Percutaneous stone surgery utilizing tubeless technique with fibrin sealant: Report of our first 100 cases.

Authors: Durbin J., Stroup S., L'esperance J., Auge B.

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Abstract:

Background: Percutaneous nephrolithotomy (PCNL) is the preferred treatment for large renal stones, and the tubeless technique for select patients has recently gained popularity. Several iterations of the procedure have been described. We report on our first 107 PCNL patients utilizing fibrin sealant as a hemostatic agent within the access tract. Methods: A retrospective review was completed for PCNL performed without nephrostomy tube from January 2002 to July 2008. We assessed demographics, length of hospital stay, stone size, stone free rates and complications. Stone free results were obtained by post-operative CT scan the morning following the procedure. Results: Fifty-nine men and 48 women with a mean age of 43 years were included in the analysis. Mean stone size was 2.9 cm and the average length of hospital stay was 1.07 days. Immediate targeted stone free rate in the tubeless group was 72% (77/107) which improved to 90% when considering residual fragments <=4 mm as stone free. The change in serum creatinine, hemoglobin and hematocrit were all statistically different when comparing preop and postop values, however, the change in creatinine was clinically insignificant (0.92mg/dl preop to 0.96mg/dl postop). Complications included seven asymptomatic subcapsular hematomas, one pseudoaneurysm requiring selective embolization, one urine leak and 5 return visits to the emergency room for pain. Conclusion: Tubeless PCNL remains a viable option for select patients. The specific technique utilized is dependent upon physician preference. The application of fibrin sealant to the nephrostomy tract can alleviate drainage in the immediate postoperative period.