

# **Outcomes of Percutaneous Nephrolithotomy Versus Open Stone Surgery for Patients with Staghorn Calculi: Safety and Efficacy**

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### **Abstract**

**Key Words :** Staghorn stones\_ PCNL – OSS.

The wide use of minimally invasive techniques in the treatment of staghorn and multiple renal stones has overshadowed the open techniques in the last three decades. Nevertheless, open techniques are still viable option for the management of complex multiple and staghorn renal.

**Aim of the work:** In this study, we compare percutaneous nephrolithotomy (PCNL) versus open stone surgery (OSS) for patients with staghorn calculi in terms of efficacy and safety outcomes.

**RESULTS:** The patient demographics and stone characteristics were similar amongst both groups. Regarding efficacy, OSS showed better outcomes than PCNL in the form of shorter operative time ( $131.48 \pm 10.2$  min) vs ( $174.63 \pm 14.9$  min) and higher stone clearance rate (92%) vs (84%). Regarding safety, PCNL showed better outcomes than OSS in the form of lower incidence of intraoperative and postoperative rate of complications (24% vs 28%) and (24% vs 36%), shorter hospital stay (  $3.92 \pm 1.3$  days) vs ( $5.88 \pm 1.2$  days) and shorter recovery time ( $16.3 \pm 3.3$  days) vs ( $31 \pm 5$  days).

**CONCLUSION:** PCNL is a valuable treatment option for staghorn stones with a stone free rate approaching that of open surgery. Moreover, it has the advantages of lower morbidity, shorter hospital stay and earlier return to work.