

The clinical research office of the endourological society percutaneous nephrolithotomy global study: staghorn versus nonstaghorn stones

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Purpose: The study compared characteristics and outcomes in patients with staghorn or nonstaghorn stones who were treated with percutaneous nephrolithotomy (PCNL) within the Clinical Research Office of the Endourological Society (CROES) PCNL Global Study.

Patients and Methods: Data over a 1-year period from consecutively treated patients from 96 centers worldwide were collated. The following variables in patients with staghorn or nonstaghorn stones were compared: National prevalence, patient characteristics, access method, puncture frequency and outcomes, including bleeding rates, operative time, and duration of hospital stay.

Results: Data from 5335 eligible patients were collated; 1466 (27.5%) with staghorn and 3869 (72.5%) with nonstaghorn stones. Staghorn stone presentation varied between centers from 67% in Thailand to 13% in Argentina. The frequencies of previous procedures were similar between groups, but shockwave lithotripsy was less frequent in patients with staghorn stones compared with nonstaghorn (16.8% vs 22.6%) and positive preoperative urine cultures were more frequent in patients with staghorn than nonstaghorn stones (23.4% vs 13.1%). Patients with staghorn stones underwent multiple punctures more frequently than those with nonstaghorn stones (16.9% vs 5.0%). Postoperative fever, bleeding, and the need for blood transfusion were more frequent, the median operative time and duration of hospital stay were longer, while the proportion of patients remaining stone free was lower (56.9% vs 82.5%) in patients with staghorn than nonstaghorn stones.

Conclusions: The proportion of patients with staghorn stones varies widely between centers. Stone-free rates were lower, complications more frequent, and operative time and hospital stay were longer in patients with staghorn stones.

Editorial Comment

The findings of this study are not unexpected; staghorn calculi present a unique challenge to the endourologist; with anticipated higher rates of complications and lower rates of success. However, the study demonstrates clearly that though the rates of complications were higher and hospital stay and OR times longer, they were not prohibitively so; PCNL remains a high standard of care for staghorn calculi. The information provided is useful for counseling patients on the contemporary risks of PCNL and the anticipated success and recuperation. Though the authors report that staghorn calculi are more common in women and have a higher rate of positive urine cultures, they did not report the stone analyses on these patients. It would be useful to evaluate whether the risk of infectious complications is higher in patients with struvite calculi. The relatively low utilization of multiple accesses for staghorn calculi alludes to a high utilization of flexible endoscopes and adjunctive procedures such as flexible ureteroscopy and SWL. The authors do not report the percentage of patients who indeed underwent these procedures. Advocates of the multiple access approach would likely conclude that the low stone free rate of 57% could have been improved had multiple accesses been employed.

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