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Ultrasound(US)-guided Microperc in oblique-supine position: first experience

N. Macchione, M. Catellani, E. Montanari

A.O. San Paolo-Università degli Studi di Milano, Milan, Italy

Introduction: In 2011 Desai described the Micro-perc (Single-Step Percutaneous Nephrolithotomy) defined as a modified percutaneous nephrolithotomy in which renal access and lithotripsy are done in 1 step using the all-seeing needle (4.85 Fr). At date a total of 196 renal units have been treated by several authors and all of them described a procedure in prone position under fluoroscopic/ultrasound guidance. We present our experience with supine-micro-perc/us-guided.

Materials and Methods: This is a prospective non-randomized trial. Recruitment has started 05.01.2014 and is continuing. At this stage we report an interim analysis. The procedure was performed according to the technique described by Desai, but with patient in oblique-supine position and performing the puncture under us-guidance. Antibiotics prophylaxis was performed according to hospital's guidelines. All procedures has been carried out after obtaining a properly informed consent.

Results: A total of 10 patients were enrolled. Every patient had a pre-op CT scan. Preoperatively a 7 F ureteral catheter end-hole was placed. The procedure was performed through the placement of Polydiagnost All-Seeing Needle under US Fluoroscopic control, the irrigation was obtained with bags at 150 cm above the patient and lithotripsy by Holmium laser Dornier 20 Watt, laser fiber 270 micron (0,4 J x 20 Hz). In 2 patients a 7 Ch nephrostomy was placed and removed after 24h. Post-operative complications reported were: fever in 2 cases, retroperitoneal hematoma and lumbar pain in 1. Stone-free-rate was assessed at day 7 by US and 6 weeks post-op by low-dose NCCT (Table).

Conclusions: Microperc is an effective and safe procedure even if performed in a supine position and under ultrasound guidance, especially for stones less than 15 mm in the lower calyx. The initial results, also suggest that the learning curve is longer than 10 cases and further technical developments are needed to improve the outcome.

Age/Sex/BMI	55,6 (29-82)	10 Male	25.2 (24-26.9)
Stone Side/Size/HU	8 Left / 2 Right	11.5 mm (7-18)	922 HU (600-1400)
Upper/Medium/Lower calyx	1	3	6
Skin-Calyx-Distance/Hydrocalyx/OR timing	78.5 mm (70-92)	4/10	123.8 min (60-185)
Hb loss/Hospitalization/Blood transfusion	1.8 gr/dL	5.5 (3-10)	0
US-SFR/NCCT-SFR/Fragments > 4mm	6/10	9/10	1/10

Table 1