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Percutaneous renal surgery in the split leg modified lateral position and others tricks of the trade

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Introduction: We present a video of percutaneous renal surgery in the split-leg-modified-lateral position, with artifices developed to decrease operating time, irradiation and cost.

Methods: Since January 2003, percutaneous surgery is performed in the split-leg-modified-lateral position. The thorax is in lateral position, the pelvis is in oblique position, and the lower limbs are split and bent in the lowest position. To facilitate superior calyx puncture, we use a caudal renal displacement technique, by the lever manoeuvre, using an 18-gauge needle inserted through a lower calyx. When the kidney has a high mobility, the Amplatz dilator and sheath are stopped just outside the renal capsule. The renal parenchyma tunnel is widened using blunt dissection with a bi-prong-forceps under endoscopic vision. The nephroscope is used as an aspiration tip to remove small stones and blood clots. Via a second 12-Fr percutaneous tract, the rigid ureteroscope is used for stones mobilization from the calyx to the renal-pelvis and first-tract.

Results: PCNL in the split-leg-modified-lateral position resulted in decreased operating room-time, using only one drapes-set, and allowed simultaneous antegrade and retrograde endoscopic approach to upper urinary tract. Adjunct procedures were internal urethrotomy, transurethral resection of prostate, rigid and flexible ureteroscopy, and endopyelotomy or endopyeloplasty. The needle renal displacement technique was usually effective, except when the kidney was fixed with previous open surgery. Dilating the renal parenchyma using blunt dissection with a bi-prong forceps resulted in less time and irradiation in mobile kidneys. The aspiration technique with the nephroscope provides the greatest chances to have a "stone free" status, from even the fine sand debris.

Conclusion: PCNL in the split-leg-modified-lateral position have several advantages for the patient and the urologist, with greater versatility of stone manipulation along the entire upper urinary tract. These tricks provided a real benefit, saving money, time and irradiation.

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