

Robotic Flexible Ureteroscopy Versus Classic Flexible Ureteroscopy in Renal Stones: the Initial Romanian Experience

Petrișor Geavlete^{1,4}, Remzi Saglam², Dragoș Georgescu^{1,4}, Răzvan Muțescu^{1,4}, Valentin Iordache¹, Ahmet Sinan Kabakci³, Cosmin Ene⁴, Bogdan Geavlete^{1,4}

¹Sanador Hospital, Bucharest, Romania

²Department of Urology, Medicana International Hospital, Ankara, Turkey

³Department of Bioengineering, Hacettepe University, Ankara, Turkey

⁴Department of Urology "St. John" Clinical Hospital of Emergency, Bucharest, Romania

Abstract

Introduction: Roboflex Avicenna represents a new device for flexible ureteroscopy, able to provide an efficient lithotripsy for renal calculi, Bucharest being the fourth place in the world where such a device is already in use.

Material and methods: The study was prospective and included a number of 132 patients equally randomized which underwent standard flexible ureteroscopy and robotic flexible ureteroscopy for renal calculi between July and February 2016. All the procedures were performed with aStorz XC flexible ureteroscope in association with Avicenna Roboflex. Stone fragmentation was performed using a Dornier Medilas 20H, Holmium Laser of 20 watt power and 2.1 mm wavelength.

Results: The mean age was 48 years (range 26-77 years) and the mean stone size was 2.1 cm (range 1.1-3.6 cm) for the first group (FURS), while for the second one (robotic FURS) the mean age was 51 years (range 25-74 years) and the mean stone size was 2.4 cm (range 1.0-3.7 cm). The fragmentation time of the stones was better for robotic FURS (37 min versus 39 min). After 3 months, the stone free rate was 89.4% versus 92.4%, that representing a performance of the robotic technique over the classical one. In some cases were noticed residual fragments smaller than 3 mm, in 13.6% of patients who underwent FURS, respectively in 12.1% of robotic FURS' cases.

Conclusions: The robotic treatment of kidney stones represents a comparative alternative to flexible ureteroscopy, with overall similar outcomes.

Key words: robotic flexible ureteroscopy, renal calculi, holmium laser