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Direct percutaneous access on to the stone in supine PCNL

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Introduction: Percutaneous access during percutaneous nephrolithotomy is usually obtained using fluoroscopic or ultrasound guided puncture via the appropriate calyx. For fluoroscopic guided access the pelvi-calyceal anatomy is often outlined by endoscopic retrograde filling of the pelvi-calyceal system (PCS) with contrast medium. At times this may not be possible due to a difficult or failed retrograde access or even non-distention of the PCS.

Methods: We present a video demonstrating a variation to our technique of supine PCNL with direct needle puncture on to a radio-opaque renal stone, without any retrograde opacification of the PCS. The patient is placed in the Barts flank-free modified supine PCNL position with the legs in lithotomy. A subcostal entry point posterior to the posterior axillary line is chosen. Under continuous x-ray screening with the C-arm of the image intensifier at 0 degrees in the antero-posterior plane the 1.7 cm renal pelvis stone is targeted directly with an 18 Gauge percutaneous access needle. Grazing of the stone against the needle end and aspiration/ drainage of urine confirms successful entry into the PCS. Subsequent access tract dilatation is with a Nephromax balloon catheter. Stone fragmentation is undertaken with the Swiss Lithoclast Master (EMS).

Results: The patient had an uncomplicated procedure with complete stone clearance at the end of the procedure. The post-operative recovery was uneventful and she remains stone and symptom free at 6 month follow-up in the out-patient clinic.

Conclusions: In selected cases it is possible to obtain percutaneous access into the kidney by direct puncture onto the stone during PCNL and thereby avoid the need for retrograde PCS opacification or ureteric occlusion. There were no added complications or morbidity using this approach and it helped reduce the overall operating time and cost.

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