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Perioperative outcomes of patients with staghorn versus nonstaghorn stones who were treated with percutaneous nephrolithotomy (PCNL)

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Objective: The study compared perioperative outcomes in patients with staghorn stones versus nonstaghorn stones who were treated with percutaneous nephrolithotomy (PCNL).

Materials-Methods: We retrospectively examined the records of 172 consecutive patients who underwent PCNL between July 2008 and September 2014.

Results: The patients were similar in age, race, and gender at baseline. 114 patients in staghorn stones versus 58 in nonstaghorn stones. The number of stones, site of puncture and grade of surgeon were also comparable between the two groups. Mean size of stone is 35.0 mm in staghorn stones and 23.6 mm in nonstaghorn stones ($p = 0.000$). Mean duration of surgery in staghorn stones was 170 minutes vs nonstaghorn stones 159 minutes ($p = 0.265$). In staghorn stones, drop in Hb is 1.9g/dl, whereas, in nonstaghorn stones drop in Hb is 1.1 g/dL ($p = 0.001$). 17.5 % in staghorn stones received post-op transfusion compared to 5.1 % in nonstaghorn stones ($p = 0.024$). 14.0% of staghorn stones versus 13.8% of nonstaghorn stones had post-operative fever ($p=0.965$). 32.1 % in staghorn stones versus 54.4% in nonstaghorn stones achieve stone free status post-op ($p = 0.005$). 33 % in staghorn stones and 17.5 % in nonstaghorn stones required additional procedure after PCNL to clear residual stones ($p = 0.034$). There was also no statistical significance with regards to the types of additional procedure (ESWL, URS or PCNL) required between the groups.

Conclusions: Our findings are consistent with past research that demonstrated stone free rates were significantly lower, operative time were longer, and higher complication rates in patients with staghorn calculi. This information is useful for pre-operative counselling and management of patient expectations.