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Effect of local anesthesia infiltration on postoperative pain in patients undergoing percutaneous nephrolithotomy

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Introduction: Percutaneous Nephrolithotomy (PCNL) is a safe and effective procedure for management of patients with renal calculi. Placing a nephrostomy tube after PCNL is the standard of post-operative care. Pain after PCNL occurs due to dilatation of renal capsule and parenchyma as it is richly innervated by pain conducting neurons. Therefore peritubal local analgesic infiltration from renal capsule to skin at the site of PCNL can be used as an adjunct for pain control. In this video we are describing the alternate and effective method for pain management during PCNL. The video run time is 5 min.

Material and Methods: Bupivacaine 0.25% 5ml was infiltrated at surgical incision site before puncture. Immediately after the procedure before removing Amplatz sheath under fluoroscopy guidance, Bupivacaine 0.25% , 5ml each was infiltrated into renal capsule , muscle, subcutaneous tissue and skin with a 23-gauge spinal needle (10cm length) along the nephrostomy tube at 6 o'clock , 12 o'clock , 3 o'clock & 9o'clock position. A 12 Fr Nephrostomy tube was placed at the end of procedure and removed 24hrs postoperatively. Pain score was recorded immediate post operatively and 6hrly for 24 hours .When pain score >4 IV tramadol 1mg/kg as a rescue Analgesic was given. Pain was recorded on Visual Analog Scale (VAS) ranging from 0 score to 10 where 0 means no pain and 10 means worst pain. Total requirement of tramadol in 24 hours was recorded.

Results: Infiltration of Bupivacaine along the nephrostomy tube at all the 4 quadrants at end of PCNL procedure showed significant reduction in Pain scores and analgesic requirement for the first 24 hours postoperatively compare to control group. Use of local anesthesia was not associated with any side effect.

Conclusion: Bupivacaine Infiltration along the nephrostomy tube at the end of PCNL is an effective method for reduction of postoperative pain.