

Excellence needs training “Certified programme in endoscopic surgery”

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Abstract

The complexity of modern surgery has increased the demands and challenges to surgical education and quality control. Today the endoscopic approach is preferred because it increases the surgical possibilities and decreases patient discomfort. Implementing endoscopic surgery without specific training leads to decrease in surgical performance and increase in patient morbidity and mortality.

Research of the European Academy for Gynaecological Surgery (+he Academy) has resulted in the establishment of a structured certification and diploma programme with three levels of expertise. One level should be passed to obtain access to the next level. Furthermore one should first pass +he Academy skill exam before entering the clinical surgical competence programme.

The European Society for Gynaecological Endoscopy (ESGE) has defined the different diplomas, whereas the Bachelor diploma is seen as a prerequisite to start the in OR one to one clinical training aiming to provide endoscopic skilled individuals to the clinical one to one training.

Further diplomas are the Minimal invasive Gynaecological Surgeon (MIGS), master in hysteroscopy and the laparoscopic pelvic surgeon.

This programme is based on the best available scientific evidence. It counteracts the problem of the traditional surgical apprentice tutor model and increases patient safety and surgical performance. It is seen as a major step toward standardization of endoscopic surgical training in general.

Key words: Certification, diploma, endoscopic surgery, hysteroscopy, laparoscopy, training.

Introduction

Since the early 1990s, laparoscopic surgery has been implemented in nearly all surgical disciplines. On one hand, it offers the possibility to improve the surgical outcome and patient compliance, but on the other hand, it demands the surgical community to train and acquire specific skills. The laparoscopic surgeon needs to work in a keyhole environment, it demands the ability of depth appreciation on a two-dimensional screen, hand-eye coordination, bimanual coordination, ambidexterity, and handling long instruments from a fixed position and the surgeon has no tactile feedback. Laparoscopic techniques might even be related to an increased patient's morbidity and mortality if not performed by properly trained surgeons (Van der wal, 2007;

Campo et al., 2012a; Gala et al., 2013; Palter et al., 2013).

Training in surgery is challenged and it seems logical, but not yet implemented that a future laparoscopic surgeon needs to have specific theoretical and practical knowledge and skills prior to perform a laparoscopic surgical intervention.

A structured educational concept is needed and should provide an answer to the problem of the excessive long learning curves in the operating room, the limited accessibility of theoretical and practical endoscopic learning programmes and the lack of a universal accepted and validated system of certification and credentialing.

The apprentice-tutor model was useful for many years, but the complexity of the modern surgical technology requires specific skills, to be

IMPORTANT RECOMMENDATION ON ENDOSCOPIC TRAINING AND QUALITY ASSURANCE

As professional organizations we strongly recommend that each hospital teaching endoscopic surgery should make available an endoscopic dry lab for training and improving the proficiency of the endoscopic surgery skills of the physician.

Evidence is provided that dry lab training prior to training in the OR, reduces patients' morbidity and mortality in all endoscopic surgical disciplines, and as such the skill testing infrastructure should aim for multi-disciplinary usage.

ESGE

EBCOG

EAGS

ENTOG

ACOG

AAGL



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1. Palter VN, Orzech N, Reznick RK, Grantcharov TP. Validation of a structured training and assessment curriculum for technical skill acquisition in minimally invasive surgery: a randomized controlled trial. *Ann Surg.* 2013 Feb;257(2):224-30.
2. Gala R, Orejuela F, Gerten K, Lockrow B, Kilpatrick C, Chohan L, Green C, Vaught J, Goldberg A, Schaffer J. Effect of validated skills simulation on operating room performance in obstetrics and gynecology residents: a randomized controlled trial. *Obstet Gynecol.* 2013 Mar;121(3):578-84.
3. Molinas CR, Campo R. Defining a structured training program for acquiring basic and advanced laparoscopic psychomotor skills in a simulator. *Gynecol Surg.* 2010 Nov;7(4):427-35.
4. Burden C, Oestergaard J, Larsen CR. Integration of laparoscopic virtual-reality simulation into gynaecology training. *BJOG.* 2011 Nov;118 Suppl 3:5-10.
5. Hur HC, Arden D, Dodge LE, Zheng B, Ricciotti HA. Fundamentals of laparoscopic surgery: a surgical skills assessment tool in gynecology. *JSLs.* 2011 Jan-Mar;15(1):21-6.
6. Campo R, Molinas CR, De Wilde RL, Brohm H, Brucker S, Mencaglia L, Odonovan P, Wallwiener D, Wattiez A. Are you good enough for your patients? The European certification model in laparoscopic surgery. *Facts Views Vis Obgyn.* 2012;4(2):95-101.

Fig. 1. — Joint recommendation on endoscopic training and quality assurance

taught also outside of the operating theatre. Based on the newest clinical and scientific evidence, the European Society of Gynaecological Endoscopy (ESGE) together with the leading European and American professional organizations have recommended in a joint statement that every hospital should provide dry lab endoscopic training and testing as a means to enhance the quality of patient care (Gala et al., 2010; Campo et al., 2010, 2012b; Burden et al., 2011; Hur et al., 2011; Palter et al., 2013) (Fig. 1).

The ESGE has furthermore in collaboration with the European Academy of Gynaecological Surgery (+he Academy), elaborated a well-balanced diploma curriculum, called Gynaecological Endoscopic Surgical Education and Assessment (GESEA) programme (EAGS, 2014; ESGO, 2014). The programme is founded on the evidence that an endoscopic surgeon requires 2 different skills sets. On one hand, the instrument handling skills and on the other hand, the surgical competences. The endoscopic skills follow a different learning path than the surgical, it is a learning process like swimming which does not require the presence of a

highly skilled endoscopic surgeon but the ability remains over a long period of time. It is seen as a necessity to master those skills prior to the in OR surgical training programme (Campo et al., 2010, 2012a, 2012b; Molinas et al., 2010; Palter et al., 2013).

Surgical competence is a continuous learning process and follows the learning characteristics of learning a language; it takes advantage of the one to one learning with a highly skilled surgeon and demands for continuous practice and experience.

The GESEA diploma programme has integrated those findings in a structured, educational training route trying to provide an answer to the current challenges of surgical education (EAGS, 2014; ESGO, 2014).

Certification and Diploma in endoscopic surgery

The GESEA programme is based on 3 levels of expertise and for each level different areas of competence have to be achieved in a well-defined ranking order, first the certificate exam has to be passed hereafter one can accomplish the

Winners 1st Star Bachelor ★	LASTT SUTT - E-knot HYSIT	TESTT 1	LASTT SUTT 1 HYSIT 1 →	<i>Certificate 1</i> Bachelor in Endoscopy	Observer Observation of 30 endoscopic procedures. Self-testimonial, no official document required.	ESGE annual congress or +he Academy workshops eg. OME points will be determined by EBCOG / UEMS.	<i>Level 1 Diploma</i> ESGE Bachelor in Endoscopy
Winners 2nd Star Minimal Invasive Gynaecological Surgeon ★★	LASTT SUTT - E-knot HYSIT	TESTT 2	LASTT SUTT 2 HYSIT 2 →	<i>Certificate 2</i> Minimal Invasive Gynaecological Surgeon	First Surgeon 50 ESGE level 3 laparoscopies 50 ESGE hysteroscopies, 10 myomectomy, 10 endometrial ablation, 20 polypectomy and 10 miscellaneous of ESGE level 2 or 3. Maximum period of 5 years. Official document required.	Annual presence at recognised endoscopic congress. Minimum attendance at one advanced endoscopic workshop.	<i>Level 2 Diplomas</i> ESGE Minimal Invasive Gynaecological Surgeon
Winners 3rd Star Master ★★★		TESTT 3a TESTT 3b	SUTT 3 HYSIT 3 →	<i>Certificate 3</i> Laparoscopic Pelvic Surgeon Master in Hysteroscopy	Laparoscopic Pelvic Surgeon 50 level 4 laparoscopies. Master in Hysteroscopy 10 type 1 myoma, 10 type 2 myoma, 10 uterine septum, 5 Tulerus, 5 Placental remnants, 5 Asherman, 5 miscellaneous like Adenomyosis, Fetoscopy or sectio scar surgery. Maximum period of 5 years. Official document required.	Annual presence at recognised endoscopic congress. Annual attendance at one advanced endoscopic workshop as tutor.	<i>Level 3 Diploma</i> ESGE Laparoscopic Pelvic Surgeon ESGE Master in Hysteroscopy

Fig. 2. — Overview of +he Academy certification and ESGE diploma programme



Fig. 3. — LASTT training and testing method

requirements for the diploma of the corresponding level (Fig. 2).

First level refers to the Bachelor in Gynaecological surgery

Second level refers to the Minimal Invasive Gynaecological Surgeon (MIGS)

Third level refers to the Master in Hysteroscopy and the Laparoscopic Pelvic Surgeon.

Bachelor Diploma

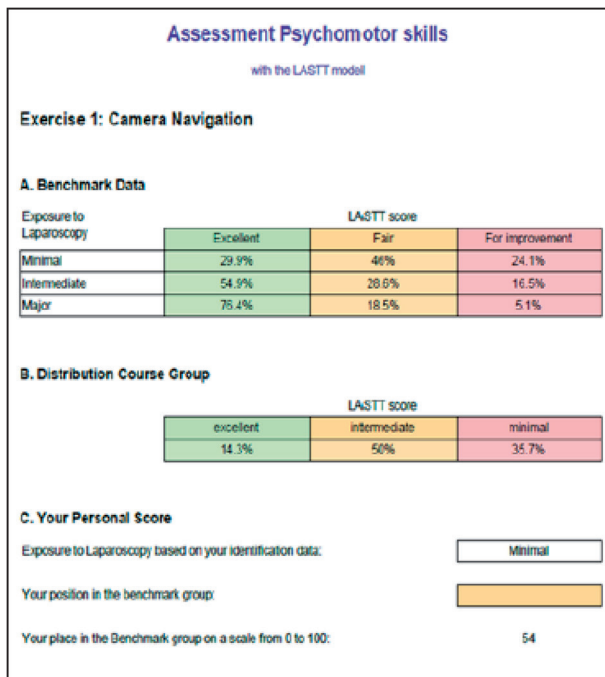
1. Get your theoretical Star

The entry gate to the programme is a free online e-learning tutorial programme made by +he Academy winners project and published on the virtual university of WeBSurg. Each tutorial is followed by a quiz session and after accomplishing all the questions correctly the first star of your curriculum is achieved.

2. Get trained and tested in endoscopic skills

Every endoscopic surgeon needs a minimum of practical skill lab training before going into the OR. It is scientifically proven that it improves endoscopic surgical performance in the operating room, increases patient's safety and improves the surgical learning process. The practical training and testing models of +he Academy seems to correlate very well with the necessary skills required for laparoscopic surgery.

The current scientific evidence shows that full acquisition of laparoscopic psychomotor skills tested with the LASTT method (Fig. 3) facilitates the acquisition of more complex laparoscopic tasks like knot tying tested with the SUTT method. Even more important is the observation that training programs on knot tying only are insufficient to acquire the full proficiency in laparoscopic instrument handling and as such a structured training and testing programme should be provided (Campo et al., 2010, 2012a, 2012b; Molinas et al., 2008, 2010). A web based scoring platform provides the necessary training progress reports, benchmarking



Example:
exercise 1 camera navigation-group performance,
benchmark and individual position.

Fig. 4. — Online scoring platform example

with positioning of individuals in relation to the peers. This online scoring platform (OSP) with validated benchmark data is the instrument for self and group evaluation. For each exercise the individual can receive his or her position to one of the 3 groups of excellences and whitening the group an individual ranking serves as a personal motivator the training process and exam preparation (Fig. 4).

3. Get +he Academy Bachelor Certificate

+he Academy has developed a certification programme consisting of a theoretical multiple choice exam called TESTT 1® and one session of three different practical exams the LASTT® for measuring the Laparoscopic Instrument handling skills, the SUTT 1® for measuring the basic stitching and knotting skills and the HYSTT 1® for measuring the basic hysteroscopic handling skills. Only if the mentee passes both the theoretical and practical exams, +he Academy Bachelor Certificate is received - this is the obligatory prerequisite to apply for the GESEA Bachelor Diploma. It is also seen as the minimal requirement a surgeon should have before entering in the one to one in OR training.

4. Bachelor Diploma

ESGE has defined that to become a Bachelor in endoscopic surgery, exposure to 30 procedures as

an observer or in OR assistant and the attendance of a recognised workshop or congress in endoscopy is required.

Further diplomas

The same principles are used to enter and accomplish the second and third level in which the diploma of Minimal Invasive Gynaecological Surgeon (MIGS) is seen as the reference for any Gynaecologist performing routine laparoscopic surgeries like hysterectomy and myomectomy and hysteroscopic surgeries like endometrial ablation, polypectomy and type 0 myomectomy.

The laparoscopic Pelvic Surgeon is trained in supplementary abdominal surgical procedures with vascular, intestinal and urological dimensions. The Master in Hysteroscopy deals with the more difficult hysteroscopic procedures like the Ashermann syndrome, Intra myometrial surgery, foetal surgery etc.

Discussion

The implementation of an educational training and certification programme in laparoscopic surgery is a real challenge.

The actual pressure surrounding the surgical practice imposes evidently a validated quality control program. This control starts by a standardization of the surgical training. The European Academy succeeded to elaborate a program of training and certification dealing with both the theoretical knowledge on instrumentation, OR organisation, anatomy and complication management, and the practical laparoscopic psychomotor skills, including suturing and knot tying skills. It remains without doubt that this is only the first but an important step in a professional training program in laparoscopic gynaecological surgery.

Teaching institutions have to organise multi-disciplinary endoscopic dry skill labs as scientific evidence is provided skill training prior to in OR surgical training, reduces patients' morbidity and mortality in all endoscopic surgical disciplines.

To bridge the current need for an appropriate, accessible and cost effective gynaecological learning programme in endoscopic surgery, a free of charge online distance learning programme was established. Recently also access to the practical training and testing tools is made available. The Laparoscopic Skills, Suturing and Hysteroscopic Training and Testing method (LASTT, SUTT and HYSTT) provides through a web based "Online Scoring Platform" (OSP) the necessary feedback to

mentors and individuals of their practical endoscopic skills training. A set of 10 exercises is now established for the 2 first levels and can be used in every dry skill lab at affordable cost. The research performed shows the validity of the exercises and demonstrates that the methodology used is independent of the presence of a high skill endoscopic surgeon and can be managed by an approved mentor. After training and testing to achieve the different certificates the European Academy for Gynaecological Surgery has established a standardised and universally implementable theoretical and practical exam. This exam is provided at the annual congress of the ESGE, its corporate member society congresses and at licensed centres that have passed the mentor exams and the centre audit.

Conclusion

The tremendous development of knowledge, the introduction of high technology in medicine and the obvious tendency to super specialisation provides a major challenge to our 'custodians of knowledge' such as universities and scientific Societies.

Not only patients, but also physicians have the absolute right of access to all available knowledge in a structured and validated way.

As a result of intensive research coordinated by the Academy with a multidisciplinary team of gynaecologists and surgeons, a unique structured training and certification programme in endoscopic surgery is established providing in an accessible way the first step in a global diploma programme in Gynaecological endoscopic surgery.

References

- Burden C, Oestergaard J, Larsen CR. Integration of laparoscopic virtual-reality simulation into gynaecology training. *BJOG*. 2011;118 Suppl 3:5-10.
- Campo R, Reising C, Van Belle Y et al. A valid model for testing and training laparoscopic psychomotor skills. *Gynecol Surg*. 2010;7:133-41.
- Campo R, Molinas CR, De Wilde RL et al. Are you good enough for your patients? The European certification model in laparoscopic surgery. *Facts Views Vis Obgyn*. 2012a;4:95-101.
- Campo R, Wattiez A, De Wilde RL et al. Training in Laparoscopic Surgery: From the Lab to the OR. *Zdrav Var*. 2012b;51:285-98.
- European Academy of Gynaecological Surgery (the Academy) Certification Project 2014, www.europeanacademy.org
- ESGE (European Society for Gynecological Endoscopy). European Diploma in Gynecological Endoscopic Surgery: Gynecological Endoscopic Surgical Education and Assessment (GESEA) Project. 2014, www.esge.org
- Gala R, Orejuela F, Gerten K et al. Effect of validated skills simulation on operating room performance in obstetrics and gynecology residents: a randomized controlled trial. *Obstet Gynecol*. 2013;121:578-84.
- Hur HC, Arden D, Dodge LE et al. Fundamentals of laparoscopic surgery: a surgical skills assessment tool in gynecology. *JLS*. 2011;15:21-6.
- Molinas CR, De Win G, Ritter O et al. Feasibility and construct validity of a novel laparoscopic testing and training model. *Gynecol Surg*. 2008;5:281-90.
- Molinas CR, Campo R: Defining a structured training program for acquiring basic and advanced laparoscopic psychomotor skills in a simulator. *Gynecol Surg*. 2010;7:427-35.
- Palter VN, Orzech N, Reznick RK et al. Validation of a structured training and assessment curriculum for technical skill acquisition in minimally invasive surgery: a randomized controlled trial. *Ann Surg*. 2013;257:224-30.
- van der Wal G. Minimal Invasive Surgery underestimated, Quality system for laparoscopic surgery, IGZ rapport, November 2007. <http://www.igz.nl/actueel/nieuws/riscosijkoperatiesonderschat.aspx>