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Letter to the Editor

Practical Considerations Regarding Recommendations for an Educational Program in Robot Assisted Gynaecological Surgery

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Robot assisted gynaecological surgery is exponentially expanding its field and gynaecologists need to be prepared to implement this new approach in clinical practice. Training on this new device is thus mandatory but the method by which the training is best organized remains open for debate.

In 2019, 12 experts invited by the Society of European Robotic Gynaecological Surgery (SERGS), agreed on 39 recommendations about education in robot-assisted surgery (RAS) in gynaecology. The same was done by the British and Irish Association of Robotic Gynaecological Surgeons (BIARGS) in 2020 [1]. The idea of these consensuses was to offer a guidebook for the development of a curriculum or a guideline to standardise the education for RAS [2] to improve surgical quality and outcome.

With the increasing use and applicability of the RAS in gynaecology, the need for a uniform guideline and consequently a standardised educational program is raising. The consensus recommendations are a first step in the direction of a standard curriculum.

The European Association of Urology Robotic Urology Section (ERUS) was the first to develop a stepwise curriculum. They are viewed as a leading discipline in RAS education.

The expert panel agreed on modular training and training on different platforms, taking into account the available literature [3]. Although some of these recommendations are applicable in an ideal situation, implementation in everyday education could be challenging because some practical issues were not considered as discussed next.

What about Future Robotic Systems?

The first and widely used robotic system is Da Vinci from Intuitive systems. However, in recent years, other companies also developed robotic systems. Hugo® (Medtronic) and Ottava® (Johnson&Johnson) are examples of these new robotic systems, which will be available in the near future. It has already been mentioned that a future curriculum should not focus solely on a specific simulator, model or robotic system only [3]. Nonetheless, each robotic system requires its own specific knowledge and skillset to work safely. Knowledge of the specific system you're working with, is as important as the robotic surgical skills themselves. This duality is something to consider when setting up teaching programs. Should the education therefor be separated into a common and a system-specific part, considering the existence of different robotic systems?

The general training should be organised in the training centres based on standards of the created guidelines, independent of the manufacturer. This is in contrast to the brand or system-specific trainings, which could be organised by the manufacturers themselves. So, a complete full training with each new system should be avoided and only be focussing on the device-specific modalities. As these new systems will come to the market and as only system-specific training will be required one can question if previous learning curves on full procedures where ever necessary to be allowed on the device. If a surgeon is competent to perform a certain procedure laparoscopically, perhaps only getting acquainted with the device is necessary instead of a completely new learning curve for this procedure as this will also be true for future robotic devices.

Surgical Education as Resident

With the increasing use of RAS in gynaecology, the amount of vaginal and laparoscopic surgery is inevitably decreasing. Any resident gynaecology needs to achieve volume-based criteria in the different surgical fields to complete his or her education. Should we adjust the volume-based criteria for e.g., vaginal hysterectomy and total laparoscopic hysterectomies following this shift to robotic surgery? Furthermore, we should question if basic RAS education should be implemented in the resident education program. The BIARGS did a national survey among residents, which showed interest in gaining robotic skills. The establishment of a uniform educational program for RAS demands for defining the target audience. Practicing surgeons using RAS gained their skills during subspecialty training or as senior clinical fellowship. We should consider whether basic RAS skills should be implemented in the educational program of every gynecological resident or as an optional training. As laparoscopy in the beginning was also a technique used only in specialized centers it is now mainstream surgery practiced by all. The BIARGS did split their recommendations into competencies for a first assistant and console surgeon [1]. The requirements for a first assistant sound achievable and possible to implement in the standard gynecological education, bearing in mind that not all residents work in hospitals with access to RAS.

Evaluation Methods

Continuous evaluation and feedback are essential in a learning process. The experts agreed on evaluation of the full procedure technique with a submitted video to certified independent examiners. This evaluation should be completed with a validated standardized scoring system (e.g., Robotic Skills Assessment Score (RSA-Score) [2,4].

This digital method doesn't allow the evaluator to see the live hand technique at the console, which is an important part of the evaluation. Live evaluation by a mentor offers additional opportunities for adjustment of the technique [5]. Apart from the video-evaluation, we shouldn't fail to appreciate the importance of the real-live evaluation, which also allows for immediate feed-back.

In the pilot project of SERGS, they noticed that feedback was often open and not structured as envisioned in the recommendations. Trainers seem not familiar using competency-based assessment tools. This is however an important part of proper education as safety during surgery can only be achieved with the right competence.

When implementing a new program, the trainers need training as well to get familiar with the envisioned evaluation [6].

Accessibility to Basic Training

With increasing use of the robotic systems, the basic training needs to be widely accessible. The experts agreed on basic simulation training, including virtual reality (VR) simulation, dry lab training and wet-lab training [2]. The commonly used simulator, 'Da Vinci Skills Simulator' by Intuitive, runs on the 'Da Vinci master console' and is only available for simulation when it's not used in the theatre [7,8]. The robotic systems are expensive and in high clinical demand, which compromises the available training time [9]. This means limited access for VR simulation training for all trainees.

Access to cadavers and living animals for lab training is even more limited. This method of training can only be organised by hospitals linked to labs. So, if the goal is to create an accessible basic training, limitations in accessibility should be solved.

Trainee Point of View

The SERGS invited experts in RAS to reach a consensus about education in RAS. They didn't involve the opinion of trainees. The guidelines of BIARGS undertook a survey to explore their interest, which showed interest of the trainees to gain skills in robotic surgery by undertaking training as discussed earlier [1].

Vetter et al. performed an online questionnaire for residents regarding their RAS training [8]. Trainees identified dual-assist training as being the most useful. In the consensus of SERGS, this method was not mentioned and could serve as enrichment. Another observational study with 34 trainees in France confirmed that the use of dual-assist is regarded as helpful [10].

It is reasonable not to include it as requirement in the education, because dual-assist is not available in all hospitals performing RAS.

Whether a trainee should be trained for instance in a laparoscopic or open hysterectomy before being trained in robot assisted hysterectomy remains to be answered. As new techniques emerge, old techniques will subside. A classic open technique seems however important to keep as a fail-safe method.

Future Training Models

The traditional training model of Halsted, accumulated in the phrase: "see one, do one, teach one", is based on the fact that the proctor guides the resident. A new approach where the resident should pass some well-defined benchmarks before being allowed to the next step in training is being studied in a prospective randomized trial

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regarding vesico-urethral anastomosis (ClinicalTrials.gov NCT04786834). It is hypothesized that benchmark learning will increase the proficiency of the resident and will lead to better training outcomes when compared to Halsted's method. In the near future training will probably switch to this when the hypothesis will be confirmed.

Conflicts of Interest

One of the authors is a co-writer of the original article.

Author Contribution

K. De Vocht: Manuscript writing/editing, J. Verguts: Manuscript writing/editing.

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