

## PP-044

### Ultrasound-guided X-ray free percutaneous nephrolithotomy for treatment of simple stones in the flank position

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**Introduction:** The purpose of this study was to examine the effectiveness and safety of percutaneous nephrolithotomy with ultrasonography-guided renal access in the flank position without the use of fluoroscopy in any stage of the procedure.

**Material and Method:** Percutaneous nephron-lithotomy was performed in flank position under the guidance of ultrasound (USG) without the use of fluoroscopy between December 2008 and January 2010 on 43 patients who had kidney stones bigger than 20 mm. Access to the kidney's proper calyx was achieved by dilatation through the guide wire placed after insertion of the needle through the needle director under the guidance of transrectal ultrasound probe placed on the patient's flank area. A convex USG probe was used for imaging during dilatation and lithotripsy instead of fluoroscopy.

**Result:** Access to the targeted calyx was achieved successfully in all patients (100%). The percentage stone free rate was 86.1% (37 patients). Residual stones were detected in six patients. Their dimensions ranged from 5 to 12 mm. The mean stone diameter was 29 (20-41) mm, duration of surgery was  $87.1 \pm 43.2$  (55-210) min and duration of hospital stay was 3.1 (2-8) days. Blood transfusions were given to two patients; none of the patients had major intraoperative or postoperative complications. In comparison with standard percutaneous nephrolithotomy, percutaneous nephrolithotomy in flank position under ultrasonographic imaging instead of using fluoroscopy seems to be safe and effective.

**Conclusion:** This procedure has to be limited to selected cases with one or maximum two big stones in the pelvis or in a single calyx in absence of complex intrarenal anatomy. Both surgical team and the patients were protected from the harmful effects of radiation. Regarding anesthesia, flank position is more comfortable for the patient than prone position.

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