INTRODUCTION

Despite newer advances in stone surgery including extracorporeal shockwave lithotripsy (ESWL) and flexible ureteroscopy (URS) with laser lithotripsy, the percutaneous approach is still the optimal method for minimally invasive upper tract stone surgery ***(Denby et al., 2007).***

Percutaneous nephrolithotripsy (PCNL) is considered the treatment of choice for large kidney calculi based on superior outcomes and accepted low morbidity . Recent advances in instrumentations and techniques have improved the factors , including stone free rates , increased treatment efficiency and decreased morbidity ,therefore favoring PCNL. ***(Siavash Falahatkar et al; 2008).***

Since the introduction of percutaneous nephrolithotomy (PCNL) in 1976, developing technology and techniques have made it possible to replace open surgery as the treatment of choice for upper urinary tract calculi. ***(Liao-Yuan Li et al; 2010).***

Inspite of the complications of PCNL as bleeding, renal vein rupture, ureteral or pelvic perforation, deoudenal perforation and sepsis. PCNL still the standard therapy of large urinary tract stones. ***(Siavash Falahatkar et al; 2009).***

Recently, some experts have modified the standard PCNL technique in an attempt to decrease morbidity and complications. In 1997, Jackman et al,. initially described the technique of “mini-PCNL” (MPCNL) in children, using a 13F outer-diameter ureteroscopy sheath and trocar set. Lahme et al., also reported in 2001 their experience of

MPCNL with a 12F rigid nephroscope and 15F Amplatz sheath to treat 1-2-cm renal calculi. . ***(Liao-Yuan Li et al; 2010).***

From a technical point, applying a smaller-size percutaneous tract than standard PCNL, might have the potential advantages of decreased bleeding and trauma to renal parenchyma. ***(Liao-Yuan Li et al; 2010).***

In recent years, mini- percutaneous nephrolithotomy (mini PCNL) has gained popularity because of its reduced invasiveness through decrease intra-pelvic pressure during irrigation to reduce possibility of extravasation into retroperitoneal space, acute absorption syndrome and septicemia. ***(Udo Negele et al; 2007).***