

**Editorial**

Telesurgery in Urology

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As technological progress introduced novel robotic platforms and high-speed networks, the concept of Telesurgery became a firm reality, while Fifth Generation (5G) technology solved latency and transmission concerns. However, with these advancements, ethical considerations and regulatory frameworks should underline the importance of transparency and patient safety with responsible innovation in the field [1]. Reports indicated that there were no delays or problems with the network connection between the centers. The procedure was performed in 60 minutes, with no intra- or postoperative complications. The average estimated blood loss was 100 mL. The patients were ambulating soon after anesthesia recovery. Final pathology described negative surgical margins and no lymph node involvement. The patients were continent soon after catheter removal (7 days) [2]. Advances in fifth-generation (5G) mobile telecommunication technology helped in the rapid evolution of telesurgery. Dual-console telesurgery performed with the KD-SR-01 system using 5G and wired networks was shown to be feasible and safe in an animal experiment and clinical study [3]. Robotic telesurgery will offer an example of a shift in healthcare and expand the telemedicine area. It brings extraordinary opportunities as well as crucial challenges. It is clear that the 5G communication system will play a critical role in tackling challenges. To realize telesurgery and even make it commercialized, it needs not only to overcome the technical challenges but also to be supported by a sustainable business model and legal regulations. Foreseeing the roadmap of telesurgery development and its wide adoption, it is expected to be first applied in telementoring scenarios using the dual consoles, namely, the experienced surgeon remotely conducts the most complicated tasks in the surgery. Such application scenarios have a good business case as those skills are not commonly available; furthermore, it takes a shorter time, consumes less communication resource, and is cost effective [4].

Dr. Ferreira and colleagues from Brazil presented a nice review about telesurgery in Urology. He reviewed literature aiming for the surgical success rate as a primary objective. Secondly, he presented patients' outcomes and the network system. He concluded that despite the limitations, there was evidence demonstrating that robotic surgery in the genitourinary

system is safe and feasible; however, it is a subject that must be well discussed, and further studies must be carried out [5]. Telemedicine has the potential to break geographical limitations of medical care. It is an exciting and promising field with boundless opportunities. The implementation of telemedical practices can greatly impact the quality of patient care; in addition, it serves as a tool for enhancing the training of resident physicians and combating pandemic-related confinements. There are still several barriers impeding a full integration of telemedicine, such as cost, ethical considerations, security, bandwidth, latency, and licensure difficulties. Nevertheless, the future of telemedicine, specifically telementoring and telesurgery, promises several improvements to tackle those barriers [6]. Artificial Intelligence (AI) has emerged as an important tool in surgery, particularly in telesurgery and telementoring. However, its potential to enhance data transmission efficiency and reliability in these fields remains unclear. There is a need for collaborative research to drive the evolution of telesurgery and telementoring in modern robotic surgery [7]. Telemedicine constitutes a quite appealing alternative for the foreseeable future. In urology, telemedicine confers many potential advantages, such as fewer patient contacts, lower infection rates among the health care staff, patient convenience, and a reduction in transportation-related emissions. The acceptance by the patients and the potential relief for physicians and staff are high. Accordingly, the economic benefits are successfully reflected in the health care system. Telemedicine, in the end, has its own limitations, requiring prudent implementation through the protection of personal health records and the guarantee of professional guidelines [8].

The diffusion of coronavirus disease 2019 (COVID-19) infections has recently increased the interest in telehealth, which is the adoption of telecommunication to deliver any health care activity. The available literature indicates that telemedicine has been adopted successfully in selected patients with several common clinical urological conditions, including prostate cancer, uncomplicated urinary stones, uncomplicated urinary infections, urinary incontinence, or pelvic organ prolapse. Likely, the COVID-19 pandemic will give a significant boost to the use of telemedicine, but more robust data on long-term efficacy, safety,

and costs are necessary [9]. To conclude, our role as urologists is to carefully define the telesurgery position in everyday urological practice, familiarize it with all the emerging technologies, and provide tools for its optimal operation

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