

## **Endoscopic management of upper and lower ureteric stones using holmium laser or pneumatic lithotripsy.**

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### **Abstract :**

#### **Objectives:**

To evaluate the efficacy of endoscopic management of ureter stones using semirigid ureterorenoscope with pneumatic or laser lithotripsy.

#### **Materials and methods:**

The study included 184 patients with a mean age of ( $44 \pm 13.9$  years) (male 73.9%, female 26.1%), who operated in 4 different hospitals in Nablus -West Bank, between 2013- January and 2015- July. The first group included 92 patients (mean age:  $45 \pm 15$  years) from An-Najah University Hospital where pneumatic energy was used. The second group included 92 patients (mean age  $42 \pm 12.4$  years) from other hospitals in Nablus where laser energy was used. The mean stone volumes were  $8.8 \pm 2.6$  mm and  $9 \pm 2.4$  mm for the first and second group respectively ( $p=0.28$ ). The medical records of all patients were retrospectively reviewed in terms of (age, sex, stone volume, stone location, success rate and complications). Comparison between both groups regarding success rate, complication rate was investigated. Volume was calculated by multiplying the maximum diameter (length) with the next maximum width dimension perpendicular to the maximum diameters as seen on the plain abdominal X-ray. The success rate was defined as a complete extraction of the stone as a unit or its fragments. Any patient with fragment less than 5mm in the post operative kidney ureter bladder (KUB) was considered as stone free.

#### **Results:**

The overall success rate was 90%; there was no difference of success rate in both groups using either laser or pneumatic (90% versus 91%,  $p = 0.8$ ). There was no difference in the success rate in the management of upper and lower ureter stones (90% and 93%,  $p = 0.76$ ). There were no intra operative complications. We had 8 patients (4.3%) with postoperative complications in term of urinary tract infection or urosepsis, and they were managed with appropriate medical therapy.

#### **Conclusion:**

Endoscopic management for ureter stones is a safe and a feasible treatment option for upper and lower stones regardless to the kind of energy used. Location of the stone seems not to have important impact on the success rate of the endoscopic management. Further studies with larger number of patients should be included to confirm our findings.