THE

CONSOLE

SERGS Publication
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Greetings Colleagues,

It is my great honour and pleasure to be appointed as the first Editor-in-Chief of “The Console”, SERGS’s new robotic gynaecological surgery publication.

The launch of this new biannual newsletter for members of SERGS has the aim of informing SERGS members about the activity of our society. “The Console” can become a biannual voice of SERGS presenting where we have been, what we are doing, and where we are going. SERGS is growing every day and “The Console” aims to promote SERGS’s mentoring mission and to share ideas in an environment that fosters development of life-long professional and social relationships. If you are a SERGS member, enjoy it! Participate. Draw benefit from our Society’s experience and enthusiasm.

Let’s foster support, collaboration, friendship and fellowship in Robotic Gynaecological Surgery! I am looking forward to working closely with all the members of the SERGS family in order to achieve our goals and I am delighted to announce the publication of the first issue of the Console.

In this issue Thomas Ind our SERGS President, apart from making a presidential address ‘time travels’ back to November 2007 when his team performed the first robotic hysterectomy in the UK, and also presents the current reality in his country and how the robotic approach is implemented in the majority of UK centres.

SERGS has recently introduced the updated SERGS Curriculum aimed to certify specialists to perform robot-assisted surgery. Thomas Herbert, Peter Rusch, Henrik Falconer, Vanna Zanagnolo, Rainer Kimmig, and Thomas Ind present how SERGS is standardising training to ensure proficiency with a structured approach to learning and helps us to explore the pathway of SERGS Curriculum. Let’s grow the SERGS family of well-trained and certified SERGS surgeons!
Some of the main tools provided by SERGS to assist learning are the SERGS Webinars and Video Portal. Martin Heubner and Peter Rusch from SERGS Educational Network are presenting the SERGS Curriculum webinars series including several presentations (Level 1, 2 and 3) offered by the experts and grandfathers in the field. Let’s share the experience and spread the knowledge!

I would like to thank Tomasso Simoncini our Academic Lead as well as Andrea Giannini from University of Pisa, Italy, who provided us a list and summary of recent noteworthy articles that are impacting our everyday practice and discussing future challenges. We provide a summary of a selection of articles in the field of robotic gynaecological surgery for all the professionals who desire to be up to date with the recent highest scientific literature.

We thought that a corner for YEARS representatives would be ideal to present their projects and exchange ideas. In the current issue, they present the needs and aspirations of trainees involved in robotic surgery, and how YEARS can promote ideas and help members stay on top of the latest achievements in the field.

We recently had a memorable experience in Cork, Ireland. Once again congratulations to the organising committee for the excellent SERGS Cork 2022 Congress. Barry O’Reilly - SERGS 2022 Chair – as well as Daniel Galvin and Dina El-Hamamsy present in this issue the Conference Report and the best moments of the Congress.

Of course, we need to save the date for our next annual Congress. The 15th Annual SERGS Meeting will be held in Athens between the 8th and 10th June 2023. Great things are in the works for SERGS 2023 and Vicky Chatzirafail - SERGS 2023 Co-Chair - tells us what to expect in such a unique meeting in order to advance our knowledge and improve your daily practice. State of the Art sessions, key experts’ sessions and workshops are going to be part of the brilliant programme to share knowledge, experience and practice in Robotic Gynaecological Surgery.

I would also like to thank Lucie Lamlova for her valuable help in dedicating her time to us from a secretariat point of view, as well as our marketing guru Tali Eisenberg-Nissim, who put together our first issue.

I hope you will enjoy reading the first issue of “The Console”.

Christos Iavazzo
Editor-in-Chief, The Console
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SERGS PRESIDENTIAL ADDRESS
A time travel back to 2007 in the initial steps of robotic surgery in the NHS

Thomas Ind, UK

There was a time when to keep updated on news in gynaecological robotic surgery, all that was involved was a quick series of texts between a handful of people.

Now, thanks to the great efforts of Christos Iavazzo we have the first edition of “The Console” with news from SERGS, YEARS and the general robotic community sharing information between a kinship of many thousands of people. It does seem a long time since I first tried out the “Da Vinci Standard” and then the new “Da Vinci S” over fifteen years ago. (1st Photo, pg. 2).

Back in 2007, it took me only a few minutes trial on the console to realise that robotic surgery was going to take over as the primary instrument for use in gynaecological endoscopic surgery, and that the fifteen years I had spent learning and mastering old fashioned laparoscopy was eventually going to be for nothing.

We have come a long way since then. Industry has embraced this technology with Intuitive introducing four new generations of robots (Si, X, Xi, SP).

We now have many other technologies attached to the system including sealants, indocyanine green, augmented reality, and simulators. Other manufacturers have entered the market (e.g. CMR, Medtronic, Senhance, Mimic, & others) and everyone believes that there is a significant future for robotics and computer-assisted surgery in gynaecology.

So, what about the future? Our community has won by gaining wide acceptance of the principles even among some die-hard groups of nay-sayers who wanted to hide in a silo of straight stick laparoscopy. Developing an instrument and teaching surgeons how to use a device is the responsibility of industry.

However, training surgeons to operate, maintaining skills and managing a reflective practice under the compass of high clinical governance standards is the responsibility of surgeons and it is our time as professionals to demonstrate leadership in these tasks.

Training is a challenge. There are more platforms than one. Furthermore, there are increasing numbers of people who need to be given access to training programmes.

A monopoly on recognised training would corrupt the process but an agreement on the general principles would result in cross-recognition and greater access for students. This is why at SERGS, we are recognising other training programmes as equivalent for different stages of our syllabus, such as courses provided by OCERT from ORSI, GESEA, RCOG/BIARGS; as well as open to others who have established programmes. Collaboration is key.

To date, SERGS provides training for the joint SERGS/ESGO course in ORSI as well as the joint SERGS/ESGE course for the GESEA programme. The SERGS syllabus is validated and an asset to any surgeon.
To maintain standards, a surgeon needs not only to be trained but also to demonstrate that they audit their practice. For this reason, we have brought in a credentialing process that ensures that certified surgeons maintain their skills and work within a good clinical governance framework. To ensure this is achieved, a grandfathering process is required so no one is excluded, and many members have self-certified as robotic gynaecological surgeons.

However, at the end of it we always look back with fondness of the memories such occasions bring. Most are good, but I remember well the memories of Lille (Photo below) when I had taken over as secretary/treasurer of the society. Lucie informed me that we had not paid tax to the Belgium authorities and that my first job as treasurer was to sort out the tax arrears.

Luckily, Lille was such a successful event that more people joined the society and attended subsequent conferences that we made it through this difficult time.

So, my time as president will soon be coming to an end. Like the time I wheeled out our Da Vinci S from the operating theatre for the last time (Photo below), I am expecting better things to come and I wish Vanna Zanagnolo well in her term as the first female president of SERGS.

The society moves forward with credentialed robotic surgeons, increased membership, a European Union sponsored collaboration with GESEA, an inspiring group of young surgeons (YEARS), and a group of the most friendly and social doctors I have had the privilege to work with.
Why is there a certification?

Robotic gynaecological surgery has increased over the last one and a half decades to the point that it is now established in some unit’s routine practice.

Robotic manufacturers are providing surgeons with technical training on their platform, with access to training facilities and proctoring. Nevertheless, training and assessment of medical skills should be done by peers with the aim of harmonisation.

**SERGS** is the leading European scientific society for **ROBOTIC GYNAECOLOGICAL SURGERY** and has developed a curriculum aimed at ensuring proficiency in the use of robotic systems.

This curriculum is relevant across robotic platforms. In 2019 SERGS joined the GESEA (Gynaecological Endoscopic Surgical Education Assessment) programme to add a robotic component to this structured programme of endoscopy in gynaecology.

Why should a surgeon be certified?

Apart from very few countries in Europe, there are no medical assessments of proficiency in gynaecological-surgical training either for young trainees or for more senior surgeons.

Therefore, it is difficult for patients, governmental authorities, and insurance companies to know which surgeons have been properly trained and are proficient in using robotic surgical devices.

SERGS certification in robotic gynaecological surgery is a validated process for training in gynaecological robotic surgery aimed to give an academic acknowledgement to every surgeon who has followed the principles of good practice and training promoted by this curriculum.

Furthermore, there is a credentialling process that ensures every surgeon who wishes to maintain the certification has a reflective practice and participates in continued medical education.

Being part of a list of certified surgeons published online will ensure that individuals who participate in this process can be identified by patients and colleagues.

SERGS or GESEA certificate?

SERGS being part of the GESEA...
programme is promoting the GESEA certification pathway for every surgeon already in the GESEA programme for hysteroscopy and laparoscopy or wishing to get a diploma both in standard laparoscopy and robotic assisted laparoscopy.

GESEA robotic certification is level 2 of the GESEA programme, meaning that only surgeons granted with level 1 MIGS, ECRES and level 2 MIGS certificate are eligible to GESEA robotic certification and diploma.

Details can be found on the GESEA website www.gesea.eu/pathways/

SERGS certification is the pathway for surgeons who did not attend the GESEA programme, to get access to European robotic certification and diploma.

Both the content and process of the GESEA and SERGS certification and diploma are similar as they are developed by the same team within SERGS and GESEA.

How to become certified?

GESEA robotic pathway is organised by GESEA in collaboration with SERGS. Details and registration are available on GESEA website. GESEA diploma is acknowledged by SERGS and will grant same advantages. If you are not interested in the GESEA pathway, then the SERGS curriculum is how you should get certified.

1. The SERGS certification curriculum

A two-level certification programme that is designed to fit every surgeon’s situation and with 5 modules to be completed in order to be certified.

Overview of the SERGS curriculum

Both the content and process of the GESEA and SERGS certification and diploma are similar as they are developed by the same team within SERGS and GESEA.

Level 1: Introduction to robotic surgery

Intended at trainees and surgeon interested in robotic surgery.

Module 1: Online lectures, with a focus on robotic surgery principles and history. MC questionnaire will have to be completed during Level 2 certification process. Lectures can be viewed on the SERGS website after signing in.
**Level 2a: Certificate of basic skills in robotic surgery. (Independent of platform)**

Intended at trainees and surgeons planning to do robotic surgery in their career.

**Module 2: Lectures**

1. General indications in robotic surgery
2. Emergency procedure in robotic surgery
3. Robotic hysterectomy

E-learning or during certification day. MC Questionnaires about Module 1 and Module 2 lectures will be completed during certification day (module 3)

**Important: Must be done before certification day**

Learners must go through 20 to 40 hours on robotic simulators (backpack on the robotic systems or third part issued simulators), practicing their basic skills in robotic surgery. Every exercise contained in the simulators are relevant to practice one’s skills. Training can be done at the attendee’s hospital or during specific courses.

**Module 3: Certification Day**

A 3 hour exam session, including multiple choice questions, followed by a simulation training exam targeting seven exercises skills and performance. List of exercises are subject to change; they can be found on SERGS website. Success will grant you a Certificate in Robotic surgery, assessing your competency in basic skills of robotic surgery.

SERGS ACKNOWLEDGES THOSE STUDENTS WHO HAVE PROGRESSED THROUGH THE GESEA AND OCERT SYLLABUS FOR MODULES 1 AND 2.

Certification exams are held during SERGS meetings and can also be organised locally by an accredited team during a dedicated event. Information can be found on SERGS website and through SERGS secretariat.

**Level 2b: Diploma in Robotic Gynaecological Surgery. (Platform specific)**

Intended at fellows or surgeons at the beginning of their robotic journey. This part of the certification process is system specific.

**Important: Mandatory Before attending Module 3**

System specific training must be completed (provided by manufacturer) either online or during specific training, a certificate of completion is mandatory to register for Module 3.

**Module 4: A two day course in a training facility**

A two day course in a training facility, focusing on technical training on the system, proficiency based progression on:

1. Fundamental surgical tasks with robotic assistance (dissection, anastomosis, use of energies, knot tying):
   - Animal model
   - Simulation based training (specific exercises)
2. Procedural task with robotic assistance (Hysterectomy)

Module 4 Course information are available on SERGS website and through SERGS secretariat

**Module 4bis (Optional for senior surgeon):**

Course in robotic surgery on different topics (i.e., oncology, benign complex surgery…) may be SEN (SERGS Education Network) labelled and therefore replace Module 4.

**Module 5: Robotic training curriculum.**

For fellows or surgeons working in a certified robotic team (with a certified robotic surgeon)

Six to 12-month period in a surgical unit with regular access to the robot as first surgeon, with mentored work and creation of a logbook with OSATS assessment of competency during procedures.
A total of 20 robotic procedures must be performed to complete the logbook with at least two mentor evaluated operations.

**For senior surgeons**

Those with a current surgical practice, implementing robotic surgery in their armamentarium.

A robotic programme with regular access to the robot, allowing to perform at least 20 procedures over a year.

Two proctored sessions, with a SERGS certified surgeon (might be a proctor provided by the industry or a local proctor/mentor if the robotic programme is already running in the institution).

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**ISSUE OF DIPLOMA:**

Diploma in robotic surgery is issued after a review of the surgical logbook and of an unedited video of a simple robotic hysterectomy performed by the applicant, by SERGS educational board and assessed following PBP metrics for robotic hysterectomy.

**CREDENTIALLING:**

SERGS has a credentialling process whereby those who achieve the diploma via the curriculum or by grandfathering will be listed on the website for three years. Re-credentialling will occur at three years by providing the society with evidence of a reflective practice (a six-month audit) and continued medical education (attendance at a SEN approved conference or training course).

**TAKE HOME MESSAGE:**

SERGS and GESEA curriculum provides a structured training and assessment programme that ensures harmonisation in robotic practice and facilitates acknowledgement of surgeons training and competencies.

*With over 110 certified surgeons in late 2022, this curriculum is spreading. If you are not yet certified, it is time to consider it.*
“Education and Training is one of our most important tasks.”

Christos Iavazzo (CI) in dialogue with Martin Heubner (MH) and Peter Rusch (PR) from SERGS Educational Network.

This is why we established the SERGS Curriculum for robotic surgeons – and why education is one of our main focuses.

CI: Do webinars play a role in education and training?

MH/PR: We are absolutely convinced they do. While webinars had been held rather occasionally in the past, we have set a high value on regular webinars recently. The pandemic situation certainly contributed to endorse digital education platforms. We structured webinar topics in a didactical hierarchy and additionally made them accessible on demand. This way, each young robotic surgeon can proceed at her/his own pace. The experienced colleagues log in on advanced surgical procedures and discuss latest developments and trends. Education does not end with a curriculum certificate. Lifelong learning is mandatory. This holds true for medicine in general but especially for fields with high-tech-devices such as robotic consoles. Keeping pace with technical developments can be challenging and we want to offer a platform for that.

CI: The video library is another new feature on the SERGS website. Aren’t there enough videos accessible online?

MH/PR: SERGS is the leading society of gynaecological robotic surgeons in Europe. Many members are and have been pioneers in robotic surgery. A lot of experience and expertise is gathered in that group. As robotic surgery is emerging and now becoming daily routine in many gynaecological units, education and training are increasingly important. SERGS feels a responsibility to deal with these needs. Training and education in robotics should be professionally structured to provide easy and safe access and solid quality for surgeons as well as patients.

Moreover, we are convinced that experienced robotic surgeons should be leading robotic training/education rather than solely industrial companies.
MH/PR: Indeed, you will find many videos on robotic surgery online. However, there is neither a structure nor any means of quality control. As a medical society, we think that both is necessary to provide a good service for our members. Being able to see the surgical approaches of colleagues is always helpful and inspiring. Via browsing and scanning videos, one may also find experts for advice or discussion of complex cases. Sharing experience has become so much easier these days. Hence, establishing a suitable platform for professionals appeared logical and consistent.

CI: What are your future plans?

MH/PR: Online platforms need maintenance and care to stay up to date – hence this task is ongoing. We are aiming to keep up a lively and visible community with constant exchange, for experts as well as trainees. And certainly, we will move on with our efforts in training and education.

BACKGROUND: SERGS MISSION IN TERMS OF DIGITAL LEARNING IN ROBOTIC GYNAECOLOGICAL SURGERY

Since its FDA approval for gynaecological surgery in 2005, the Da Vinci R-surgical system (Intuitive Surgery Inc., Sunnyvale, California, US) became the most used surgical robot worldwide with more than 6,500 systems installed in 67 countries and more than 55,000 surgeons worldwide trained on its use. Improved 3D visualization, limitless instrument articulation and tremor-free instrument control trump feasibilities of conventional laparoscopy thus making robotic surgery the preferred technique especially for complex abdominal and pelvic operations.

Intensive training is necessary for the safe use of the highly complex technique that comes also with a changed interplay of all surgical staff involved. Training curricula set formal criteria for robotic clinical training, including use of simulators, expert supervision and feedback. Digital learning drives the shift away from volume-based to individualised proficiency-based training with the ability to shape (and often shorten) the learning curve. Since the Covid pandemic, webinars have become widely accepted for teaching and learning as they are without geographical limitations.
Video review similarly is widely accepted as a useful adjunct in minimal invasive surgery training. It has been shown to improve robotic performance and surgical outcome, while being without time constraints and hierarchy.

The Society of European Robotic Gynaecological Surgery (SERGS) has the overall objective to promote and implement a safe and efficient use of computer assisted surgery in gynaecology by being the acknowledged independent society for education, certification and registration of gynaecological surgeons and their teams.

SERGS outlined the first European educational curriculum for robot-assisted gynaecological surgery.

The implementation of digital learning with regular webinars and the setup of a video-portal with open submission of videos covering diverse subjects in robotic surgery is another contribution to promote learning, interaction and networking.

It will be open to all SERGS members and accessible via the SERGS website.

References:

1. Press Release Intuitive Surgical Inc., Dec 2021
LITERATURE REVIEW
New insights and future challenges in robot-assisted gynaecological surgery

Introduction

One of the reasons why robotics has not received widespread acceptance in the past is due to the technical limitations of the Da Vinci S and Si systems to reach the four quadrants of the abdomen, making it necessary to execute double or multiple dockings and utilizing additional trocars to attain adequate exploration and cytoreduction in difficult oncological or multidisciplinary surgeries.

The advent of the Xi system has corrected some of the limitations of the previous systems to reach the four quadrants of the abdomen due to the possibility of interchanging the camera location with the working trocars to access disease in different locations. Now, the 180° rotation of the robotic arms allows operating in the pelvis and upper abdomen without rotating the operating table, and the use of the Table Motion definitively overcomes these drawbacks thus representing a substantial step forward in the concept of precision surgery in different surgical settings of both benign and malignant gynaecological pathologies.

Endometriosis

The introduction of minimally invasive approaches has developed the surgery for the treatment of DIE, nevertheless, the difficult anatomy of the pelvis and the recognised technical limits of traditional laparoscopy still make radical pelvic surgery extremely challenging, with higher or similar rate of urogenital complications described for conventional laparoscopy compared with open surgery.

The Da Vinci robotic surgical platform is a rational step forward in minimally invasive technique; improving ergonomic setting, simplifying complex laparoscopic steps in the narrow operative field of the pelvis such as suturing or performing dissection, and thus facilitating anatomical identification and preservation of critical structures without compromising the radicality of surgery. However, evidence concerning robotic approach to DIE are still poor, controversial and suffer from a lack of comparative studies.

The ROBEndo is a recent study, consisting of a prospective, randomised, controlled clinical trial in a single-centre that compares robotic deep endometriosis surgery with conventional laparoscopy in a randomised, controlled setting, focusing on outcomes related to longer-term pain relief and quality of life.

Investigators are enrolling 70 patients who will be allocated 1:1 to receive either robotic-assisted or conventional laparoscopic surgery in two strata: radical surgery with the removal of the uterus and adnexa and gynaecological organ-sparing surgery.

In this view, the poor scientific evidence on the new field of robotic surgery for endometriosis along with its
non-conclusive data and non-negligible rate of complications lead to several technical and clinical considerations. The well-known drawbacks of robotic platforms are longer operating times, high costs as a consequence of direct costs of implementation and equipment maintenance, the need for specialised personnel and limited accessibility. These disadvantages of robotic laparoscopy hamper an appropriate assessment of the learning curve and the widespread use of this technology (Terho et al. 2022) 7.

Cervical cancer

In the last decades, several retrospective studies and meta-analysis demonstrated that a minimally invasive approach has similar oncological outcomes and fewer complications than open surgery, thus leading to the adoption of laparoscopic and robotic surgery for the treatment of early-stage cervical cancer. However, the recent results of the Laparoscopic Approach to Cervical Cancer (LACC) trial, a large phase III randomized controlled trial, comparing laparoscopic or robotic versus abdominal radical hysterectomy in patients with early-stage cervical cancer (FIGO 2009 stage IA1 with lymphovascular invasion to IB1) demonstrated that minimally invasive surgery (MIS) correlated with a three-fold increase in risk of developing recurrence in comparison to open procedures (Ramirez et al., 2018). This data was unexpected and it relates to ongoing concerns on the widespread adoption of MIS for cervical cancer. Therefore, the corroboration of new evidence resulted in a recent modification of clinical practice and guidelines for most American and European institutions with a subsequent shift from minimally invasive approach to conventional laparotomic surgery.

However, the reason why minimally invasive radical hysterectomy correlates with poorer oncological outcomes is still unclear. Some hypotheses have been suggested to elucidate these concerns, including insufficient skills of surgeons in MIS and low volume of the centres, tumour exposure and dissemination in the abdominal cavity during colpotomy or with the use of carbon dioxide gas and uterine manipulator as well as the impact of preoperative conizations.

Currently, there are three ongoing prospective randomised trials investigating the role of a minimally invasive approach in patients with cervical cancer. The Swedish Robot-assisted Approach to Cervical Cancer (RACC) trial compares oncological outcomes of robotic vs open RH without manipulator use and with vaginal closure before colpotomy (Falconer et al., 2019).

A Chinese trial which requires an accurate description of the uterine manipulator use and the approach to vaginal excision (Chao et al., 2019) has been designed to explore factors in worsening oncological outcome of MIS in cervical cancer patients after the LACC trial publication.

Finally, the American Randomized Controlled Trial of Robotic versus Open Radical Hysterectomy for Cervical Cancer (ROCC trial), is a phase III, multicentre, open-label, randomised, non-inferiority clinical trial with the hypothesis that robotically assisted radical hysterectomy with tumour containment prior to colpotomy is non-inferior to abdominal radical hysterectomy with respect to disease free survival (Protocol GOG-3043; NCT 04831580).

Interestingly, the recently published MEMORY study assessed the oncological outcomes at a multi-institutional basis between MIS and open radical hysterectomy showing that MIS did not appear to compromise oncological outcomes in a cohort of 1093 cases for analysis—715 MIS (558 robotic [78%]) and 378 OPEN procedures with 2009 FIGO stage IA1 (with lymphovascular space invasion) to IB1 cervical carcinoma (Leitao et al 2022) 3.

Sentinel lymph node mapping and detection

Nowadays, two predominant methods for detecting sentinel lymph nodes (SLNs) in cervical cancer are in use. The most conventional method is a combination of a radiotracer, technetium-99m (99mTc) and blue dye. More recently, another method for SLN mapping using indocyanine green (ICG) is becoming widely accepted. ICG is a fluorescent dye, visualized intraoperatively with near-infrared (NIR) fluorescence imaging, providing real-time visual navigation.

The presumed advantages of ICG over 99mTc, that is, being cheaper, non-radioactive and logistically more
From a surgical standpoint, Tanaka and colleagues investigated the outcomes of Robot-assisted modified radical hysterectomy (RAMRH) with removal of the lymphatic vessels (RLV) using indocyanine green that consists of a peculiar surgical management of SLN lymph node and its lymphatic vessels. The SLNs and lymphatic vessels were divided around the tissue. The lymphatic vessels should be removed from the intersection of the uterine artery and mesoureter for en bloc resection of the SLN and lymphatic vessel. Therefore, Baeten and colleagues initiated a prospective non-inferiority study with a paired comparison of both SLN methods in a single sample of 101 patients with the International Federation of Gynaecology and Obstetrics (FIGO) stage IA–IB2 or IIA1 cervical cancer receiving primary surgical treatment. All patients undergo SLN mapping with ICG and NIR fluorescence imaging in adjunct to mapping with 99mTc (including single photon emission computed tomography with X-ray computed tomography (SPECT/CT)) and blue dye. Surgeons start SLN detection with ICG while being blinded for the preoperative outcome of SPECT/CT to avoid biased detection with ICG. Primary endpoint of this study is bilateral SLN detection rate of both methods (i.e., detection of at least one SLN in each hemipelvis). Since we compare strategies for SLN mapping that are already applied in current daily practice for different types of cancer, no additional risks or burdens are expected from these study procedures (Baeten et al. 2022).

Evidence regarding robotic debulking surgery in women with advanced or relapsed ovarian cancer is scarce and only limited to small case series. In 2011, Magrina et al. [7] reported a comparison of the surgical and oncological outcomes of 76 women with advanced stage disease operated by robotics (25 cases), laparoscopy (27 cases), or laparotomy (119 cases). Patients were classified according to the number of major procedures performed in addition to hysterectomy, oophorectomy, omentectomy, and removal of peritoneal nodules (Type I debulking). Type II included one additional major procedure such as any type of bowel resection, full-thickness diaphragmatic resection, partial liver resection, and splenectomy. Type III debulking included patients with two or more additional major procedures to hysterectomy. These results were recently mirrored in a study by Pereira et al. whose aim was to evaluate the type of surgical approach at interval debulking (ID) after three courses of carboplatin and taxol in patients with unresectable ovarian cancer at diagnosis, compared with the type of surgical approach at primary debulking (PD). A secondary objective was to compare the perioperative outcomes of MIS vs. laparotomy at ID. A retrospective review of the type of surgical approach at ID following three courses of carboplatin and taxol was compared with the surgical approach at PD, and a review of the perioperative outcomes of MIS vs. open at ID was performed during the period from January 2012 to January 2013, for stage IIIC > 2 cm or IV epithelial ovarian cancer (EOC) unresectable at diagnosis and the surgical approach at PD. The authors found that MIS, laparoscopic or robotic, was used in 21.6% of patients at ID and in 23.3% of patients at PD. At ID, MIS patients had a shorter hospital stay as compared to laparotomy (2 vs. 8 days; p < 0.001). At 5 year follow-up, 31.5% of EOC patients were alive (ID MIS: 47.5% vs. ID open: 30%; PD MIS: 41% vs. PD open: 28%), while 24.4% had no evidence of disease (ID MIS: 39% vs. ID open: 19.5%; PD MIS: 32% vs. PD open: 22%). Among living patients, 22% had evidence of disease (Pereira et al. 2022).

Advanced ovarian cancer

Robotic surgery has been shown to provide perioperative patient advantages and similar cure rates for the treatment of endometrial and cervical cancer. There has been increasing interest in studying its role in ovarian cancer. Some studies have shown a favorable role in the staging of early disease as well as for the performance of primary or secondary cytoreduction in highly selected patients.
Pelvic organs prolapse surgery

Several technical alternatives to repair mesh using laparoscopic sacrocolpopexy exist. Recently our group of research described the outcomes and surgical technique of robotic-assisted colpo-/cervicosacropexy using a standardised suturing scheme to repair the mesh. We retrospectively reported data of 60 consecutive cases of robotic-assisted colpo-/cervicosacropexy using a standardized suturing design.

We placed three non-absorbable stitches on the cervix or three absorbable stitches on the apex of the vaginal vault, six long-term absorbable stitches on the anterior vaginal wall deep to the basis of the vesical trigone, six similar posterior stitches with the deeper row of sutures down to the levator ani plane and three non-absorbable stitches on the sacral promontory as the cranial support for Y-shaped polypropylene mesh. Median operative time was 188 ± 43 min.

All the procedures were successfully performed using a Da Vinci Si platform in a three-arm configuration, and no conversion to open or traditional laparoscopic surgery was needed. The length of hospital stay was 1.2 ± 1.7 days, and no readmission within 30 postoperative days was reported. At a follow-up of 12 and 24 months, no case of extrusion or exposure of the mesh occurred, and the retreatment rate was 6.7%.

Our suturing technique is safe and effective, with negligible risk of complications and good medium-term results. It is plausible that robotic systems may facilitate precise, accurate and reproducible placement of the stitches, thereby favoring wider diffusion of minimally invasive treatment of advanced prolapse (Giannii et al 2022).

In a recent paper by Zhai and colleagues, the authors presented the key technical points of robot-assisted uterine transplantation by analysing and summarising their surgical experience and other successful cases of robot-assisted uterine transplantation.

This study provides an evidence-based reference for clinicians planning robot-assisted uterine transplantation procedures, summarising the surgical experience and presenting the technical highlights of robotic-assisted uterine transplantation to provide an evidence-based reference for physicians planning to perform this type of operation.

The investigators emphasised that minimally invasive technologies can shorten the operation time, reduce injuries, and contribute to analysing the anatomy of complex blood vessels. Therefore, robot-assisted uterine transplantation seems to be an important direction for the future of uterine transplantation, and the findings and procedures reported herein contribute to the standardisation, promotion and dissemination of robot-assisted uterine transplantation operations (Zhai et al).

New technologies and future challenges: augmenting visualisation for surgical navigation

The use of Artificial Intelligence (AI) in both robotic and traditional laparoscopic surgery is expected to have a significant impact on future surgical training as well as enhance the surgical experience during the procedure. Both aim to realise precision surgery and thus to increase the quality of surgical care. Superimposition of computer-generated images (CGI) on real-world image captured by a camera and displacing the combination of these on a computer, tablet, PC or a video projector or to use a special head-mounted display (HMD ex. Smart glasses).

Molecular imaging is one of the pillars of precision surgery. Its applications range from early diagnostics to therapy planning, execution, and the accurate assessment of outcomes. In particular, molecular imaging solutions are in high demand in minimally invasive surgical strategies, such as the substantially increasing field of robotic surgery (Wendler et al. 2021).
Impact on teaching and training programmes

In this view, modern, automated and objective approaches for assisting this learning process such as AI could play an important role when encompassed with novel robotic systems. Conversely, the same technologies may aid surgeons by enhancing their interpretation of the surgical field as demonstrated by using augmented (AR) and virtual reality (VR). AI entails computers that are trained to solve problems by mimicking human cognition.

Machine learning (ML) and deep learning (DL) models are subfield of AI that allow the computer to make predictions based on underlying data patterns - thus improving the general decision-making process by decreasing the error rate.

Considering that the latest development in medical images technologies focuses on the acquisition of real-time information and data visualisation, improved accessibility of real-time data is becoming increasingly important as their usage often makes the diagnosis and treatment faster, more reliable and safer. This appears to be particularly relevant in robotic surgery, where the real-time access to 2D or 3D reconstructed images during ongoing surgery could prove to be crucial. This access is further enhanced by the introduction of AR as a fusion of projected computer-generated images (CGI) and real environment. Consistent analysis of the integration of AR or VR methods that can help enhance the current surgical experience and future surgical training programmes with the aim to realise precision surgery and to increase the quality of general surgical care can translate into better clinical outcomes.

For cancer surgery, low-cost simulators and multimodal materials obtained by pre-operative 3D reconstruction of patient-specific lymph nodes anatomy and images obtained by intra-operative navigation may enhance anatomical knowledge and confidence, in trainees in lower-resourced settings, even for those with limited or absent AR or VR experience; thus reinforcing anatomical and clinical knowledge acquired through other canonical modalities. These new instruments for teaching purposes and enhanced learning may be particularly valuable when mentored learning opportunities are limited.

In conclusion, robotic surgery is increasingly used during major gynaecological interventions. Its implementation strengthens the concept of precision surgery, which is a step towards a transition to effective treatment with minimal invasiveness for the patients. Increasing the surgical accuracy via robotic technical applications comes with an increased technical complexity.

In general, the production of systems based on AI may offer an opportunity to provide tailored gynaecological cancer surgical skill development to young gynaecological surgeons and trainees in resource-limited settings where the lack of sufficient training and mentorship opportunities may limit surgical oncology skill development and access to cancer surgery care.

Thanks to pre-, intra-operative, educational technologies and novel tele-proctoring approaches; surgeons should then augment their decision-making intraoperatively based on real-time analysis of intraoperative progress that integrate electronic medical record data with operative video, vital signs, instrument/hand tracking, and electrosurgical energy usage.

In conclusion, robotic surgery is increasingly used during major gynaecological interventions. Its implementation strengthens the concept of precision surgery, which is a step towards a transition to effective treatment with minimal invasiveness for the patients. Increasing the surgical accuracy via robotic technical applications comes with an increased technical complexity.

This means that achieving surgical proficiency requires the necessity developing of more advanced training models both in benign and malignant gynaecological pathology settings.
References:


WHAT DOES YEARS STAND FOR?

Years stands for the Young European Advocates of Robotic Surgery. It is practically a sub-discipline of SERGS which focuses on junior robotic surgeons.

HOW DID THIS IDEA FIRST START?

Dr Thomas Ind was the first to envision this new society. He was well aware of all the difficulties and needs of robotic surgeons at the beginning of their careers, so a few years ago Years was established.

WHAT ARE YOUR INITIATIVES?

A year ago, we established the YEARS council which consists of 9 members.

Each member is responsible for one sector of activity. We have engaged in social media (you can find us on Instagram and Twitter), we organise surveys, webinars and it is in our future plans to present an interactive and up to date YEARS session at the upcoming congress of SERGS, in Athens, Greece.

WHAT IS THIS YEARS SESSION?

In every SERGS meeting, a 3-hour YEARS session is organised. The topics focus on robotic training options, SERGS certification and surgical techniques for robotic advocates in gynaecology.

ARE THERE GOING TO BE ANY SOCIAL ACTIVITIES AT SERGS MEETING IN ATHENS?

It is the first time that a YEARS social event will be organised by the seacoast of Athens Riviera. An idyllic place in which all YEARS council members will get to know juniors as well as peers, exchange ideas and relax next to the sea.

WHAT ARE YOUR FUTURE PLANS?

Getting bigger, getting better. We want to include members from all over Europe and overseas. Getting lots of young robotic surgeons together, we can achieve better training opportunities, funding of training options, and create and enhance a network of people who motivate each other to become better professionals.

Follow us on social media: years.network (Twitter) years.network (Instagram)
The futuristic, wholistic and multidisciplinary 3-day scientific programme opened with an outstanding plenary lecture titled “From Boole to Artificial Intelligence (AI) – Back to the Future” which was the theme of the meeting. George Boole was the first professor of mathematics in University College Cork (UCC), appointed in 1849. His work laid the foundations for the development of modern computing and artificial intelligence. This lecture was delivered by Prof. Barry O’Sullivan, a world-renowned expert on AI. In his lecture Prof. O’Sullivan took us through the development of AI, its current impact on society and the potential impact it could have on surgery and society in general.

The first scientific session was on the theme of the future of surgery. In this session we heard from experts on the potential future directions which robotic surgery might take. We heard from Prof. Mark Campbell on the application of transcranial direct current stimulation (tDCS) neurostimulation to enhance surgical performance. Prof Shafi Ahmed, arriving just in time on a small plane he flew himself from the UK, gave a fantastic lecture on the application of web 3.0 and the metaverse to surgery and surgical teaching. Prof Michael O’Riordan, professor of colorectal surgery in UCC, gave a lecture on the ethical dilemma of applying AI to healthcare.
The day concluded with a session on urogynaecology which finished with a lively debate between Professors Chris Maher, from Australia, and Catherine Matthews, from the US, on laparoscopic versus robotic approach for sacrocolpopexy.

Day 2 of the scientific programme kicked off with the first oral abstract presentations. The highlight of this session was an abstract presented by Dr Anu Amirthanayagam of her study on the impact of surgery on surgeon health, which was awarded the SERGS best oral presentation prize. Another highlight from day 2 was a session on evidence-based surgical training. This session included lectures from expert surgical trainers but also from Captains Karl O’Neill and Niall Downey of Aer Lingus who spoke about evidence-based training in aviation and how it can be applied to surgery.

Day 2 concluded with sessions on various topics within gynaecological oncology and benign gynaecology. Attendees of these session heard from a wide range of experts who gave state of the art lectures on current topics and controversies in these areas. This included Mr Arvind Vashist, an endometriosis expert who talked about the British Society of Gynaecological Endoscopy’s (BSGE) experience of setting up and making the best use of their surgical database, and how the SERGS-BIARGS could learn from that.

Day 3 of the conference began with excellent oral abstract presentations with speakers from the UK, France, Italy, Greece and Spain. One of the highlights was Dr Ailin Rogers’ presentation, colorectal surgeon, on her experience of undergoing a comprehensive multidisciplinary robotic pelvic fellowship and how that impacted her experience as a consultant. The conference was closed with an address from SERGS president Mr Thomas Ind. Dr Vasiliki Chatzirafail then launched the SERGS conference for 2023 in Athens, Greece with a video showcasing Athens and their plans for the conference next summer.

YEARS:

The Young European Advocates of Robotic Surgery (YEARS) activities started before the actual conference proceedings with Dr Dina El-Hamamsy, East of England gynaecology trainee with interest in Robotic Urogynaecology, accepting Prof. Barry O’Reilly’s generous invite of spending a day in the operating theatre and observing robotic suture sacrohysteropexy procedure. Following this, YEARS hosted a preconference workshop in the ASSERT Surgical simulation centre in UCC. This preconference workshop consisted of three lectures from expert surgeons. Dr Matt Hewitt spoke about robotic theatre set-up, Dr Thomas Hebert presented a step-by-step approach to robotic hysterectomy and Dr Manou Kaur spoke about communication and management of complications. Participants had the opportunity for discussion with the experts after each lecture session. All participants then got the opportunity for hands-on experience on the robotic surgery.
simulators. These state-of-the-art simulators, provided by Surgical Science, allowed participants to develop their surgical skills. Participants were then tested in accordance with the SERGS level 1 curriculum to certify their basic competence. Participants in the workshop had very positive feedback and we would encourage any young surgeon who is interested to attend the preconference workshop in Athens this summer!

The YEARS scientific programme took place just before the formal opening of the conference on the morning of day 1. This event, highlighting young gynaecological surgeons, was very well attended and was a great success. Attendees heard from Dr Thomas Hebert about the new SERGS/Gynaecological Endoscopic Surgical Education and Assessment (GESEA) pathway for certification as a robotic gynaecological surgeon. Dr Tom Coia also provided an overview of the new UK Royal College of Obstetricians and Gynaecologists (RCOG) robotic Advanced Skills Module (ASM) certification pathway. Attendees also heard from experts on tips and tricks for becoming young experts in urogynaecology, gynaecological oncology and complex benign gynaecology.

The YEARS council was also formed for the first time at SERGS 2022. Membership of the council was drawn from young surgeons with an interest in robotic gynaecological surgery from all over Europe. The council have been meeting throughout the year working on projects to promote young robotic surgeons and to develop the YEARS session for SERGS 2023 in Athens.

Exhibitions and industry sponsors:

The excellent scientific programme was complemented by a wide range of exhibitions from industry sponsors. Attendees were able to get hands on experience with the Versius and Hugo robots at the Cambridge Medical Robotics (CMR) surgical and Medtronic stands respectively. The Hominis transvaginal surgical robot, by MEMIC Innovative Surgery, was also available for attendees to try out. These stands were busy all throughout the conference with participants eager to get hand-on experience with the new robotic platforms. Surgical Science were also present with a wide range of robotic surgical simulators to try out. Conmed were present to exhibit their Airseal technology allowing for lower intra-abdominal operating pressures during robotic procedures. DA Surgical and PEI were also present exhibiting a range of patient positioning solutions for the robotic operating theatre.

Social programme:

Alongside the excellent and wide-ranging scientific programme was a lively and enjoyable social programme available for attendees. First, the YEARS group met after the preconference workshop for dinner and drinks at Cork’s famous Franciscan Well Brewery. This was a fantastic evening enjoyed by all. The main conference social event was a BBQ at the Kingsley Hotel on the banks of the river Lee. Attendees were also treated to a fantastic display of Irish music and dance from the Quercus scholars from UCC. Many even got to try out some Irish dancing for themselves! Following the conclusion of official proceedings, many delegates headed out to the local market to buy souvenirs of local produce or went further afield sightseeing this picturesque and historic part of Ireland.
Dr Chatzirafail, could you refer to your role at the upcoming 15th Annual SERGS meeting?

By way of introduction, I am Vasiliki Chatzirafail, the chair of the 15th Annual SERGS Meeting, which will be held in the Eugenides Foundation Planetarium in Athens between the 8th and 10th of June 2023.

Can you give us some details about the event?

This year’s meeting will take place in the Eugenides Institution of Athens Planetarium (National Observatory of Athens). It is a research institute which consists of a central 278-seat Amphitheatre with an enormous spherical dome for digital 3D projections and peripheral conference rooms suitable for hosting international conferences.

We expect academic speakers, top experts in the field of robotic gynaecological surgery, gynaecologists, as well as fellows, students and nurses from all over Europe and around the world.

The scientific programme starts with YEARS session which is focused on young advocates who wish to pursue a career in robotic surgery.

There is an opportunity for training sessions and exams, and for novices who wish to be certified as a console surgeon, by SERGS.

During the Meeting we will go through a variety of topics including educational videos, and innovative techniques, and different types of robotic systems will be exhibited on-site.

Is this robotic meeting addressed solely to gynaecologists?

Not at all. The meeting is focused on gynaecological robotic surgery, but this time we will include urologists and general surgeons, who wish to come and get trained with the different robotic systems which will be on display. They could also participate in the exams and get certified as console surgeons.

Can you enlighten us about the SERGS certification?

This year, pre-course training courses will be delivered prior to the exam certification day. Surgeons who wish to be certified may choose to follow
the training course on 3 different dates, or even repeat it more than once.

The certification exam will take place during the first day of the congress. More info can be found at SERGS official website: www.sergs.org.

Are there any social events included?

Alongside the intensive training programme, participants can walk through antiquities in the Acropolis Museum, relax at the YEARS party on the coast of Athens and enjoy a dinner with local delicacies and traditional music. For those who have some extra time in Athens, there are one or half day guided excursions that they can book onsite, or through the SERGS website.

Dr Chatzirafail, if you would choose an epilogue for this interview, what would it be?

The city of Athens, the Eugenides Foundation, and the family of SERGS is looking forward to welcoming you all! Do not miss it.
TRAINEES OR FELLOWS UNDER 45?
JOIN YEARS
Young European Advocates of Robotic Surgery

WWW.SERGS.ORG/YEARS
16th Annual SERGS Meeting
June 6-8, 2024 Madrid, Spain

See You in Madrid!
conference.serger.org

Society of European Robotic Gynaecological Surgery
www.serger.org

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