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### Metabolic abnormalities in patients undergoing percutaneous nephrolithotomy (PCNL) help reduce stone recurrence

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**Introduction:** PCNL has proven its efficacy in clearance of stones with low morbidity and mortality rate. However, recurrence of stones is a major issue that affects patient's quality of life and has financial implications. Few studies have shown the benefit of medical treatment in reducing recurrence. We hypothesize that metabolic studies in these patients helps in targeting medical therapy and reduce recurrence rate. To address this issue further we conducted a study to assess the metabolic abnormalities in patients who underwent PCNL.

**Materials and Methods:** Data was collected retrospectively for patients who had PCNL from Jan 2006 to May 2012. Cases were selected if full pre-operative and adequate follow-up details of metabolic stone studies were available. Patients were seen in dedicated Joint metabolic stone clinics with Urologist, Nephrologist, and dietician along with biochemistry input. Those with incomplete work-up were excluded from the study.

**Results:** In total 139 patients were identified and 97 (70%) had complex stone. Median age and stone surface area were 50 yrs and 1570 mm<sup>2</sup>, respectively. Overall Metabolic abnormalities were found in 55 (39.5%). Half of these had multiple abnormalities. Hyperuricosuria, hyperoxaluria and hypercalciuria were present in 16%, 14.4% and 7.2%, respectively.

Complex stones were found in 41 (74.5%) in patients with metabolic abnormality in comparison to 56 (66.6%) without metabolic abnormality ( $p 0.3$ ). In patients with prior stone risk factor metabolic abnormalities were found in 43.5% in comparison to 37.6% with no prior stone risk factors ( $p 0.5$ ).

Targeted medical therapies were used in patients with metabolic abnormalities. Our observation is that these patients have shown reduced recurrence rate.

**Conclusion:** Metabolic abnormalities are found in high proportion of patients who underwent PCNL for large stone burdens and there was no significant association with high risk stone patients, metabolic syndrome or complexity of stone. Detection of actual metabolic disorder with appropriate treatment may be helpful in preventing stone recurrence after PCNL.

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