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Tubeless percutaneous nephrolithotomy for lower calyceal stones is a cost effective and ideal management in Indian setting – A single centre study

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Objectives: Small lower-pole stones(1-2 cm size) have been commonly treated by SWL, RIRS, PCNL however controversy exists on the indications for the use of PCNL, SWL, or RIRS. In this Retrospective Descriptive study, we evaluated the outcome of patients undergoing PCNL for isolated lower pole calculi.
Materials-Methods: 105 patients underwent PCNL for isolated lower pole calculi from january 2009 to december 2012 at our center. Patients chose PCNL because of the success rate and cost factor. All the punctures were infracostal and inferior calyceal with single access tract in all cases. No nephrostomy tube was placed in any patient. The demographic profile and outcomes of these patients were compared with the other existing series.
Results: Demography included 74 male(74.2%) and 27 female (25.8%) patients. Mean age was 41±12years (range5-69years). Mean stone burden was 16±4mm(range9to27mm). All punctures were infracostal and inferior calyceal with single access tract. 57 patients(54.2%) underwent antegrade DJ stenting after stone clearance whereas 48 patients(45.7%) were totally tubeless and stentless. None of the patients received a nephrostomy tube. The reasons for placement of DJ stent after stone clearance were 10(9.5%) for inta-operative bleeding, 35(33.3%) for stone fragmentation and 12(11.4%) for suspected pelvi-calyceal system injury. Mean operative time recorded was 38.18±8.73 min (range20-64min). Mean Hemoglobin drop was 0.48±0.26 units(range0.1-1.4 units). None of the patients required blood transfusion for intraoperative hemorrage. Mean hospital stay was 32.58±10.12 hours (range24-78hours). Only 3 patients (2.8%) developed fever in post operative period which was a clavien grade I complication. 99 Patients achieved complete stone clearance(stone clearance rate 94.2%)
Conclusions: PCNL is a viable and cost effective treatment for treatment of isolated lower pole calculi and gives better stone clearance rates than SWL and RIRS. The complications and hospital stay can be minimized if expertly performed.