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SUCCESS CASE

Robotic Surgery applied to Urology at the First Surgical and Uro-Oncological Conference Alcazaba, organized by the Torrecárdenas University Hospital in Almería, Spain

User

Urology Department of the Hospital Universitario Torrecárcenas de Almería, Spain

The Torrecárdenas University Hospital in Almería is a healthcare infrastructure managed by the Andalusian Health Service (SAS), which belongs to the Ministry of Health and Consumer Affairs of the Regional Government of Andalusia.
It is made up of five centers: Torrecárdenas General Hospital, Maternity and Children's Hospital, El Toyo High Resolution Hospital (HAR), Bola Azul Peripheral Specialties Center (CPE) and Nicolás Salmerón High Resolution Center (CARE).
Almeria has a population of 731,792 inhabitants and is the reference hospital in the province for some pathologies. It serves a population in its area of influence of close to 338,000 inhabitants.
It has 836 beds, 17 operating rooms and 115 consulting rooms.
It has more than 4,000 professionals, of which around 75% are health professionals.
The Urology Service, directed by its Chief of Service, Dr. José Ignacio Abad Vivas-Pérez, preferably uses minimally invasive surgical procedures, promoting Major Outpatient Surgery and Short Stay Surgery. The Urology Department performs more than 100 laparoscopic surgeries annually assisted by the Da Vinci robot.

Objetive

Remote education and training of professionals.
Management of images generated with robotic surgery for local or remote viewing.

One of the objectives of the Hospital is to carry out training for the development, qualification and professional training of its own staff and third parties.
Annually, more than 1,800 professionals are trained locally, but there is also a need to train external health professionals who can be trained with the proven experience of techniques, in which the Hospital Universitario Torrecárdenas is a reference center.
The Urology Service includes the following areas: Andrology, Urolithiasis, Endourology, Oncology, Female Functional Urology and Urodynamics, Uropediatrics, Renal Transplant and General Urology. The use of robotic surgery is preferably applied in: radical prostatectomy, partial nephrectomy, ureteral reimplantation and pyeloplasty.
The Urology Department of the Hospital Universitario Torrecárdenas, in collaboration with the Spanish Association of Urology (AEU) and the Andalusian Association of Urology (AAU) organized on 23 and 24 March 2023 the **First Surgical and Uro-Oncological Conference Alcazaba**, with the aim of providing on-site training and education and also distance e-learning from other centers, with interactive video collaboration between participants, for their learning and personal and professional development of minimally invasive surgical procedures based on robotic surgery.

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Solution

Da Vinci Robotic Surgery integration solution, which allows the management, teaching and interactive support of collaboration between professionals, equipped with videoconferencing in private virtual meeting rooms for mentoring.

Azinsol's integration solution "MVM Operating Room Video Manager" has been applied to laparoscopic surgery based on the Da Vinci robot, for the capture, distribution and management of images produced in the surgical procedure, enhanced with the "MVM Live Collaboration" module that allows interactive support by combining video, audio, images and relevant contextual information.
The MVM solution has been integrated with Pexip's videoconferencing platform equipped with Virtual Meeting Rooms (VMR) with managed hosting of nodes on its own servers, which guarantee both the security and privacy of the meeting and the image, video and audio quality required for clinical practice. The Pexip Infinity platform allows the generation of customized VMR rooms for each event, enabling the mentor to connect to a secure web and intervene through interactive tools on the images generated by the robotic surgery, combining diagnostic quality image and excellent bidirectional communication.
Critical videoconferences, as is the case of health content based on the Azinsol + Pexip solution, thus comply with the legal obligations of security and integrity required in hospital information systems.

At the 1st Alcazaba Surgical and Uro-Oncological Conference, different non-invasive surgical procedures applied to urology were demonstrated using robotic surgery.

At the **1st Alcazaba Surgical and Uro-Oncological Conference**, urological robotic surgery techniques were shown live, including prostatectomy and cystectomy surgical sessions.
The teaching team of the Conference directed by Dr. Jose Ignacio Abad Vivas-Perez, has been coordinated by Dr. Jose Ignacio Abad, with the scientific collaboration of Dr. Juan Moreno and Dr. Jose Luis Alvarez Osorio.
It is worth mentioning the following laparoscopic surgeries performed live based on the Da Vinci robot: "Robotic radical prostatectomy with extended lymphadenectomy" directed by Dr. Manuel Ruibal and Dr. José Miguel Molina.
"Robotic radical cystectomy, pelvic lymphadenectomy and bypass" directed by Dr. Joan Palau and Dr. Josep Mª Gaya.

Result

The combination of physical, logical and communication elements facilitates medical telecollaboration.

The solution used in the Conference is composed of physical elements that meet the security and environmental requirements (processor, devices for capturing images produced by the DaVinci robot and wireless audio), logical elements that allow integrated and collaborative management among professionals, and telecommunication elements that facilitate interactivity through videoconferencing and image sharing tools to and from the operating room with the expert professional or remote mentor.

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Advantages

Laparoscopic surgery using the Da Vinci robot favors a better and faster recovery of patients.
The MVM system allows interactive remote teaching with other professionals.

Robotic surgery makes up for the limitations of conventional laparoscopic surgery, making surgical interventions more comfortable and precise, especially the most complex and difficult to access surgeries, with smaller scars, less risk of infection and blood loss. Greater surgical precision, a less invasive procedure, elimination of the surgeon's natural hand tremor and better visualization of the anatomical field being operated on are the main advantages that the Da Vinci robot brings to surgeries performed with this advanced equipment.
The MVM system allows interactive remote teaching of other professionals and also the facility of video collaboration to support a remote robotic surgery intervention, providing it with specific client software that includes audio and video intercommunication tools.

Opinion

"The system is easy to use and intuitive"
"Robotic surgery allows for maximum precision surgery with minimally invasive surgical procedures"
"The system is easy to use and intuitive"
"We are considering extending the solution to other teaching activities and video collaboration between professionals"

"We are very satisfied. It has been transmitted between the operating room and the conference room with direct interaction and in real time, with the possibility of remote participation of other professionals. The system used is easy to use and intuitive."
"Robotic surgery allows for maximum precision surgery with minimally invasive surgical interventions, which entail less pain and complications for the patient, reduce the average post-operative stay and increase patient safety."
"This conference is a further step in the development of the Hospital's Robotic Surgery Program, which has been running for 3 years now. Having seen the success of the experience, we plan to expand its use for interactive training and from the operating room with medical students from the University of Almeria and other teaching activities and video collaboration between professionals".

Dr. José Ignacio Abad Vivas-Pérez
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