

3rd International Conference on Gastroenterology & Urology

July 28-30, 2014 DoubleTree by Hilton Hotel San Francisco Airport, USA

Upper urinary tract urodynamics in patients before and after percutaneous nephrolitholapaxy

Irina Mudraya

Ministry of Health of the Russian Federation, Russia

Introduction: The disorders in upper urinary tract urodynamics caused by ureter impaired contractile function may be supplementary to obstruction in patients with renal stones. Currently, clinical data on ureter function is limited to small number of clinical observations.

Aim: The aim of this study is to evaluate the features of ureteral peristalsis and renal pelvis pressure in patients before and after percutaneous nephrolitholapaxy.

Materials and methods: The study involved 20 patients with kidney stones 4.3 ± 0.2 cm in size, which were removed by percutaneous nephrolitholapaxy. It was assessed the state of peristalsis in the upper, middle and lower ureter segments immediately prior to percutaneous nephrolitholapaxy by multichannel impedance ureterography in 12 patients. Pressure in the renal pelvis was measured by electric pressure gauge Capto SP 844 coupled to a nephrostomy in 18 patients 2-3 days after stones removal and nephrostomy drainage setting. Data was registered on a personal computer.

Results: Ureteral peristalsis in patients with renal stones is characterized by strong contractions (amplitude 1.61 ± 0.16 and 1.78 ± 0.21 ohms) of the upper and middle thirds, having mostly (60 %) retrograde (anastaltic) direction, and less pronounced (amplitude of 0.70 ± 0.13 ohm) and mostly (78%) simultaneous contractile waves in the lower part. At the same time the tone of ureteral wall in the lower cystoid was higher (8.06 ± 0.69 relative units) than in the upper and middle ureter segments (3.66 ± 0.37 and 3.53 ± 0.48 relative units). In patients with newly diagnosed kidney stones the ureter contractions amplitude proved almost twice as big as in patients who had undergone surgery due to urolithiasis. Among patients with remaining in the cups post percutaneous nephrolitholapaxy residual stones, a trend towards higher values of the ureter contractions amplitude was detected as compared to patients without residual fragments. Upper urinary tract urodynamics disorders after percutaneous nephrolitholapaxy were manifested by a high pressure in the renal pelvis (20.1 ± 0.7 , range 9.5 - 31.3 cm water column) on the next day after stone removal with daily diuresis per nephrostomy tube 0.81 ± 0.03 liters. In addition, the higher by 45, 32 and 95% ureter contractions were observed in the patients (n=12) with higher pressure (23.8 ± 0.8 cm H₂O) in comparison to the group of patients (n=6) whose pressure averaged at 12.8 ± 0.6 cm H₂O. Thus, surgical trauma of kidney parenchyma could be the reason of the elevated intrapelvic pressure, and the ureteral peristaltic function could exert influence on the value of renal pelvis pressure.

Conclusion: These studies have demonstrated significant violation of ureteral peristalsis in patients with kidney stones and high pelvis pressure on the next to percutaneous nephrolitholapaxy day, thus indicating an urodynamics functional disorder. It is assumed that the nature of these disorders is stipulated by the upper urinary tract smooth muscle reflex reactions in response to stone irritation of a kidney, which is an important reflexogenic area.

mis51ser@yahoo.com