

A prospective randomized comparison of type of nephrostomy drainage following percutaneous nephrostolithotomy: large bore versus small bore versus tubeless.

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Abstract

PURPOSE:

We compared postoperative outcomes among tubeless, conventional large bore nephrostomy drainage and small bore nephrostomy drainage following percutaneous nephrostolithotomy (PCNL) in a prospective randomized fashion.

MATERIALS AND METHODS:

Between January and June 2001, 30 patients undergoing PCNL were randomized to receive conventional large bore (20Fr) nephrostomy drainage (group 1, 10 patients), small bore (9Fr) nephrostomy drainage (group 2, 10 patients) or no nephrostomy drainage (group 3, 10 patients). Inclusion criteria included a single subcostal tract, uncomplicated procedure, normal preoperative renal function and complete stone clearance. Factors compared among the 3 groups were postoperative analgesia requirement, urinary extravasation, duration of hematuria, duration of urinary leak, decrease in hematocrit and hospital stay.

RESULTS:

The postoperative analgesic requirement was significantly higher in group 1 (217 mg) compared to groups 2 (140 mg, $p < 0.05$) and 3 (87.5 mg, $p < 0.0001$). Patients in group 3 had a significantly shorter duration (4.8 hours) of urinary leak through the percutaneous renal tract compared to patients in groups 1 (21.4 hours, $p < 0.05$) and 2 (13.2 hours, $p < 0.05$). Hospital stay was significantly shorter in group 3 (3.4 days) compared to groups 1 (4.4 days, $p < 0.05$) and 2 (4.3 days, $p < 0.05$). All 3 groups were similar in terms of operative time, duration of hematuria and decrease in hematocrit. Postoperative ultrasound did not reveal significant urinary extravasation in any case.

CONCLUSIONS:

Tubeless PCNL is associated with the least postoperative pain, urinary leakage and hospital stay. Small bore nephrostomy drainage may be a reasonable option in patients in whom the incidence of stent dysuria is likely to be higher.