Anatrophic Nephrolithotomy in the Management of Large Staghorn Calculi - A Single Centre Experience

Abstract

Introduction: With advances in endourology, open stone surgery for staghorn calculi has markedly diminished. Anatrophic Nephrolithotomy (AN) is performed for complex staghorn stones which cannot be cleared by a reasonable number of Percutaneous Nephrolithotomy (PNL) attempts.

Aim: To assess the indications and outcomes of AN in the modern era.

Materials and methods: Between April 2008 and July 2015, AN was done in 14 renal units in 13 patients. In this retrospective study, demography, stone characteristics, operative details, clearance and long term outcomes were assessed.

Results: AN was performed for complex staghorn calculi involving pelvis and all calyces in 10 patients, infundibular stenosis in two patients and failed PNL in one patient. Mean (SD) in situ cold ischemia time was 47.64 (5.27) minutes. Retroperitoneal drain and double J stent were placed in all 13 patients. Median (IQR) estimated blood loss was 130 (75) ml. There was no perioperative mortality. Surgical site infection was seen in 2 patients and urosepsis in 2 patients. Drain was removed at a mean (SD) of 9.11 (6.15) days. Mean (SD) postoperative length of hospitalization was 15.44 (7.14) days. Stent removal was done in all patients between 2-8 weeks. Median (IQR) clearance was 95 (7.5%). There was no renal failure or new calculi during the follow up period {median (IQR): 1(3) years}.

Conclusion: AN is effective in management of large staghorn calculi failed minimally invasive approaches and achieves 80%-100% clearance without much need for secondary interventions. Renal function is preserved and with emergence of laparoscopy and robotics, postoperative stay is minimized with expedited recovery and comparable results with open surgery.