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A different approach to the percutaneous nephrostomy by urologists

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Introduction: Percutaneous nephrostomy (PCN) tube placement is generally performed in radiologic departments worldwide. However, there are a few urologist-directed studies about PCN performed with ultrasound guidance. Needle direction using a convex abdominal ultrasound probe might be difficult in inexperienced hands. In order to perform this procedure easily, we propose that a probe placed on flank or intercostal region and a long grooved needle director that never allows needle movement would be useful. We considered a transrectal ultrasound (TRUS) probe was suitable to resolve this issue.

Material and Method: From January 2007 to April 2011, a total of 113 percutaneous renal access (PRA) were performed using a TRUS probe in 102 patients, aged 20 to 84 years old. Because of the insufficient imaging capability of the TRUS probe in obese patients whose body mass index (BMI) greater than 30kg/m² were excluded. Forty two PRA were performed under local anesthesia and this group was named local anesthesia (LA) group. Seventy one PRA were performed for nephrostomy insertion under local anesthesia supplemented by deep sedation and this cluster was named deep sedation (DS) group.

Results: Targeted calyx puncture and guide wire placement was performed in all patients (100%) but success rate of tube insertion in each group was different. Successful PCN insertion rate was 69.1% (29 of 42 cases) in LA group and 95.8% (68 of 71 cases) in DS group. No major vascular injury and/or adjacent organ injury to bowel, liver, spleen or lung was seen in any patient.

Conclusion: Guidance of TRUS probe, deep sedation, and modified dilators may offer a high success rate to the urologists with little experience in PCN insertion which they would find it difficult to perform.

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