2.57 days \((P < 0.001)\). We report only one major complication (Clavien–Dindo Grade IIIb), where the patient had a prolonged leak requiring prolonged catheterisation and cystoscopy with cystogram under general anaesthesia, but no significant association with the OSJ.

**Conclusion:** Standardised postoperative pathways improve recovery of patients undergoing major procedures like RARP. The OSJ decreased hospital stay without compromising surgical or oncological outcomes. Limitations are the small number of patients, lack of randomisation and possible impact of the learning curve on the initial cases.

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**[36] Dynamic contrast-enhanced ultrasonography for better percutaneous nephrolithotomy puncture**

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**Objective:** To assess the efficiency of dynamic contrast-enhanced ultrasonography (DCE-US) for percutaneous nephrolithotomy (PCNL) puncture, as in recent years US contrast agents (microbubbles) have been used safely for cardiovascular and liver diseases diagnosis, and also to identify complex renal cysts, thus could be used to better delineate the pyelocalyceal system during PCNL puncture and reduce the radiation exposure for medical staff and patients.

**Methods:** A 40-year-old man with a history of thalassaemia trait, renal cysts, and bilateral renal staghorn stones was scheduled for right PCNL. A 6-F ureteric catheter was placed at the beginning of the procedure. Using a curvilinear US probe (frequency 4 Hz, mechanical index 0.4) and 18-G EchoTip® needle, renal access was established for the patient in prone position under general anaesthesia whilst slowly injecting three doses of 1.5 mL US contrast agent (Sonovue; prepared by mixing 5 mL sodium chloride 0.9% with 25 mg lyophilised powder) each followed by 5 mL physiological saline flush through the ureteric catheter to delineate the collecting system. Afterwards, pneumatic and ultrasonic lithotripsies were used.

**Results:** The PCNL procedure was successful. The collecting system was successfully accessed through a lower calyx puncture. No blood transfusion was needed during or after the procedure (haemoglobin op < 1 g/dL). The puncture time was 1.2 min, operating time 141 min, and fluoroscopy time was 3.1 min. There were no major complications or adverse effects. The patient was discharged 48 h after the procedure.

**Conclusion:** DCE-US is a safe innovative technique that might be a good method to improve PCNL puncture, reduce radiation, and possibly reduce the risk of bleeding. Further randomised studies are needed to evaluate its benefits.

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**[37] Assessment of lower calyceal single-access percutaneous nephrolithotomy (PCNL) for staghorn stones: A single surgeon and a single centre experience at King Abdulaziz Medical City, Riyadh**

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**Objective:** To establish whether lower calyceal access percutaneous nephrolithotomy (PCNL) is the safest access and has the same efficacy as upper calyceal access for staghorn stones, as PCNL is still the mainstay treatment of choice for most complex renal stones, but there is still controversy surrounding the stone-free rate (SFR) in comparison to upper and middle calyceal accesses.

**Methods:** This is a single surgeon and single tertiary centre retrospective study. All lower calyceal access PCNLs performed from May 2012 to August 2017 were included. To assess the SFR a postoperative computed tomography scan was reviewed. Postoperative complications were reported using the modified Clavien–Dindo Grading System. Descriptive analysis of the data was done.

**Results:** In all, 67 patients were included in our study. The mean hospital stay was 7.9 days and the mean operative time was 138.52 min. The mean staghorn stone burden was 476.34 mm². Overall, 80.59% (54) of patients had complete stone resolution after the first session and 8.95% (six) of patients required a second session to achieve complete resolution of staghorn stone. Only three patients (4.47%) had complications, classified as Clavien–Dindo Grade II with the remainder classified as Grade I, two patients needed postoperative blood transfusion, one had a renal pelvis perforation, and none had sepsis or a pulmonary embolism.

**Conclusion:** The use of lower calyceal single-access PCNL is safe for treating complex renal stones and achieves stone resolution in one or two sessions in most cases (89.5%), a result that is almost equivalent to the rate achieved by upper calyceal access PCNL in the literature (up to 90%).

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