Figure 2. (A) An assistant provides traction to push the kidney laterally for a safe access into the pelvicalyceal system. (B) Ultrasound-guided puncture was used to rule out interposition of the bowel. (C) Three nephrostomy tubes were left in situ at the end of the first stage of supine percutaneous nephrolithotomy.

Financial Disclosure: The authors declare that they have no relevant financial interests.
From the Department of Urology, Muljibhai Patel Urological Hospital, Nadiad, India
Reprint requests: Mahesh R. Desai, F.R.C.S., Muljibhai Patel Urological Hospital,
Dr. Virendra Desai Rd, Nadiad, Gujarat, 387001 India. E-mail: mrdesai@mpuh.org
Submitted: September 24, 2012, accepted (with revisions): October 15, 2012

A 68-year-old woman with obesity, diabetes, hypertension, and ischemic heart disease presented with lower abdominal pain of 2 years' duration. Computed tomography (Fig. 1) showed

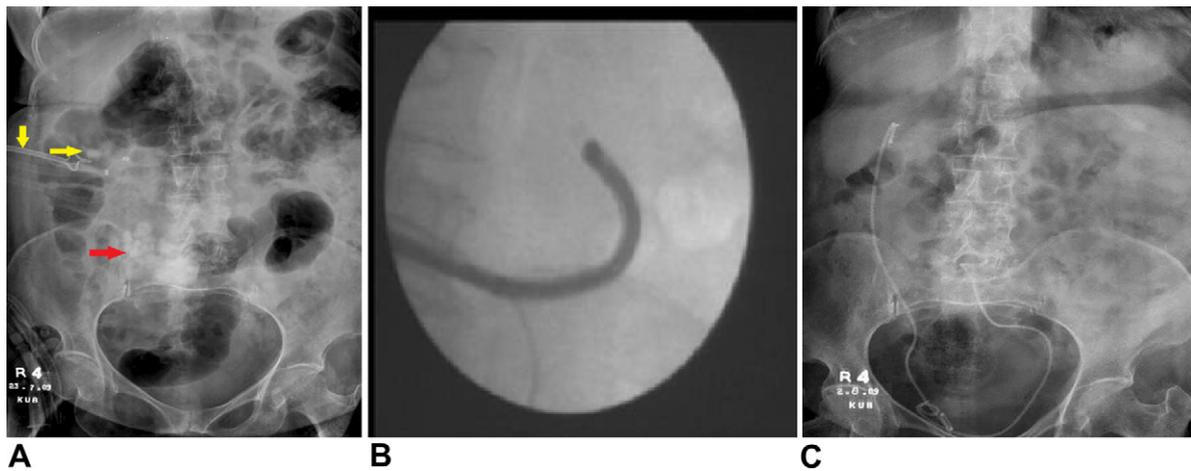


Figure 3. (A) An abdominal radiograph after the first-stage percutaneous nephrolithotomy shows residual calculi in the superior calyx of the right renal moiety (horizontal yellow arrow), 3 nephrostomy tubes (downward yellow arrow), and staghorn calculus in the left moiety (red arrow). (B) A flexible nephroscope is used to remove stones from the distal-most aspects of the left renal moiety. (C) Imaging shows complete clearance from both renal moieties, with bilateral double-J stents in situ.

a left-to-right, L-shaped, crossed-fused kidney with staghorn calculi in both renal moieties. She was planned for supine percutaneous nephrolithotomy (PCNL) in view of her comorbidities and anatomic variation.

An assistant gave traction to the left moiety from the medial-to-lateral aspect. Thus, the kidney became relatively fixed for easier access, and the bowel on the right side was displaced. Ultrasound-guided access (to rule out bowel) to the middle calyx of the right kidney was made, and the tract was dilated to 28F. A rigid nephroscope was used to clear the major bulk of the stones. Separate

punctures were done in the lower calyx and upper calyx (Fig. 2).

In the second stage, the residual stones in the upper calyx were cleared, and a Y-tract was made via the lower calyx tract into the superior calyx of the left moiety. Using the extra-long nephroscope and flexible nephroscope, we were able to achieve complete stone clearance in the third stage (Fig. 3).

Proper patient positioning, ultrasound-guided access, traction, use of Y-tract, and flexible nephroscopy can result in complete stone clearance in an anomalous kidney.