INTRODUCTION

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 ***(Falahatkar et al; 2008).***

Since **Fernstorm** and **Johansson** first described the procedure in **1976**, PCNL has undergone many innovations. A PCNL in the prone position is accepted globally because of its familiarity, excellent understanding of the anatomy in this position, and reduced risk of visceral complications ***(Manohar et al; 2007).***

The prone position has some disadvantages:

1- It compromises blood circulation and ventilation, especially in obese patients (limitation in respiratory movements) ***(kerble et al., 1994 and Shoma et al., 2002).***

2- General anesthesia and ureteral catheterization are usually performed in the supine position, and only after this step, is the patient turned into the prone position for renal manipulation. This is obviously translated into increased operative time ***(De Sio et al; 2008)***

3- If the procedure is carried out under spinal or epidural anesthesia, conversion to general anesthesia with endotracheal intubation will represent a good challenge to the anesthetist ***(Shoma et al., 2002 and Rana et al., 2008).***

4- Some times it is impossible for the patient to lie prone because of body habitus such as ankylosing spondylitis, severe lordosis or kyphosis or hip or lower limb contractures ***(De Sio et al., 2008).***

5- Operating on a patient in the prone position, the surgical team stands in close proximity to the patient, making them relatively more vulnerable to radiation exposure. Whereas in the supine position, the bodies and limbs of the surgical team remain outside the field of fluoroscope ***(Rana et al., 2008).***

6- Prone position is considered as risk factor for vision loss because it causes increase intra-ocular pressure which decreases perfusion pressure to the optic nerve and blindness as the result of central retinal artery occlusion , so The forehead should be placed on a padded headrest to avoid pressure on the eyeball ***(Falahatkar et al; 2008).***

7- The prone position is especially dangerous in patients with severe cervical spondylosis, and care of pressure area is problematic ***(Shoma et al., 2002).***

The supine position has many advantages: reduced cardio circulatory or ventilatory dysfunction, better tolerance when the operation is performed under local anesthesia, and less time needed because patients do not have to be turned after induction of general anesthesia and positioning of the ureteral catheter. Moreover, the surgeon can comfortably sit during the operation and X- ray exposure is reduced because puncture and dilatation of the nephrostomy tract are quite perpendicular to the body and the operating hands are outside the fluoroscopic field ***(Marco et al., 2008).***

Fluid absorption during PCNL may be clinically significant in patients with compromised cardio respiratory or renal status. In the supine position, the Amplatz sheath is oriented downward, maintaining a low pressure in the renal pelvis and reducing the risk of fluid absorption and, at the same time, facilitating spontaneous stone fragment evacuation. Unfortunately, this collapses the pelvicalyceal cavity, reducing vision but limiting stone dislocation to the calyces or the ureter ***(Kukreja et al., 2002)***.

Finally, by rotating the legs into the lithotomy position, combined antegrade and retrograde procedures can effectively be performed. This represents the main advantages of this procedure because it combines the benefits of percutaneous and ureteroscopic intrarenal surgery in selected cases of contemporary treatment of renal and ureteral stones ***(Ng MT et al., 2004, Manohar et al., 2007, and Neto et al., 2007)***

PCNL in the supine position has also certain disadvantages that make it a disputable alternative. The first problem with the supine position is that there is no enough space for a third tract if needed ***(Zhou et al., 2008)***. Also, access to the anterior and upper calyces is more difficult, as the angle between the plane of the operation table and the anterior calyces is smaller than that in other positions, it is difficult to access calculi in the anterior calyces ***(Shoma et al; 2002, De Sio et al; 2008 and Zhou et al; 2008)***. Approaching the upper calyx, especially if placed excessively medially is more difficult in supine position, as well. ***(Ng MT et al; 2004 and Rana et al; 2008)*** .This problem is more pronounced on the left side. Of other drawbacks of PCNL in the supine position is the mobility of the kidneys which is more than that in the prone position. Therefore, the kidneys are easy to move anteromedially

during tract dilatation in the supine position***. (Shoma et al; 2002, Rana et al; 2008 and Zhou X et al; 2008)***.