Summary and Conclusion

This study was designed to evaluate PCNL for staghorn calculi : safety and efficacy of supracostal approach and multiple tracts.

To achieve this purpose 47 patients were included in this study (from outpatient clinic Benha university hospital) between March 2010 to january 2012; all patients with staghorn stones were included in this study while patients with uncorrectable coagulopathy, Congenital anomalies in the kidney such as Horse-shoe kidney, ectopic pelvic kidney, high lying kidneys above 11th rib and chest complication as emphysema, pulmonary diseases where excluded.

supracostal PCNL in prone position was done under fluoroscopic guided puncture.

The mean age was 46.12±10.75 (range 24-65). BMI (mean ± SD) was 23.6±5.92 (range 20- 43kg/m^2), 4 patients (8%) were morbid obese). The study included 30 males (63.80%) and 17 females (36.2%).

Stone characteristics of the studied cases; as for stone site,15 cases (31.9%) had complete staghorn stones, 27 cases (57.5%) had partial staghorn stones, 5 cases (10.6%) borderline staghorn stones As for stone side 25 cases (53.2%) were right sided and 22 cases (46.8%) were left sided. As for mean stone size 5.1±2.01 (range 4.2- 8.4cm). Fourty two of the cases had radiopaque (89.4%), and 5 cases had radiolucent stones (10.6%).

The intra-operative data of the studies cases; general anesthesia was used in all cases (100%), and fluoroscopic guidance was used in all cases (100%),Upper calyceal puncture was used in 34 cases (72.3%),

upper and middle calyceal puncture was used in 11 cases (23.5%), upper and lower calyceal puncture was used in 2 cases (4.2%), Alken track dilatation was used in all cases (100%). Nephrostomy drainage was used in 47 cases (100%) postoperative. Mean operative time was 120 minutes (range: 90-200 minutes).

The number of PCNL sessions as one session in 35 cases (74.5%), two sessions in 10 cases (21.3%) and three sessions in two cases (4.2%)

The intraoperative complications (total of 11 cases, 23.4%); Dilatation difficulties were found in 5 cases (10.6%), Bleeding requiring transfusion in 2 cases (4.2%), Bleeding requiring termination of the procedure 1 case (2.1%) Perforation in 2 cases (4.2%), perinephric collections in two cases (4.2%) and Visceral injury did not occur in any of the studied cases.

Postoperatively; postoperative data of the studied cases; stone free rate was 85.1% (40 cases), residual stones more than 4 mm in 7 cases (14.9%).observation was done in 1 case (2.1%), DJ insertion was used in 2 cases (4.2%) and ESWL was used in 3 cases (6.3%). PCNL post ESWL was needed in 1 case (2.1%).and mean hospital stay was 4.8 days (range: 2-12 days).

Postoperative complications (total 14 cases, 29.7%); fever in 3 cases (6.4%), bleeding requiring blood transfution in 2 cases (4.2%) , hydrothorax in 6 cases (12.8%), calyceal segmental aneurysm in 1 case (2.1%) and prolonged urinary leakage in 2 cases (4.2%).

There were significant difference between pre and postoperative hemoglobin and haematocrite.

Supracostal PCNL above 12 rip give good access and clearance rate for staghorn stones multiple tracts maybe added to morbidit chest complication can be managed easily with conservative measures the morbidity can be reduced to good extent if one adhders to the basic principles of puncturing in full expiration sufficiently laterally and using working sheath during nephroscopy and draining nephrostomy tube after the procedure. Chest x ray immediately after surgery is mandatory and nephrostogram should be taken routinely to determine the integratey of the pelvicalceal system before removing nephrostomy tube