

Percutaneous Nephrolithotomy: Critical Analysis of Unfavorable Results

Introduction and Objective: To identify the risk factors of unfavorable results of percutaneous nephrolithotomy (PCNL).

Materials and Methods: A total of 602 patients were subjected to 616 PCNL procedures. Patients were divided into two groups according to the results of treatment. Group 1 with favorable results includes patients who became stone free after a single PCNL procedure without major complications. Group 2 with unfavorable results includes three subgroups: a) Patients who developed major complications, b) Those who required second major intervention to complete stone removal, and c) Patients with residual stones > 4 mm at 3 month. Risk factors for unfavorable outcome were studied by univariate and multivariate analyses.

Results: Unfavorable results were documented in 176 patients (28.6%) due to major complications in 40 (6.5%), need for second intervention in 124 (20%), and presence of residual stones > 4 mm at 3 month in 12 (1.9%). The remaining 440 patients (71.4%) were considered of favorable outcome. Independent risk factors of unfavorable results on multivariate analysis were staghorn stones, multiple stones and stone largest diameter > 50 mm.

Conclusions: To optimize the results of PCNL, urologists should consider careful patient selection. Patients with staghorn stones, multiple stones or large stone burden are more susceptible to unfavorable outcome.