A prospective, randomized trial evaluating the safety and efficacy of fibrin sealant in tubeless percutaneous nephrolithotomy.

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Abstract:

PURPOSE: We performed a prospective, randomized trial to assess the safety and efficacy of fibrin sealant in tubeless percutaneous nephrolithotomy.

MATERIALS AND METHODS: A total of 63 patients undergoing tubeless percutaneous nephrolithotomy were randomized to receive Tisseel vapor heated sealant at the end of the procedure. Fibrin sealant was instilled under direct vision in the nephrostomy tract at the end of the procedure. Patients younger than 14 years and those undergoing staged percutaneous nephrolithotomy or bilateral simultaneous percutaneous nephrolithotomy were excluded from study. Patients needing greater than 2 percutaneous tracts, those with significant bleeding or associated pyonephrosis and those with a residual stone burden were also excluded from study. The perioperative outcome in these patients (experimental group) was compared with the outcome in those undergoing tubeless percutaneous nephrolithotomy without fibrin sealant (control group).

RESULTS: Fibrin sealant was instilled in 32 patients. There was no difference in the hematocrit decrease and blood transfusion requirement in the 2 groups. Patients in the experimental group experienced less postoperative pain and required less analgesia. They were discharged home 5 hours earlier than patients in the control group. However, this difference was not statistically significant. Complete stone clearance was achieved in 87.5% of patients in the experimental group and in 90.32% of controls.

CONCLUSIONS: The instillation of Tisseel fibrin glue is safe for tubeless percutaneous nephrolithotomy. It is associated with less postoperative pain and a lower analgesic requirement. Additional prospective, randomized studies are required to better define its clinical role in the future.