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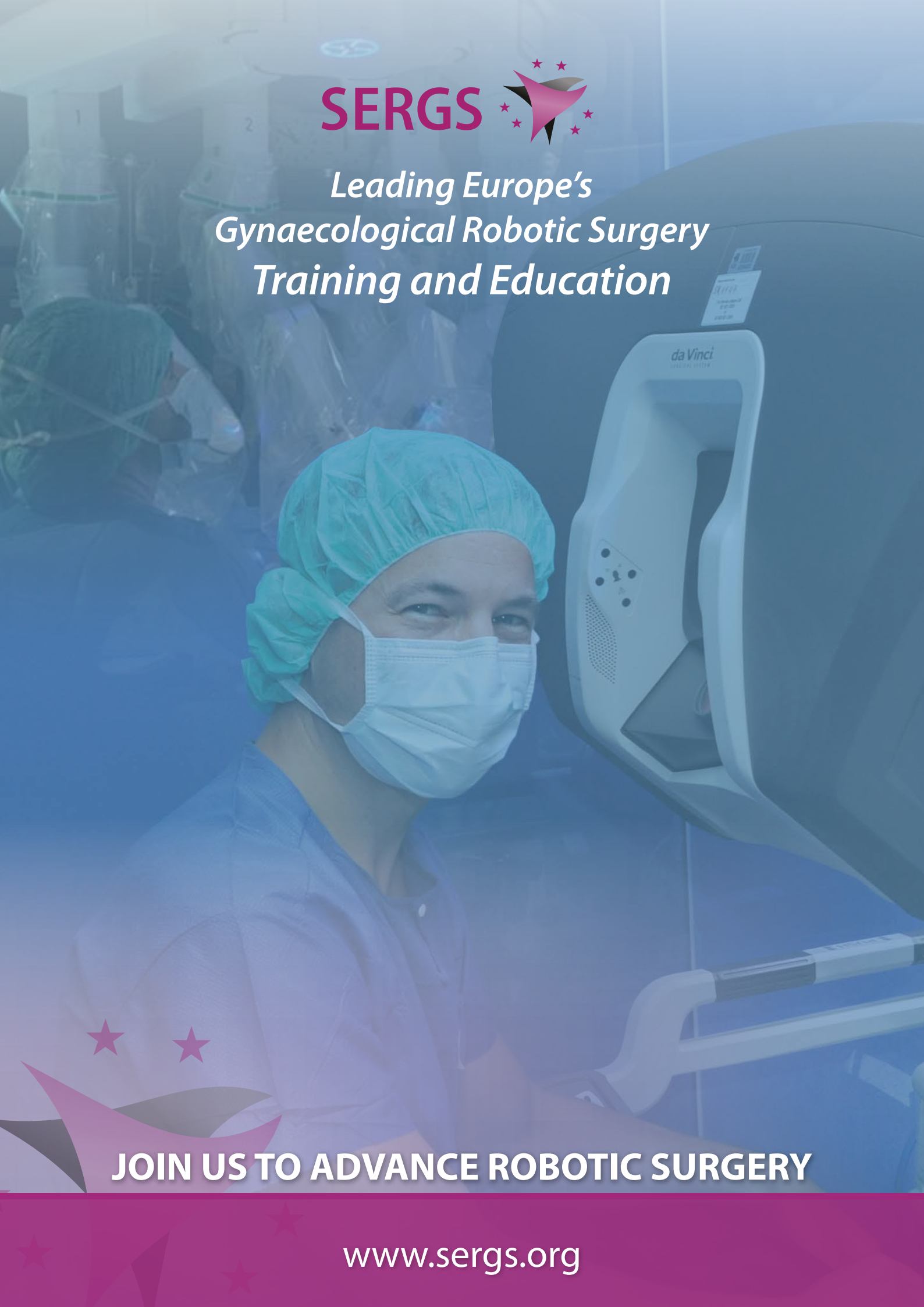
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Message from the Editor-in-Chief

Greetings Colleagues,

'The Console' is the official journal/newsletter of the Society of European Robotic Gynaecological Surgery (SERGS). It is published biannually, and we would like to thank you for embracing our efforts. Once again, **'The Console' is informing SERGS members about our activities, sharing ideas in the new era of robotic gynaecology and supporting collaboration, friendship and fellowship in robotic gynaecological surgery. From this corner, I am delighted to announce the publication of the fourth issue of 'The Console'!**

Our mentor, Philippe Van Trappen is sharing with us a time travel of engagement in robotic gynaecological surgery, including the past achievements, present reality and future goals from his personal experience in Belgium.

We would like to thank Martin Heubner, our vice president, for his interview. We had the opportunity to discuss why SERGS is launching an online patient portal. Dedication to robotic gynaecological surgery implies dedication to our patients, providing them with valuable information about our field.

Once again, we would like to congratulate Pluvio Coronado and the Spanish local committee who worked in collaboration with the SERGS council to develop a dynamic and engaging programme for the 16th Annual SERGS Meeting in Madrid. The meeting brought together leading global experts in robotic surgery, creating a stimulating and immersive experience. Pluvio is sharing with us the meeting highlights, including the accreditation course, live surgical demonstrations, the 'Face-to-Face with Robotic Experts' interactive discussions, national and YEARS sessions, and Professor Magrina's keynote lecture.

I would also like to thank Andrea Giannini, Sergi Fernandez, Simone Bruni, and Tommaso Simoncini, all of whom we worked with to assess the latest evidence regarding robotically assisted peritoneal mesometrial resection (PMMR) in endometrial cancer: feasibility, safety and oncological outcomes. The rationale of the technique, technical feasibility and current evidence are presented.

We also collaborated with Alexandros Fotiou and Sergi Fernandez to present an update of the current literature highlighted in our 'Top Articles at a Glance'.

In the 'YEARS' corner, Simone Bruni discusses the current reality of robotics training in Italy, presenting the projects and training/fellowship opportunities in his home country. The 'YEARS' corner is a dedicated space in 'The Console' for young and emerging surgeons and researchers in robotic surgery, and we encourage YEARS members to participate, present the current training reality in their home countries and work and exchange ideas with the experts.

We would like to thank Vasiliki Chatzirafail, the president of SHRGS (the Hellenic Robotic Gynaecologic Society, which consists of Greek and Cypriot members), for her interview. Vasiliki presents SHRGS' vision and how SERGS and SHRGS can collaborate to achieve the same goal: expanding robotic surgery in Europe and worldwide through education, webinars, meetings and research!

Moreover, José Ibacache Pinto disccuses in our 'Corner of the World' his robotic surgical journey and the current reality in Chile. Welcome aboard, José!

We are also pleased to include an article in our fourth issue about **the role of a surgical care practitioner in the gynaecology perioperative setting.** Marie Taniacao presents the need for subspecialized nurses to enhance the quality of patient care by providing both basic and advanced care in a high-risk, high-intensity theatre environment, working in collaboration with multi-professional and highly skilled theatre teams to improve efficiency, maintain professional relationships and ensure a safe and harmonious working theatre environment.

Lastly, we need to save the date for our next annual Congress. The 17th Annual SERGS Meeting will be held in Pisa, Italy on June 5–7, 2025. SERGS 2025 chair Vito Cela and the local organizing committee are working hard to organize our next remarkable event! We would like to invite all of you to join us in Pisa. In this issue, Vito discusses what to expect from an outstanding experience dedicated to advancements in robotic gynaecological surgery. At such a unique meeting, you can expect to hear from and meet with speakers who are among the world leaders in robotic gynaecological surgery, watch top surgeons perform live surgery, learn from the best in our field and network with other specialists. Let's also share ideas with professionals from other specialties with different perspectives and enrich our practice by learning more about topics related to our field. Register as soon as possible to secure your place!

Moreover, Innovative Single Port System is presented including how it broadens Intuitive's Portfolio.

I would also like to thank Lucie Lamlova for her invaluable help in dedicating her time to us from the secretariat point of view.

I hope you will enjoy reading the fourth issue of 'The Console'.

Christos Iavazzo
Editor-in-Chief, The Console

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Mentors Corner

Philippe Van Trappen

When was your first experience with the da Vinci robot?

My initial exposure to the da Vinci robotic system occurred in 2007 at IRCAD in Strasbourg, France. During this period, a representative from Intuitive Surgical invited me to participate in an intensive training course, as my institution had recently acquired a da Vinci S system, a three-arm robotic platform. At the time, my surgical experience was predominantly focused on open and laparoscopic surgery in gynaecological oncology.

For my first robotic procedures in 2007, I was mentored by Drs. Jan Persson and René Verheijen, both of whom were among the early pioneers of robotic surgery in Europe. That same year, I joined Dr. Persson in attending one of the first international robotic symposia, organized by the robotic pioneer Dr. John Boggess in North Carolina. This meeting inspired me to embark further on robotic surgery.

The initial experience with robotic surgery was both exhilarating and challenging, primarily because I was accustomed to performing advanced laparoscopic surgery, which allowed direct control at the operating table. One of the most significant differences in robotic surgery was the need to operate remotely from a console, which altered the dynamic of interaction with the surgical team in the operating room.

An early advantage that became apparent was the enhanced comfort for the surgeon at the console, which offered 3D visualization, along with superior instrument dexterity when compared to traditional laparoscopic instruments. However, the da Vinci S system, with its three robotic arms, posed challenges (particularly in complex gynaecological procedures) compared to the later da Vinci platforms (Si and X/Xi), which featured four robotic arms. Additionally, the da Vinci S system required manual focus adjustment via a pedal at the console, whereas the later systems automatically adjusted the camera focus.

Because of the initial difficulties of adjustment to the robotic console and the then-ongoing debate over the cost-effectiveness of robotic surgery, I continued to regularly perform laparoscopic surgery for complex benign and oncological cases during the early years of my experience with the da Vinci S system.

When did you realize that robotics is the future of surgery?

The introduction of the da Vinci Si platform, featuring four robotic arms, marked a significant advancement in robotic surgery. After its introduction, I recognized that this system allowed the surgeon to independently perform all surgical manoeuvres without the need for an assistant.

The steady control of the camera, combined with the fourth robotic arm, which could elevate or hold tissues, significantly enhanced the surgeon's autonomy during minimally invasive procedures.

This capability elevated the surgical experience by providing increased independence, particularly in complex cases where precise dissection was required, offering superior performance compared to traditional laparoscopic techniques.

Although robotic surgery initially lacked tactile feedback at the console, many robotic surgeons, including myself, developed a form of 'visual tactility' after an initial learning phase. The da Vinci Si system also facilitated easier four-quadrant surgery through dual docking, which proved beneficial in procedures such as para-aortic lymph node staging. With the subsequent introduction of the da Vinci Xi platform, four-quadrant surgery became even more accessible, as dual docking was no longer necessary.

Additionally, the da Vinci Xi system incorporated near-infrared (NIR) fluorescence imaging, which represented a significant advancement in robotic surgery. The application of indocyanine green (ICG) dye in conjunction with NIR fluorescence imaging enabled novel surgical applications. Initially, ICG was used to detect sentinel lymph nodes in endometrial and cervical cancers, later expanding to ovarian cancer in select cases. In complex surgeries for deep endometriosis, ICG proved to be particularly useful. It is now routinely employed in the resection of endometriosis near critical structures such as the ureter, bladder or rectal wall following retrograde injection of ICG into the ureters or in the bladder or rectum. Intravenous ICG administration also enhanced the visibility of neovascularization in endometriotic lesions on the peritoneal surface, aiding in more precise surgical resection.

Can you compare laparoscopic and robotic procedures? Which operations should be performed robotically?

Laparoscopic and robotic surgery are both minimally invasive procedures, but with robotic surgery offering several distinct advantages. One primary benefit of robotic surgery is the use of a console that provides 3D visualization and an ergonomic seated position for the surgeon, in contrast to the standing position required in laparoscopic surgery, where the surgeon often maintains a partially rotated posture while viewing a 2D screen.

Additionally, the robotic surgeon has the capability to independently control both the camera and all surgical instruments, whereas in laparoscopic surgery, a surgical trainee or fellow is typically required to hold the camera and manage a third instrument. The robotic system's wristed and more compact instruments also facilitate more precise dissection, particularly in delicate or complex anatomical areas. As a result, robotic surgery is increasingly preferred for a variety of gynaecological procedures. These include early-stage endometrial cancer with sentinel lymph node dissection, surgical staging procedures such as para-aortic lymph node dissection, complex benign gynaecological cases (including those involving large uteri), complex deep endometriosis surgery and uro-gynaecological interventions like sacrocolpopexy.

How has robotic gynaecology developed in your country over the years?

Between 2005 and 2010, the adoption of robotic surgery in Belgium was initially limited to only a few university hospitals and tertiary peripheral teaching hospitals, including AZ Sint-Jan in Bruges, where I work with the support of my director. Urologists were the primary surgeons performing the first robotic procedures, as was the case in many other European countries. The first robotic gynaecological surgeries were primarily focused on endometrial cancer, cervical cancer and large uteri.

From 2010 to 2015, the number of hospitals adopting the da Vinci robotic platform increased significantly. This expansion occurred across university hospitals, tertiary peripheral hospitals and smaller private hospitals. Despite this growth, there remains no formal centralization of robotic gynaecological expertise in Belgium, similar to many other European countries.

However, the establishment of the international training centre Orsi for robotic surgery in Belgium more than a decade ago, headed by urologist Prof. Alex Mottrie, has played a key role in fostering interest in robotic surgery. This initiative has attracted many young trainees in urology and gynaecology, and in recent years, the interest has extended to trainees in general surgery as well.

Can you relate your personal experience in robotic gynaecology?

2007-2009: da Vinci S platform: robotic hysterectomy with pelvic lymphadenectomy for endometrial cancer; robotic radical hysterectomy with pelvic lymphadenectomy for small volume early-stage cervical cancer; robotic hysterectomy for large uteri

2011-2017: da Vinci Si platform: robotic hysterectomy with pelvic lymphadenectomy for endometrial cancer;

robotic radical hysterectomy with pelvic lymphadenectomy for small volume early-stage cervical cancer; robotic hysterectomy for large uteri; robotic hysterectomy for adenomyosis; robotic para-aortic lymph node staging for locally advanced cervical cancer.

2016-2025: Proctor for Intuitive Surgical (da Vinci)

2018-2024: Faculty member for several Master Classes Robotic surgery in Gyn Onc at Orsi and IRCAD for Intuitive Surgical and SERGS-ESGO

2017-2024: da Vinci Xi platform: robotic hysterectomy with pelvic sentinel lymph node dissection for endometrial cancer; robotic radical hysterectomy with pelvic sentinel lymph node dissection for small volume early-stage cervical cancer; robotic hysterectomy for large uteri; robotic hysterectomy for adenomyosis; robotic para-aortic lymph node staging for locally advanced cervical cancer; robotic staging surgery for early-stage ovarian cancer; robotic interval debulking surgery in selected cases of advanced ovarian cancer after neo-adjuvant chemotherapy; robotic surgery for complex deep endometriosis (including bladder, ureter and recto-sigmoid); robotic exenterations for centrally recurrent cervical cancer

What about the future? How can this technology be further developed?

The field of robotic surgery is ready for significant advancement through the integration of artificial intelligence (AI). Researchers recently tested a surgical Intelligence platform developed by Theator Inc. that incorporates advanced computer vision and AI technologies to annotate the sequential steps involved in laparoscopic hysterectomy procedures.[1]

A computer vision system was trained to perform automated step detection during hysterectomy, achieving a high accuracy rate of 93.1%, demonstrating strong concordance with manual human annotations.

AI and virtual reality are also expected to play pivotal roles in robotic surgical training, enabling robotic surgeons to perform virtual simulations of patient-specific surgeries using preoperative imaging data such as CT, MRI or PET-CT scans.

During live procedures, AI can assist surgeons at the console by guiding them through the various surgical steps and providing augmented reality-based warnings about critical anatomical structures, including nerves and blood vessels. This integration of AI-driven technologies promises to enhance surgical precision, safety and outcomes.

How can SERGS further improve, collaborate and flourish?

SERGS has played, and continues to play, a pivotal role as the leading European organization in establishing a structured and comprehensive robotic surgery training curriculum for novice robotic surgeons.

In recent years, SERGS has collaborated extensively with other prominent European gynaecological organizations, including the European Society for Gynaecological Endoscopy (ESGE) and the European Society of Gynaecological Oncology (ESGO), to organize training sessions and master classes. These efforts should remain a priority to advance the field further.

The integration of the Young European Advocates of Robotic Surgery (YEARS) group into SERGS has significantly enhanced the organization's value by creating a dedicated platform for aspiring robotic surgeons.

Strengthening the connection between YEARS and the European Network of Young Gynae Oncologists (ENYGO) will foster a more robust and expansive network of young gynaecologists across Europe, promoting collaboration and advancement in minimally invasive surgical techniques.

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SERGS 2025

Interview with Vito Cela

JOIN US IN ITALY
AT THE 17TH ANNUAL SERGS CONGRESS!

Why Pisa?

With approximately 90,000 inhabitants, Pisa, Italy, transforms annually into "RoboTown," as it boasts one of the highest concentrations of universities, research centres and a thriving entrepreneurial network.

Synonymous with innovation and research, Pisa has long been a hub of knowledge thanks to its prestigious university. Today, it stands as a centre of excellence in medical robotics. This tradition is reflected in the numerous robotic surgery congresses it hosts, covering all medical disciplines.

Our city is, in every sense, **the capital of robotics** — a hub of academic excellence where cutting-edge technologies have been developed. At a time when generative AI and robotics are at the heart of public discourse, Pisa stands at the forefront, influencing not only technological advancements but also inspiring young minds as they embark on their academic and professional journeys.

In 2025, the core themes of the SERGS annual meeting will once again include all benign and oncological pathologies that benefit from the application of robotic surgery. We will facilitate comparison between the various platforms, as well as address the controversies and advantages in the application of robotic minimally invasive surgery.

Across all these fields, the meeting will showcase the achievements and aspirations of research in innovation, particularly in robotics and artificial intelligence.

To fully grasp the true impact of robotic surgery, we must view it as more than just a technological tool applied to surgical procedures. Rather, it should be seen as part of a broader system that can be enhanced through integration with other advanced technologies, such as diagnostic imaging, hysteroscopy and artificial intelligence.

To bridge the gap between these fields and promote the growth of minimally invasive surgery, the conference will feature discussions with top experts in the field through roundtables and specialized robotics talks.

The goal is to refine surgical techniques and improve patient care.

A key highlight of the programme will be live surgery sessions, showcasing robotic-assisted procedures for both benign and oncological

gynaecological conditions while comparing different robotic platforms available on the market.

Additionally, the event will offer hands-on training through simulation sessions and a certification programme tailored for gynaecology fellows, medical students, residents, nurses and professionals specializing in pelvic and abdominal surgery.

Before the main event, we will provide specialized pre-conference courses focusing on robotic surgery for both benign and malignant conditions, as well as advancements in medical imaging.

Continuing the tradition of previous years, **the upcoming SERGS conference will serve as a unique opportunity to connect with leading robotic gynaecological surgeons from around the world, fostering knowledge exchange and professional growth.**

Every year, Pisa — the city of the Leaning Tower — hosts a renowned robotics festival, reflecting Tuscany's status as a global hub for robotics research, development and innovation across multiple fields.

In 2025, Pisa will once again transform into "RoboTown," not just famous for its historic landmarks but also as a centre for robotic surgery.

From June 5 to 7, the city will welcome experts and professionals to the 17th SERGS Annual Meeting, dedicated to advancements in robotic gynaecological surgery.

What are the main topics of the event?

- Robotic surgery for benign and oncological pathologies
- Comparison of different robotic platforms
- Advantages and challenges of robotic minimally invasive surgery
- Integration of robotic surgery with diagnostic imaging, hysteroscopy and artificial intelligence
- Live surgery sessions showcasing robotic-assisted gynaecological procedures
- Roundtables and expert discussions on the future of robotic surgery
- Training sessions with simulation and certification programmes for medical professionals
- Pre-conference courses on robotic surgery in benign and malignant conditions
- Robotic training session for the Certification Programme

We invite you all to participate in the 17th Annual Meeting of the Society of European Robotic Gynaecological Surgery in Pisa!

Three Decades of Innovation Single Port System broadens Intuitive's Portfolio

Expertise

After obtaining its CE mark in early 2024, the da Vinci Single Port (SP) surgical system was introduced to Europe. This system unlocks new capabilities in the da Vinci system offering and reiterates Intuitive's commitment to continuous innovation and surgical excellence.

Rather than being a substitute or replacement to existing da Vinci systems, the da Vinci SP system provides surgeons with greater choice over how they perform robotic-assisted surgery, enabling more patients to access to the benefits of minimally invasive care in Europe.

Dr. Alberto Breda, Chairman of the EAU Robotic Urology Section (ERUS)
"Intuitive has always been with us. If there were no collaboration between doctors, physician surgeons and engineers, then you may have a machine that is beautiful from the engineering point of view, but it would be worthless for your surgeon."

A Marathon Towards Innovation in Single-Port Surgery
After two years of working on the single-port system, Intuitive's engineers invited surgeons to test a prototype in the Intuitive testing lab. This research phase took place over several years while the team continued to study the technical specifics and identify the right materials at a cost that the market could bear.

The team forged ahead and received 510(k) clearance for da Vinci SP as part of the third-generation platform in 2014. But with Intuitive's fourth-generation platform also receiving clearance in 2014, the decision was made to wait and release the SP system alongside the new platform.

Development of knowledge and skills
American surgeons and now some of their European peers have trained on the SP system. In line with Intuitive's vision and offering, patient safety is at the heart of Intuitive's technology training. Leveraging nearly 30 years of innovation and experience, Intuitive has evolved its learning journey to provide a structured and measurable training method for surgeons, physicians, and care teams.

Intuitive offers a set of learning assignments that vary depending on professional background, skill level, and learner interest. One can choose from remote or in-person case observations, e-learning modules (Intuitive Learning), simulations/skills training (SimNow), technology training (TR) or mentoring.

Dr. Karel Decaestecker, Urologist at the Maria Middelares Hospital (Belgium)
"Our team can lean on many years of robotic experience and has developed a good collaboration with top American urologists who have had the SP [system] at their disposal for several years. This allows us to safely bring our own expertise to an ever-higher level, using the latest technology, all for the benefit of the patient."

Innovating for the Future of Robotic-Assisted Surgery
Surgeons choose between both multiport and single-port systems depending on each individual clinical context, with the goal of maximizing operating room efficiency and improving patient outcomes. It is important for a medical team to develop a decision tree so that surgical procedures can be planned according to multiport or single-port patients.

Surgery therefore becomes customized with the right platform for the right patient.
The da Vinci SP is ideally suited to procedures within small working spaces outside the peritoneal cavity and presents a range of possibilities such as retroperitoneal, extra-peritoneal and transvesical surgery. Its single arm provides internal and external freedom of movement and 360° access to anatomical structures. Thanks to the dexterity of these instruments, surgeons can perform a range of procedures, in a controlled context, from a single point of entry. The da Vinci SP could have a favorable impact on operative times, postoperative pain and hospital stays for patients[1].

In the right conditions, this system makes operations safer and reduces the chances of complications for patients with an extensive history of abdominal surgery compared to multiport[2,3].

Dr. Christian Wagner, Head of Robotic Urology at the St. Antonius Hospital Gronau

"So far, Intuitive has always been at least one step ahead. They are providing the gold standard in robotic surgery. The next thing to come is the SP, the single port [system] that we've seen perform beautifully in the US, is arriving in Europe. I'm excited to see it come over. And of course, I'm excited for newer generations of the [system]. I know evolution will not stop; it will only grow."

Scan the QR code to discover more of the story by watching A Future of Firsts, Intuitive's video series about the urologists who continue to transform care with da Vinci surgery.

Disclosures

Da Vinci X & Xi Surgical Systems
Medical devices, CE 2460, refer to Instructions For Use for further information.

Da Vinci SP Surgical System
Medical device, CE 2460, refer to Instructions For Use for further information.
Intuitive's Privacy Notice is available at intuitive.com/privacy

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OVERCOMING BOUNDARIES:

Why SERGS Is Launching an Online Patient Portal

Martin Heubner, Vice President, SERGS

Dedication to robotic-assisted surgery (RAS) implies dedication to our patients. As much as we take this for granted, the focus of SERGS has so far been primarily on professional and scientific exchange.

The SERGS Council Board has agreed that it is time to also focus on the topic of patient information. Leaving this important topic primarily to medtech companies does not seem acceptable to us as a medical society.

It is obvious: AI, automation and robotics are playing an increasingly important role in our world. These developments are not always embraced but are sometimes viewed critically. They can even be frightening, especially from a patient's perspective. In the worst case, the feeling can arise of being at the mercy not only of doctors, but also of new technologies such as robotics.

We strongly believe that appropriate information is the key to overcoming fear and scepticism. During a council workshop in 2024, we thus agreed to set up an online patient portal aimed at the following:

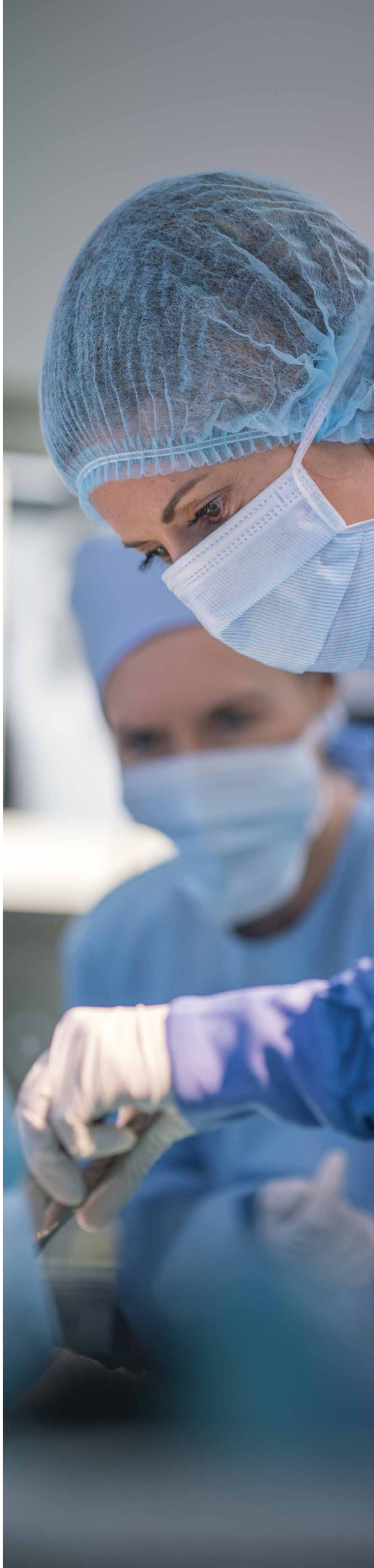
- Providing patient information about RAS to address frequently asked questions and potential scepticism regarding this technique.

- Positioning SERGS as a reliable and trustworthy source of information about RAS.

- Strengthening recognition of SERGS and SERGS-accredited console surgeons.

Our approach is to establish an easily accessible online patient portal providing information on robotic surgery in plain language and in various languages. Different topics such as **FAQs, Facts, Best practice and procedures** and **Patients interviews** are addressed to provide an informative overview from a patient's perspective.

We see an urgent need for this tool and hope to contribute to a better understanding of RAS for our patients and to provide an additional aid for robotic surgeons who may refer to this webpage.



Robotically Assisted Peritoneal Mesometrial Resection (PMMR) in Endometrial Cancer:

Feasibility, Safety and Oncological Outcomes

Andrea Giannini, Tommaso Simoncini, Italy
Christos Iavazzo, Greece, Simone Bruni, Italy, and Sergi Fernandez, Spain

Rationale of the technique

With 417,367 new cases in the year 2020, endometrial cancer (EC) is the seventh most common cancer in women worldwide with around 11,090 newly diagnosed patients per year (forecast for 2020: 10,600). The incidence of the disease is increasing worldwide, which can be mainly attributed to the increase in obesity, a major risk factor for EC. With 97,370 cancer-related deaths in 2020, there is a high medical need to develop optimal treatment strategies for EC patients.[1]

Andrea Giannini, Italy

Tommaso Simoncini, Italy

In most stages, EC treatment comprises hysterectomy and bilateral salpingo-oophorectomy, followed by adjuvant radiotherapy or chemotherapy according to risk factors. Remarkably, recurrence rates across all stages are around 13%, suggesting a necessity for novel therapeutic rationales for this widespread disease. EC originates in the embryologically determined Müllerian compartment. Organ compartments originate from common precursor tissues and are topologically ordered in defined structures — the so-called morphogenetic fields. During the development of tissues and organs, compartment borders persist and are strictly controlled within the organism.

According to the ontogenetic theory of carcinogenesis, pathological reactivation of naturally blocked developmental programmes during cancer progression allows the cell to proliferate outside its compartment gradually. Whereas tumour growth is therefore restricted to a certain compartment for a long time, increasing malignant progression may thus enable tumour spread across compartment borders. The strength of this concept could already be demonstrated for cervical, vulvar and rectal cancer. The same theory can be applied to the spread of cancer cells to the regional lymph vessels, which belong to the tumour-bearing compartment and originate in the embryonal veins.

As the regional lymph nodes on the same topical information, the whole loco-regional lymph compartment is prone to the progression and diffusion of cancer cells originating from the drained tissue compartment.

The aim of ontogenetically defined surgical techniques is thus to accomplish optimal loco-regional control by complete resection of the tumour-bearing (and permissive) compartment ('cancer field'). For cervical and vulvar cancer, the procedures of total mesometrial resection and therapeutic lympha-denectomy (TMMR+tLNE) and vulvar field resection (VFR) were established and explained based on these theories.

The data published up to now strongly support the belief of adequate loco-regional control without adjuvant irradiation even if data are not conclusive and mostly derived from a single tertiary referral centre.

In EC, removal of the cancer field consists of complete resection of the Müllerian compartment except the vagina, including the regional draining primary lymph compartments containing the first line nodes. The lymphatic system of the uterus is derived from the embryonal veins, so it runs along the blood vessel system. The resulting technique of peritoneal mesometrial resection (PMMR) by minimally invasive, robot-assisted surgery was published in 2013. Initial reports including therapeutically intended systematic lymphadenectomy (LNE) suggest optimal loco-regional cancer control rates even without postoperative radiotherapy.

However, the role of LNE in EC surgery due to improved perioperative morbidity and onset of lymphedema is still a matter of debate and an open question. Commonly, the indication for LNE is based on the risk for lymph node metastases. Complete pelvic and paraaortic LNE is still the guideline suggestion for EC, with a high risk of nodal involvement even if the evidence has been changing over the last five years. Indeed, the sentinel LNE technique has become a worldwide standard procedure due to relevant data concerning sensitivity and safety. In this view, indocyanine green (ICG) is considered a safe and solid practice for the detection of sentinel nodes. Ontogenetically defined surgical techniques aim to achieve loco-regional control of the tumour cells by complete resection of the cancer field, which consists of complete resection of the Müllerian compartment except the vagina, including the regional draining primary lymph compartments containing the first line nodes detected by the ICG. The original concept of PMMR and complete therapeutic pelvic and paraaortic lymphadenectomy has been customized to a technique of targeted compartmental lymphadenectomy (TCL), which plans to resect the first line nodes only including the cancer field in continuity from tumour to the nodes identified by the ICG-stained draining lymphatic channels and sentinel nodes.[2]

Technical feasibility and current evidence

The feasibility of this technique has been investigated in some studies; however, the lack of robust evidence neglects any significant conclusion about the proper indication, safety and oncological outcomes. First, in 2013, Kimming and colleagues described the novel technique of a modified radical hysterectomy in intermediate/high-risk endometrial cancer using PMMR by M. Höckel translated to robotic surgery. The authors conducted a prospective study of a group of 42 patients affected by EC. PMMR+tLNE was applied to demonstrate its benefits in terms of surgical radicalness as well as complication rates. Indeed, no intraoperative complications occurred, and all tumours were histologically resected R0. Post-operative complications were rare (total complication rate of 12%) and were more frequent in the group with periaortic tLNE, confirming that extension of surgery and operation time play an important role in postoperative morbidity.

No patients in this study received adjuvant external beam radiotherapy, but there was still good control of the local disease. This finding suggests that highly effective and potentially curative radiotherapy will be wasted in the adjuvant setting and will not be available for treatment in cases of recurrent disease. Two patients developed recurrent disease: one with liver metastases and one who was found to be histologically Rx.

The conclusion from the group of research emphasized that this minimally invasive technique of compartment-based oncological surgery for EC by robotic assistance is feasible and safe, with low perioperative morbidity for patients with locally confined EC.[3]

The same group investigated the efficacy outcomes of this technique in a prospective study of a cohort of 75 patients affected by EC. The aim was to evaluate the feasibility and efficacy of embryologically based compartmental surgery for loco-regional tumour control in intermediate and high-risk EC by using the technique of PMMR with therapeutic pelvic and paraaortic lymphadenectomy by robotically assisted laparoscopy. Sixty-eight patients with histologically proven EC were recruited by inclusion criteria. After a mean follow-up of 32 months, only two loco-regional recurrences occurred. This result shows that compartmental surgery in patients with EC is feasible and safe, with no evidence of an increase in complications and low perioperative morbidity, as well as without the necessity of additional adjuvant radiotherapy that brings significant morbidity to the bowel and bladder function and the sexuality, with a doubled risk of secondary malignancies.[4,5]

Interestingly, Buderath and colleagues designed a retrospective study in 2020 in which 51 patients who underwent robotic PMMR plus TCL surgery from 2017 to 2019 were compared to four different cohorts: 36 patients who underwent robotic PMMR plus systematic LNE, 25 patients who received robotic PMMR without LNE, 20 patients who were treated by minimally-invasive simple hysterectomy for EC and 262 patients who received classic laparoscopic hysterectomy for benign indications.

The results of the study showed that robotic PMMR and pelvic TCL are safe for EC patients in regard to intraoperative and postoperative complications, with a shorter length of stay in the hospital, despite their risk factors such as BMI and comorbidities.

The authors concluded that notwithstanding a relevant reduction of adjuvant radiotherapy, which would be recommended by state-of-the-art guidelines, the reported cohort is free from loco-regional recurrences according to the follow-up data.[6]

The same tertiary referral centre for intermediate/high-risk disease EC systematic pelvic and periaortic lympho-nodectomy followed by postoperative irradiation is the standard according to current guidelines. A relevant number of patients are out to be affected by an intermediate/high-risk disease only after getting a simple hysterectomy. This was a retrospective study of a group of 32 patients suffering from intermediate/high-risk EC (stage pT1a, G3 and higher pT stages) who received PMMR+ TCL or systematic pelvic ± periaortic lymphadenectomy following prior simple hysterectomy between 2010 and 2021. The aim was to offer PMMR and TCL to those patients whose diagnosis had been up-staged after a prior surgery. PMMR+TCL seems to have achieved excellent loco-regional control with spare adjuvant radiotherapy even when performed as a secondary surgical procedure. On the other hand, postoperative morbidity was relevantly increased compared to primary surgery, which is due to the complex procedure and the fact that these patients recently underwent surgery.[7]

Following up on the 2021 publication, Buderath and colleagues presented data on the treatment of EC by PMMR+TCL in a much larger cohort and with longer follow-up. They described outcomes of 135 patients with EC of International Federation of Gynecology and Obstetrics (FIGO) stage I–IV (75.6% FIGO I) who underwent cancer field surgery via PMMR+TCL between 2016 and 2023. The mean follow-up in the cohort was 27.5 months (0, 83; 19.7). The procedure was feasible and safe, with favourable intraoperative and post-operative complication rates. Even though 50.4% of patients indicated postoperative radiotherapy following national and international guidelines, the rate of postoperative irradiation administered was 10.4%. The overall recurrence rate was 8.1%, with two (1.5%) isolated loco-regional recurrences observed. These results further confirm the feasibility and safety of PMMR+TCL in EC patients, with the oncological data very encouraging and hinting at a superior loco-regional control without adjuvant irradiation.[8]

In conclusion, limited but consistent findings across a decade demonstrate the feasibility and safety of PMMR+TCL and support the concept of cancer-field surgery for the treatment of EC. In contrast to the concept of hysterectomy and sentinel node excision, this approach may spare adjuvant irradiation without compromising loco-regional control. However, data are still poor, with no conclusive evidence. Additionally, data results from a single tertiary referral centre for gynaecological oncology and this procedure are not generally adopted. Remarkably, a prospective trial will be needed to compare the ontogenetic approach to that of the current guideline treatment of EC. Therefore, a prospective PMMR trial (NCT04504006) has been designed and is currently recruiting. Technical development of this technique is parallel with the introduction and consistent growth of robotic platforms used in gynaecological oncology; hence, robotic technology could represent a push forward favouring the diffusion of this peculiar surgery in the EC setting.

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TOP ARTICLES AT A GLANCE

in the Robotic Gynaecology Field

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Robotic surgery has significantly transformed gynaecology, enhancing surgical precision, ergonomics and patient outcomes compared to traditional methods. This innovative approach is particularly beneficial in complex pelvic reconstructive surgeries within urogynaecology, as well as in the management of intricate cases involving endometriosis and gynaecological malignancies. The integration of robotic systems into surgical practice is reshaping standards of care and improving patient experiences. As the field of robotic surgery continues to evolve, it is crucial for clinicians and researchers to remain informed about the latest advancements and evidence-based practices. This article offers an overview of several significant recent publications across essential gynaecological subspecialties, including urogynaecology, benign gynaecology and gynaecological oncology.

UROGYNAECOLOGY

Title: Robotic Sacrocolpopexy
Author/Journal: Mozon et al, 2024, Obstet Gynecol Sci[1]
Ref: 38246693
Study design: Narrative review of the literature
Study aim: To study the effectiveness and the surgical outcomes of various types of robotic sacrocolpopexy in the treatment of pelvic organ prolapse (POP)
Sample size: Not applicable
Results: Robotic sacrocolpopexy showed comparable results compared with laparoscopic sacrocolpopexy in terms of mesh-related complications, with statistically significant lower risk of conversion, lower blood loss and fewer intraoperative complications.

Title: Comparing postoperative pain with laparoscopic versus robotic sacrocolpopexy
Author/Journal: Nilsson et al, 2024, J Minim Invasive Gynecol[2]
Ref: 38013160
Study design: Multicentre randomised controlled trial
Study aim: To compare postoperative pain and pain-related outcomes after laparoscopic and robotic sacrocolpopexy
Sample size: 90 patients (65 patients with laparoscopic sacrocolpopexy and 25 patients with robotic sacrocolpopexy)
Results: Operative time (208.5 ± 57.3 vs.143.6 ± 21.0 minutes, p<.01) and length of hospital stay (0.9 ± 0.4 vs. 0.7 ± 0.4 days, p=.02) was longer with a laparoscopic compared to robotic approach. Regarding the pain-related results, patients after a laparoscopic approach consumed more opioid morphine milligram equivalents (MME) (48.5 ± 25.5 vs. 35.1 ± 14.6 MME, p<.01), but after linear regression correction this difference disappeared. Moreover, no differences in 24-hour postoperative visual analogue scale pain score, opioid in the first week or Patient-Reported Outcomes Measurement Information System – Pain Interference Short Form were observed.

GENERAL GYNAECOLOGY

Title: Robotic surgery for deep-infiltrating endometriosis: Is it time to take a step forward?
Author/Journal: Ferrari et al, 2024, Front Med (Lausanne)[3]
Ref: 38504917
Study design: Narrative review of the literature
Study aim: To investigate the role of a robotic approach in endometriosis management
Sample size: Not applicable
Results: There is a limited number of studies directly comparing the two minimally invasive approaches for patients with r-ASRM stage III/IV endometriosis. These studies report comparable outcomes and similar rates of intraoperative and postoperative complications when managing endometriosis involving the colorectal region, diaphragm, urinary tract or sacral plexus nerves.

Title: The new robotic system HUGO RAS for gynaecological surgery: first European experience from Gemelli Hospital
Author/Journal: Gioè et al, 2024, Int J Gynaecol Obstet[4]
Ref: 38299809
Study design: Prospective study
Study aim: To evaluate the safety and feasibility of the new surgical robot HUGO for robotic-assisted surgery (RAS) in a series of gynaecological surgical procedures for uterine, adnexal pathologies or pelvic organ prolapse
Sample size: In total ,138 patients were treated at Fondazione Policlinico Universitario A. Gemelli IRCCS, Rome, Italy. 78 patients were operated on for uterine and/or adnexal pathologies, and 60 patients were operated on for pelvic organ prolapse.
Results: The median docking time was comparable between the two groups (5 minutes vs. 4 minutes). The median console time was 90 minutes for uterine/adnexal pathology and 134.5 minutes for the pelvic organ prolapse group. All surgeries were successfully completed robotically without any intraoperative complications. This study concluded that the HUGO RAS system for gynaecological surgery is surgically efficient with good perioperative outcomes, while further studies ought to be conducted to investigate its use in gynaecological surgery.

Title: Expanding robotic-assisted surgery in gynaecology using the potential of an advanced robotic system
Author/Journal: Alkatout et al, 2023, Medicina (Kaunas)[5]
Ref: 38256313
Study design: Narrative review of the literature
Study aim: To summarize the advantages and limitations of robot-assisted surgical systems compared to laparoscopic surgeries in gynaecology and to present a new surgical system, the Dexter Robotic System
Sample size: Not applicable
Results: The advantages of robotic-assisted surgical systems for surgeons are well-established, including reduced physical strain and fatigue, as well as enhanced instrument dexterity due to the greater range of motion compared to laparoscopic instruments. Studies have shown that postoperative complication rates, such as infections, bleeding and wound-related issues, are generally comparable between robotic-assisted surgery and laparoscopy. However, robotic-assisted systems also have notable limitations, including the significant space requirements within the operating room, reduced direct interaction between the surgeon and the surgical team, system complexity, potential for malfunctions or technical issues that may disrupt procedures and the high associated costs.

Title: The analgesic benefit of rectus sheath block in robotic gynaecological surgery: a retrospective study
Author/Journal: Manici et al, 2024, Medicine (Baltimore)[6]
Ref: 39470571
Study design: Retrospective observational study
Study aim: To assess the analgesic efficacy of the rectus sheath block on postoperative pain and opioid consumption after robotic gynaecological surgery
Sample size: 20 patients
Results: Patients had an average morphine intake of 8.2 ± 5.09 mg during the first 24 hours post-surgery, with consistently low average pain scores. These findings suggest that incorporating rectus sheath block into a multimodal analgesic approach after robotic gynaecological surgery may effectively reduce opioid consumption and enhance postoperative pain management.

Title: Robotic assisted versus laparoscopic surgery for deep endometriosis: a meta-analysis of current evidence
Author/Journal: Pavone et al, 2024, J Robotic Surg[7]
Ref: 38753180
Study design: Meta-analysis of the literature
Study aim: To evaluate the safety and the efficacy of robotic-assisted laparoscopic surgery versus traditional laparoscopic surgery in the treatment of endometriosis
Sample size: Not applicable
Results: This meta-analysis included 14 studies comprising a total of 2,709 patients treated for stage I–IV endometriosis. Patients in the robotic group had a statistically significant longer operative time ($p<0.0001$) and a longer postoperative hospital stay. However, no significant differences were observed between the robotic and laparoscopic groups regarding intraoperative and postoperative complications, conversion rates or estimated blood loss.

Title: Uterine transposition
Author/Journal: Leitao et al, 2024, Ann Surg Oncol[8]
Ref: 39048904
Study design: Procedure video
Study aim: To review the surgical steps of uterine transposition using a robotic-assisted laparoscopic surgical platform
Sample size: 1 patient
Results: Not applicable

Title: New robotic systems: first head-to-head comparison between Hugo RAS and Versius CMR in the pre-clinical setting

Author/Journal: Sighinolfi et al, 2024, Minerva Urol Nephrol[9]
Ref: 38426418
Study design: Single-centre retrospective study
Study aim: To conduct a head-to-head comparison between the Hugo RAS and the Versius surgical system in the preclinical scenery using simulators of these two new robotic systems
Sample size: 28 undergraduate medical students participated
Results: The Hugo RAS simulator was found easier to use (p=0.036), while both consoles were found not at all fatiguing, with no statistically significant difference (p=0933).

Title: Early implementation of robotic training in surgical and surgical subspecialty residency
Author/Journal: Newland et al, 2024, Am Surg[10]
Ref: 38262961
Study design: Retrospective study
Study aim: To evaluate early surgical trainees' experiences and opinions of robotic surgery
Sample size: 85 trainees between 2020-2023 from four different specialties (general surgery, urology, OB/GYN, and thoracic surgery) and 27 undergraduate medical students
Results: All participants (100%) agreed that robotic surgery should be integrated into surgical training, reflecting the growing enthusiasm of new surgeons for this technology.

Title: Robotic surgery for severe endometriosis: a preliminary comparative study of cost estimation
Author/Journal: Verrelli et al, 2024, J Minim Invasive Gynecol[11]
Ref: 37935331
Study design: Cohort comparative study
Study aim: To evaluate and compare postoperative outcomes and overall costs between traditional laparoscopy and robotic surgery in patients with severe endometriosis
Sample size: 175 patients
Results: The robotic group demonstrated significantly higher total surgical room occupancy (203 minutes vs. 151 minutes) and operating time (150 minutes vs. 105 minutes) compared to the laparoscopic group (p=.001). However, there were no significant differences in mean hospital stay (p=.06), postoperative complications (p=.91), rehospitalization rates (p=.48) or secondary surgical treatments (p=.78). Regarding cost analysis for disposable supplies, the colorectal resection cost was 2,604 euros for the laparoscopic approach versus 2,957 euros for the robotic approach (+352.6 euros, +14%). Similarly, the cost of rectal disc excision was 1,527 euros for the laparoscopic approach versus 1,905.85 euros for the robotic approach (+378 euros, +25%).

Title: Enhancing surgical performance: the role of robotic surgery in myomectomies, a systematic review and metanalysis
Author/Journal: Mourad et al, 2024, J Robot Surg[12]
Ref: 38683450
Study design: Systematic review and meta-analysis of the literature
Study aim: To explore the role, advantages and limitations of robotic surgery in myomectomies compared to laparoscopic and open surgical approaches
Sample size: Not applicable
Results: 24 studies included. A comparative analysis of robotic and laparoscopic myomectomies revealed comparable outcomes in several aspects, such as fibroid weights and maximum sizes. While robotic procedures resulted in reduced blood loss, transfusion rates remained equivalent. Complication rates and operative durations were generally analogous, though some studies noted extended times for robotic surgeries. Robotics demonstrated an advantage in conversion rates. Hospital stay durations exhibited wide variation but lacked significant overall differences.

Pregnancy outcomes were similar for both methods. In contrasting robotic with open myomectomies, open procedures addressed more substantial and larger fibroids. Open surgeries were associated with increased blood loss, yet robotic approaches necessitated fewer transfusions. A slightly elevated complication rate was observed in open procedures. Generally, open surgeries were completed more rapidly. Postoperative pain experiences were comparable between the two techniques. However, patients undergoing open procedures typically endured longer hospital stays. As for the fertility outcome, pregnancy rates were comparable for both robotic and open methods.

GYNAECOLOGICAL ONCOLOGY

Title: Robotic-assisted versus conventional laparoscopic surgery in the management of obese patients with early endometrial cancer in the sentinel lymph node era: a randomized controlled study (RObese)
Author/Journal: Dinoi et al, 2024, Int J Gynecol Cancer[13]
Ref: 38326228
Study design: Phase III multi-institutional randomized controlled trial
Study aim: To determine the optimal minimally invasive surgical technique for morbidly obese patients diagnosed

with early-stage endometrial cancer, considering the current use of sentinel lymph node mapping.
Sample size: Not applicable – recruitment until 2026
Results: Not applicable

Title: Robotic-assisted surgery in high-risk surgical patients with endometrial cancer
Author/Journal: Collins et al, 2024, Best Pract Res Clin Obstet Gynaecol[14]
Ref: 37980868
Study design: Narrative review of the literature
Study aim: To evaluate the perioperative challenges associated with robotic gynaecological surgeries in endometrial cancer patients with high BMI, advanced age and/or frailty
Sample size: Not applicable
Results: The oncological outcomes of robotic surgery for endometrial cancer are comparable to those achieved with laparoscopic or open approaches. Additionally, studies have highlighted that robotic surgery is associated with shorter operating times, reduced estimated blood loss and fewer intraoperative complications. For elderly or frail patients, concerns about potentially longer operative times exist; however, the benefits of reduced blood loss, shorter hospital stays and lower complication rates should be carefully considered.

Title: Robotic versus open and laparoscopic pelvic exenterations for pelvic cancer: a multicentre propensity-matched analysis in Japan
Author/Journal: Yatabe et al, 2024, Surg Endosc[15]
Ref: 38886231
Study design: Multicentre retrospective comparative study
Study aim: To evaluate the safety and efficacy of robotic-assisted pelvic exenteration compared with open and conventional laparoscopic pelvic exenteration
Sample size: 261 patients: 61 in robotic (RPE), 90 in open (OPE) and 110 in laparoscopic arm (LPE)
Results: The robotic approach was associated with significantly less blood loss (RPE vs. OPE: 408 mL vs. 2,385 ml, p<0.001); lower transfusion rate (RPE vs. OPE: 32% vs. 82%, p<0.001); and lower rate of complications over Clavien-Dindo grade II (RPE vs. OPE: 48% vs. 74%, p=0.013; RPE vs. LPE: 48% vs. 76%, p=0.002).

Title: Robotic radical hysterectomy after conization for patients with small volume early-stage cervical cancer
Author/Journal: Coronado et al, 2024, Best Pract Res Clin Obstet Gynaecol[16]
Ref: 38134716
Study design: Narrative review of the literature
Study aim: To evaluate the efficacy and oncological outcomes following robotic radical hysterectomy after conization for patients with early-stage cervical cancer
Sample size: Not applicable
Results: Retrospective studies have suggested that performing conization prior to radical hysterectomy (RH) is associated with a reduced risk of recurrence, particularly in cervical tumours smaller than 2 cm. However, these studies lack sufficient statistical power to definitively recommend conization as a standard step before RH. To clarify the role of conization in early-stage cervical cancer, prospective clinical trials are necessary. These trials should involve women with tumours under 2 cm, randomized to either undergo conization before robotic RH or proceed without prior conization.

Title: Robotic-assisted pelvic exenteration for cervical cancer: a systematic review and novel insights into compartment-based imaging
Author/Journal: Van Trappen et al, 2024, J Clin Med[17]
Ref: 38999239
Study design: Systematic review of the literature
Study aim: To evaluate the current literature on robotic-assisted pelvic exenterations in cervical cancer
Sample size: Not applicable
Results: The review encompassed 12 publications, including four individual case reports and eight case series. The majority of procedures (79.4%) were anterior pelvic exenterations. Robotic pelvic exenterations demonstrated minimal intraoperative complications, with early and late major complications occurring in 30-35% of cases, a rate lower than that observed in open pelvic exenterations. Importantly, the oncological outcomes of robotic pelvic exenterations were comparable to those of open procedures.

Title: Intraoperative image-guidance during robotic surgery: Is there clinical evidence of enhanced patient outcomes?
Author/Journal: Tappero et al, 2024, Eur J Nucl Med Mol Imaging[18]
Ref: 38607386
Study design: Systematic review of the literature
Study aim: To evaluate the use of image guidance during robot-assisted surgery (IGS) throughout different surgical specialties
Sample size: Not applicable
Results: 29 studies from three specialties (general surgery, gynaecology and urology) were included. IGS

was found to be associated with a 12% reduction in length of hospital stay, 13% reduction in estimated blood loss, 44% increase in mean number of removed lymph nodes, a artistically higher rate of metastatic nodes and a significantly lower rate of positive surgical margins. Moreover, no effect on operative time or complications was observed.

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Meet the affiliated Societies:

SHRGS - Society of Hellenic Robotic Gynecology

Vasiliki Chatzirafail

When was your first experience with robotic technology?

I started to work with the da Vinci robot 19 years ago. In 2006, Iatriko Athinon Hospital in Athens purchased the first robotic system in Greece — the "standard" one. I was working there at the time, so I had the privilege of being trained in Strasbourg, France and becoming the only gynaecologist in Greece to use the robot for several years!

Can you describe your personal journey in the robotic gynaecological world and how robotic surgery has developed in Greece over the years?

After two and a half years of performing benign robotic gynaecological procedures, I wanted to improve my skills and become involved in oncology. It was in 2009 and in 2011 that I trained in the OR programme at IEO in Milan in the gynaecology department with Drs. Maggioni and Zanagnolo. This training continued back in Greece through collaboration with my dear friend and renowned oncologist Dr. Tserkezoglou.

In 2009, people in Greece still didn't know what robotic surgery was, and we had to persuade them that the robot wasn't operating by itself! By 2010, there were six robotic systems at different hospitals in Athens, and I operated with almost all of them. I then realized that I wanted to introduce robotic surgery throughout Greece, Cyprus and Southeastern Europe. Since that time, I have created courses and provided lessons on robotic gynaecological surgery in dry and wet lab environments on porcine and cadavers at the research centre at the Academy of Athens, at Euroclinic Hospital and at ISLE Academy under the auspices of SERGS and Athens University.

In 2023, I was elected to the SERGS council and simultaneously served as the chair of the 15th SERGS annual meeting in Athens, which was a huge success. My participation in SERGS' family made me want to get more involved in the spread of robotic surgery and inspired me to create a similar society in Greece called SHRGS.

When did you realise that robotics is the future of surgery?

From my very first experience, I became fascinated with robotic technology and how I could work with it. I decided it was what I wanted to do with my life. I realized very quickly that robotic technology is here to stay. In my opinion, it is the future of surgery in all respects. So, I felt it was my obligation to transmit my knowledge to young surgeons.

What is SHRGS and who participates?

SHRGS is the Hellenic robotic gynaecological society, and it consists of Greek and Cypriot members (doctors and nurses). All of the doctors are robotic-certified surgeons at different levels.

What is the aim and vision of SHRGS?

Our goal is to educate surgeons, fellows and nurses and to expand robotic surgery. This has been done voluntarily with great enthusiasm by SHRGS members for the last few years. By participating in collaborative SHRGS-SERGS educational programmes, gynaecologists can gain the knowledge and tools needed to improve their qualifications and begin to operate with robotic systems. It is their first step towards future surgery.

The aim of SHRGS is to transmit knowledge to medical staff and to explain the benefits of robotic surgery to patients. Another reason behind the foundation of SHRGS is the need for an official scientific society in Greece to inform women about the option of a different type of surgery that can improve their health, avoid the need for open surgery and allow for a quick recovery.

How do SERGS and SHRGS collaborate?

Through our affiliation with SERGS, our members contribute to and participate at SERGS educational programmes, webinars and scientific and strategic meetings. SERGS and SHRGS are working together to achieve the same goal: expanding robotic surgery in Europe and worldwide through education, training and research!

MY ROBOTIC SURGERY JOURNEY

and the Reality of Robotic Gynaecology in Chile

José Ibacache Pinto

Pablo Ponce, Manuel Ramos and José Ibacache Pinto

My name is **José Ibacache Pinto**, a gynaecological oncologist working in Santiago, Chile. I have always been passionate about combining science and patient care. When I first encountered robotic surgery, I was convinced of its potential to reshape surgical practice. Knowing that my hospital had access to a da Vinci system, I saw an opportunity not only to train but to bring its benefits to the public healthcare system.

Before becoming involved in my hospital's robotic surgery program, I sought to broaden my perspective abroad. During my master's program in management information systems at Vall d'Hebron in Spain, I had the opportunity to observe and assist in robotic surgeries for gynaecological cancer and endometriosis. This experience reinforced my belief that collaboration and mentorship are key to progress.

In 2022, the Hospital Clínico San Borja Arriarán (HCSBA) became the first public hospital in Chile to acquire a da Vinci robotic system, marking a milestone for public healthcare. However, the gynaecological robotic program soon faced organizational difficulties and was unable to progress as expected. By 2024, it became clear that a more structured program was needed. At that point, I joined Dr. Manuel Ramos, who leads our team and had just completed a robotic fellowship at IRCAD in Brazil. Together, we developed a structured plan to focus on the cases where robotic surgery could have more impact.

A pivotal point in this journey was my participation in the Mentoring in Robotic Gynaecological Surgery programme, organized by SERGS. Under the mentorship of Dr. Sergi Fernández, I focused on building a sustainable robotic surgery program and fostering international collaboration. The knowledge gained through this mentorship played a crucial role in implementing robotic gynaecological surgery at our institution.

The results have been remarkable. In just three months, our team performed 40 robotic surgeries, proving not only the effectiveness of the technology but also the commitment of our team. Today, HCSBA has two certified console surgeons in gynaecology, and I am proud to be one of them. Our focus is on gynaecological oncology, pelvic floor and endometriosis surgery, demonstrating that robotic surgery is both feasible and beneficial in public healthcare.

Industry partners have been instrumental in this process. The support of Intuitive Surgical specialists in Chile has been invaluable in developing our program. Looking ahead, Strattner, the Brazilian-based representative for Intuitive now responsible for robotic systems in Chile, has the potential to improve logistics, training and development of robotic programs.

The country currently has 11 working da Vinci robotic systems, most of them in Santiago, the capital. However, only two are in the public sector, making access difficult for many patients. There are also fewer than 20 certified gynaecological robotic surgeons, and no formal national training program. One of the biggest barriers is funding. Expanding robotic surgery requires negotiations between the distributor and healthcare providers, both public and private. Furthermore, public policies are essential to supporting the integration of robotic surgery into the healthcare system.

At the end of the day, **medical innovation is not just about technology, it's about people. Robotic surgery is an example of how science and innovation can transform lives. I encourage my colleagues to embrace innovation, push boundaries and work together to make robotic surgery a reality for everyone**.

YEARS
Young European Advocates of Robotic Surgery

YEARS CORNER

Training Programmes in Robotic Surgery in Italy

by Simone Bruni, Italy

Robotic surgery has evolved significantly over the past 15 years, with its application becoming standard practice in select medical units. However, the robotic field is characterised by the emergence of different platforms, with several systems entering the market in recent years. Additionally, the field of gynaecological surgery has witnessed a notable increase in multidisciplinary approaches, driven by the development of distinct specialties such as benign surgery, oncological surgery, urogynaecology and fertility surgery. Therefore, those interested in robotic surgery are often faced with different training opportunities, accompanied by varying degrees of access to facilities worldwide.

In Italy, the rising presence of robots in hospitals has prompted an increased interest among newly qualified residents and surgeons in pursuing training and robotics courses. Drawing on my own professional experience, I believe that training in robotic surgery should follow a structured approach.

One important source of knowledge is the web. Every robotics company has its own website with information about its systems and training. It is very important to have a deep understanding of the robotic system on which one is going to be trained, and it is now possible to obtain a great deal of information about the name and characteristics of the various components of robotic platforms on these company sites.

After acquiring a theoretical basics, it is important to focus on simulation of the operating system. Robotic companies are equipped with training and simulation centres, which are dedicated learning environments with simulation systems and customised educational paths. Through these centres, one can learn the docking procedure and how to use the console with simulation

programmes in virtual models that allow one to experience the movement of instruments, cameras and energy pedals. These virtual advanced tissue models are capable of reproducing human anatomy and living tissue response for a near-real, complete and immersive learning experience.

After practising simulation, the next step is to participate in 'hands-on courses' on virtual, animal or cadaver models. Industry-provided and/or platform-specific courses offer general robotic knowledge and technical training, while dedicated courses organised by hospitals or societies provide more advanced specialist training. When I started my own robotic training on the da Vinci system, I had the opportunity to practise on a weekly basis at various training centres before performing my first surgeries on patients.

There are currently **three official da Vinci Intuitive training centres in Italy: the Robotic Academy Intuitive Naples (RAIN)** at the Cardarelli Hospital; **the One Health Hub** in Grugliasco, Turin; and **Ab Medica** in Cerro Maggiore, Milan. Each of these centres is structured to have various types of training to provide technical skills on the systems and then test the technology (including such advanced technologies as **Vessel Sealer, SynchroSeal** and **robotic suturing**) on a pig or ATM models. Due to increasing demand, more and more hospitals

hospitals across Italy are setting up company-supported robotics training centres.

To create training courses for gynaecologists willing to start robotic surgery and to standardize training, **SERGS has introduced the first robotic curriculum in Europe through a pathway leading to certification as a robotic surgeon recognized by the Society.** Being part of a list of certified surgeons also published online will ensure that individuals who participate in this process can be identified by patients and colleagues.

Recently, **SERGS joined the Gynaecological Endoscopic Surgical Education and Assessment (GESEA) programme** to add a robotic component to this structured programme of endoscopy in gynaecology. The collaboration between the two organizations has resulted in the **GESEA robotics certification, which is part of the GESEA Level 2 programme and can be carried out in one of the recognised GESEA centres in Italy.** Details can be found on the GESEA website at **www.gesea.eu/pathways.**

After console training, it is important to train in the operating room with an experienced surgeon who can teach and help resolve any difficulties. For those interested in pursuing a career in oncology, it is essential to train at a cancer centre accredited by the **European Society of Gynaecological Oncology (ESGO)**. The ESGO website provides a comprehensive list of recognised oncology centres in Italy offering fellowships in oncology.

The ESGO fellowship is a comprehensive training programme that includes a logbook to be completed prospectively and specific benchmarks to be met under the supervision of an educational supervisor.

There are also masters or training opportunities for those interested in deepening their oncological skills such as **the international masters training programme in gynaecological oncology at Gemelli Hospital in Rome** or **the European School of Abdomino-pelvic Surgery in Gynaecological Oncology (ESAGON) at the European Institute of Oncology in Milan.** For those who want to improve their surgical technique, it is also possible to organise proctorship programmes with experienced robotic surgeons through the intermediary of various companies.

Following specialised training, it is essential to remain updated and enhance proficiency through courses, conferences and virtual teaching. In this regard, **SERGS has developed its own video portal, which offers a wide selection of surgical procedures and webinars.**

What we expect for the future is the emergence of new specialised robotics masters programmes and courses dedicated to the various subspecialities of gynaecology and more training centres throughout Italy dedicated to different robotic platforms.

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REFLECTING ON THE ROLE OF A SURGICAL CARE PRACTITIONER

in the Gynaecology Perioperative Setting

Marie Taniacao, UK

I began my career as a recovery nurse and later progressed to roles as a scrub and anaesthetics practitioner. As a registered nurse with 20 years of experience in the perioperative setting, I pursued an additional two years of postgraduate study at the master's level, specializing in surgical care practice as supported financially by **the Royal Marsden charity and gynaecology department.** This advanced education underpins the four pillars of advanced practice and, in combination with work-based assessments, research and continuous learning, has significantly enhanced my skills, knowledge and attitude, all contributing to my development as an expert surgical care practitioner (SCP) in my current role.

Since 2020, I have worked as an SCP in the gynaecological oncology setting at the Royal Marsden Hospital in London. As a non-medical registered practitioner, I worked closely with five gynaecological oncology consultants, trainee surgeons, medical students and the scrub and anaesthesia teams to ensure safe, coordinated and consistent patient care throughout the perioperative journey.

My typical workweek involves three to four days in the operating theatre, where I assist with preparations, participate in invasive surgical procedures and, under the direct supervision of a consultant surgeon, perform certain invasive interventions such as port insertions, Veress needle insufflation and the application of vascular clips. Additionally, I spend one day in the clinic, assessing preoperative patients, obtaining consents, optimizing conditions for surgery and managing postoperative care. I also attend departmental surgical diary meetings and participate in intensive therapy unit/ward rounds daily. As part of my role as an SCP, I often remain with patients to address any concerns and offer emotional and psychological support when needed.

Within **the Royal Marsden Trust**, there are three SCPs, each specializing in different areas: **urology, hepatobiliary/upper GI and gynaecology,** which is my area of focus. The SCP's role in both open and minimal invasive surgery requires a multi-skilled approach and advanced knowledge and experience to provide expert assistance, particularly in laparoscopic and robotically assisted surgery. I have worked closely with the five consultants in my department, a relationship I have built over time, having to lead and scrub for the gynaecology specialty.

This familiarity with the consultants enables me to anticipate their needs, allowing them to focus on the procedure at hand. It also allows me to orientate trainee surgeons and other team members to settle into rotations more quickly, minimizing stress and improving overall productivity. Together with the scrub team, I am very proud to celebrate with consultants who reach robotically assisted procedures starting from 100s and counting with a cake 'yummy' (courtesy of Mr Ind's profile).

The SCP role has been crucial in maintaining consistency and continuity of patient care, particularly during transitions involving trainee surgeons. The expertise provided by SCPs has streamlined access to gynaecology services, particularly with parallel weekday and weekend lists. Furthermore, I work closely with the multidisciplinary team both inside and outside the operating theatre, ensuring that patients who require additional treatments are referred appropriately.

In accordance with the guidelines set by **the Royal**

Colleges of Surgeons of England and Edinburgh, as well as **the Nursing and Midwifery Council, the Health and Care Professions Council, the General Medical Council and local hospital protocols,** the four pillars of the SCP role as advanced practitioner ensure that patient care is consistent, safe and in line with the latest advancements in surgical technology. The experience and expertise of the SCP ensure continuity of care throughout the patient's surgical journey.

The SCP role continues to evolve in response to patient needs, service improvements, legal and ethical considerations and personal development. Additionally, I have completed a prescribing course, which has contributed to a reduction in the time patients wait for medications, decreased hospital stays and improved cost-efficiency.

Throughout my practice, I have developed a strong sense of situational awareness, composure and professional integrity. These qualities have enabled me to ensure that best practices are achieved to meet high standards and to strive for continuous improvement in patient care. I aim to be a clinical role model, advocating for patients and ensuring that standards of practice are always maintained consistently.

Ongoing learning is integral to my daily practice, and I am committed to continuing my professional development through research and education. However, the role does present challenges, particularly in managing diverse personalities and working styles within and outside the theatre, to maintain a harmonious working environment.

Although the SCP role has gained recognition over time, it is still not fully understood or accepted in all settings, leading to some confusion. Inadequate education and training for other practitioners can compromise patient safety, as scrub practitioners may be asked to perform tasks outside of their scope of practice (e.g., camera manipulation, insertion of laparoscopic instruments, retraction of deeper tissues and teaching new surgeons in robotically assisted procedures). If the value of the SCP role is fully recognised as vital for patient safety and improved service delivery, it is essential that experienced practitioners are financially supported to pursue master's level studies at universities or institutions accredited by the Royal Colleges of Surgeons of England and Edinburgh.

The role of SCP is both rewarding and challenging. I believe in and am deeply committed to overcoming challenges to enhancing the quality of patient care by providing both basic and advanced care in a high-risk, high-intensity theatre environment, working in collaboration with a multi-professional and highly skilled theatre team to improve efficiency, maintain professional relationships and ensure a safe and harmonious working theatre environment.

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