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UROLITHIASIS

## Virtual guidance of urologic surgery

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Since 1877, when Max Nitze performed his first cystoscopy, urology has witnessed a tremendous evolution of surgical techniques. Currently, the entire spectrum of urological procedures may be accomplished with minimally invasive ways, them being laparoscopic, single port or robot-assisted. Further refinements focus on accurate assessments of the disease location so the treatment may be targeted, less morbid, yet effective. In this issue of CEJU one of the new methods of ureteral stone positioning in the operating field is presented [1]. It is based upon data derived from a CT scan, and with the help of a particular software, virtually placed within the body of the patient preoperatively so that the surgery is directed and free from any deviations. There were 17 patients with upper ureteral stones from 7 to 14 mm in diameter treated either by open (3–4 cm muscle-splitting incision), or retroperitoneoscopic approach with gas insufflation (5 cases). The mean duration of surgery was 39.5 minutes, although within an uneventful postoperative period the mean hospitalization time amounted to 5.5 days. No cause of the management choice was presented, nor was any patient managed with the conservative (without reconstruction) way. As recommended by EAU Guidelines, surgery is not the primary option for ureteral stone removal, however it is not neglected. In case of impacted large stones, the endoscopic, mainly retro-

peritoneal approach is considered [2]. According to other series of laparoscopic ureterolithotomy, without aforementioned technical assistance the mean duration of surgery is greater (median 120 minutes), but the hospitalization duration is shorter. When the learning curve is overcome, the usefulness of preoperative stone location assessment by CT scan seems adequate, and additional technical support might be unnecessary. I agree with authors that the computer analysis of the disease location may be a valuable tool for residents during getting of experience. In usual day practice with ureteral stones, the experienced urologist needs no examination but plain abdominal X-ray done just before surgery to know where to operate. However, there are many fields in urology where the precise evaluation of the lesion location is of utmost importance. The era of focal, ablative therapies of renal and prostate tumors is arising. The exact localization of the area to be abolished and assessment of its accuracy is needed. One of the simplest methods utilized to virtually visualize the tumor is combined MRI and ultrasound imaging used further on during renal surgery guidance [3]. I am certain, that in the nearest future we will be able to effectively ablate the tumor percutaneously, so that the lesion deemed to be significant will be directly targeted with minimum healthy tissue margin.

### References

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