**URO-TECHNOLOGY JOURNAL: PAST AND FUTURE IN UROLOGY**

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In the last decade, we have assisted to an improving of new technologies in the medical area and the development of a tailored, patient-specific medical and surgical approach is becoming object of intense research (1)

The future of urology remains extremely exciting. Miniaturization, optical technology and robotics constitute the future of surgery.

The era of the Da Vinci system® (Intuitive Surgical) as one competitor for robotic surgery has been recently interrupted by the introduction of 2 new robots such as HUGO™ (Medtronic) and VERSIUS (CMR surgical).

The end of this monopoly can represent a chance for new challenges for developing new technologies in robotic surgery which could further reduce surgical trauma and improve surgical outcomes.

At the same time, image-fusion technologies and image-augmented navigation have been developed in several fields and have tremendous potential for medical applications. These technologies have the potential to fully integrate preoperative molecular images in the operating room. Previously acquired images, such as CT and MRI scans, can be formatted into 3D image sets and linked to sensors that track the position of surgical instrumentation, in real-time, relative to the image set (2,3)

By superimposing these images on a video-assisted view of the operative field (i.e. during laparoscopic or robotic procedures), or by co-registering these images with other imaging modalities and fusing them into one augmented compound image, it is possible to improve the surgeon’s ability to localize anatomic boundaries.

Providing AR information in the endoscopic view holds great promise for surgeons and represents a great challenge for AR researchers. This helps improve surgical accuracy. (2)

Major progress in robotic and imaging technologies for minimally invasive surgery for urogenital pathologies has set a new standard of treatment: precision surgery.

In the field of imaging, interest has grown in the use of three dimensional (3D) virtual reconstruction of 2D cross-sectional imaging to give the surgeon a better understanding of the surgical anatomy of each specific case to be operated (4).

A multidisciplinary approach is necessary to gain the best results, thus including radiologists (that provide high-quality images with < 3 mm slices), urologists, and bioengineers. Once the 3D virtual models are obtained, they can be applied in three different settings: (1) cognitive procedures;

(2) printing and application to cognitive procedures; and (3) augmented reality procedures (4).

The 3D models can be virtual or printed and can help the surgeon in surgical planning offering a treatment specifically drawn for each patient, as well as in physician education and training, and patient counselling.

Moreover, integration of robotic platforms with the 3D models and the possibility of performing augmented reality surgeries increase the surgeon’s confidence with the pathology, with potential

benefits in precision and tailoring of the procedures.

As occurred in the therapy of oncologic diseases, new technologies have been also proposed for the treatment of urologic benign diseases.

Some years ago, it could be considered imaginative the idea to treat benign prostate hyperplasia in an outpatient setting.

The introduction of new surgical devices such as REZUM, UROLIFT, I-TIND has turned this idea into reality, reducing hospitalization, complications’ rate, convalescence and improving patients’ quality of life (5)

URO-TECHNOLOGY JOURNAL (UTJ) is a new open access, peer-reviewed, international journal which emphasizes the basic and clinical research relevant to all urologic diseases, the novel technological developments in the field of urology and their application in the clinical practice.

The diagnosis, therapy, epidemiology, prevention, biomarkers, pathology, surgical innovations (such as artificial intelligence, augmented reality, mini-invasive surgery) in urology

are included but not limited to the scope of this journal.

The aim of this journal is represented by a wide range of urological issues such as oncology, functional urology, reconstructive urology, andrology, sexual medicine, laparoscopy, robotic surgery, endourology and surgical technologies.

All Editorial Board of UTJ, including renowned urologists in the field of new technologies, will engage to guarantee to the readers to be always updated with new surgical innovations in urology but also supplying an accurate analysis of urologic topics which could help our daily activity.

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