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Single centre comparison of a novel single step balloon inflation device and Amplatz sheath dilatation during percutaneous nephrolithotomy – A pilot study

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Objective: A new second generation PCNL balloon dilatation device (SBD) has been launched promising to challenge the traditional Amplatz serial dilators. This device allows for the polyurethane sheath to be deployed on balloon inflation. Our primary objective in this pilot study was to determine if the use of this new device impacted on overall patient outcome when compared to the traditional Amplatz serial dilator system.

Design: Retrospective chart review

Outcome measures: Single procedure success rates, re-treatment rates, hospital stay, haemoglobin, calculi volume, calculi configuration, patient demographics.

Results: A total of 11 patients were rendered stone free with a single procedure, with 30% in Series 1, and 80% in Series 2. Correspondingly, 11 individual repeat procedures (4 relook PCNL's, 5 URS's, 2 ESWL's) were required in Series 1 to render the remaining 70% stone free. Mean hospital stay for Series 1 was 5.2 days (range 3 – 10 days). In comparison, Series 2 was 3.8 days with 70% of patients staying the minimum 3 days. The haemoglobin values before and after treatment dropped by an average 1.79, with the average in Series 1, 2.09 and Series 2, 1.5.

Conclusion: The single step balloon dilatation device is found to have an improved patient outcome as compared to the Amplatz serial dilators.

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