ESU course in Tunisia: Flexible URS and RIRS

Conclusions in instrumentation, techniques, and indications

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The European School of Urology (ESU) course "Flexible ureterorenoscopy (URS) and retrograde intrarenal surgery (RIRS): Instrumentation, technique, tips, tricks and indications" took place during the congress of the Tunisian Urological Association on 19 October 2023. Around 70 urologists were in attendance.

The Course Chair, Prof. Olivier Traxer (FR) joined from Paris via Zoom and his co-faculty member, Dr. Amelia Pietropaolo (GB) attended in person.

After my welcome message, Dr. Pietropaolo talked about the role of the ESU in urological education and then discussed the instrumentation in RIRS. She showed the importance of the safety guidewire; different retrieval devices; various size access sheaths; new generation suction devices; and the use of varied stents to prevent bladder symptoms (e.g. JFil and silicone stent). Dr. Pietropaolo also explained the use of diverse irrigation devices and the importance of maintaining an intrarenal pressure less than 40 cm of water.

Prof. Traxer expounded on the use of different ureteroscopes. Here are some of his key takeaways:

- The urologist has to know the anatomy of the ureters and the pelvicalyceal system for a better orientation during ureteroscopy.
- The ureteropelvic junction is the narrowest and most fragile zone in the ureter, so the urologist should manipulate the instruments delicately.
- The digital ureteroscopes ensure better visibility but fibreoptic ones offer a better flexibility in the tip. This allows a better deflection in the narrow and difficult complex anatomy of the pelvicalyceal system.
- There are more than 20 kinds of single-use flexible ureteroscopes. The urologist should focus not only on visibility but also on resistance.
- The miniaturisation and the development of suction devices will offer new perspectives in RIRS.

Prof. Traxer also explained the differences between the holmium YAG and Thulium (Tm) fibre lasers. He stated that the latter offers better dusting, and less retropulsion with shorter treatment time. However, use in the high-frequency setting by less experienced hands may present a risk of mucosal damage to the ureter.

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There is no standard laser preset but the parameters should be set in real time during the treatment of the stone. For dusting, it was advised to use long pulse and low energy, while short pulse and high energy for fragmentation. The frequency is a parameter to regulate the speed of the procedure only.

Furthermore, the power used is of utmost importance; it should be less than 12-15 watts in the ureter and 20-25 in the kidney. Always remember the formula:
power(watts)= energy(joules) x frequency(hertz)

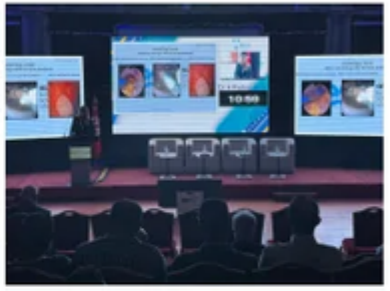
To answer the question which laser to use, Prof. Traxer said there is no consensus but Tm fibre laser is preferable for RIRS and holmium laser for percutaneous nephrolithotomy (PCNL) since more fragmentation is needed than dusting in the percutaneous approach.

Following Prof. Traxer's presentations were Dr. Pietropaolo's which comprised recommendations from the EAU Guidelines on urolithiasis and the techniques in the treatment of tumours and strictures. About 35% of strictures are iatrogenic. Lesions of the ureteric mucosa were caused by high-powered laser. The access sheath and ureteroscope were the precursor of stricture and this was increased when the stone was impacted for a long time. She underscored to never force handles, manipulate instruments delicately, and laser the stone from the centre to the periphery with low energy.

Afterwards, Prof. Traxer's presentation focused on techniques, tips and tricks in the treatment of stones. He emphasised the following:

- Always use X-ray but reduce exposure.
- Use a stiff wire for access. It is highly recommended to use a safety guidewire. An angle tip catheter and angle tip wire can be used to orient passage in unusual ureteric orifices position.
- When a stone is blocked in a basket, it can be fragmented inside and then disengaged.
- Understand the difference between the diameter and the volume to evaluate the stone size. Stones bigger than 2 cm should be treated by percutaneous approach.

Dr. Pietropaolo and the local faculty members Dr. Wassim Smaoui (TN) and Prof. Walid Zakhama presented the clinical case of an impacted 2-cm stone in the lumbar ureter. The patient had previous sepsis and was treated with antibiotics and percutaneous drainage tube.



Participants were all ears during the ESU course

Dr. Smaoui preferred attempting RIRS and Prof. Olivier Traxer proposed to try laser in the centre of the stone to create an access for a guide wire. In case of difficulty, the urologist should treat from above by percutaneous access since the inflammation around the stone is much lower than from below.

As a lithomist, Prof. Zakhama preferred the laparoscopic treatment to avoid risky endoscopic treatment and conversion in case of failure.

Dr. Pietropaolo successfully treated the patient by double access retrograde and antegrade after a failure of passing a guide wire from below. This combined access offered more visibility and safety.

We would like to thank Prof. Traxer and Dr. Pietropaolo for their kindness, patience, and valuable contributions. We would like to also express our gratitude to the ESU and the European Association of urology.

Check out the rest of the ESU courses and the take-home messages from experts, please click here.