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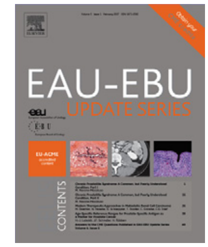

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Training in Laparoscopy

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Abstract

Objective: Training in laparoscopy is still a challenge for the urologic community. Surgeons in training must learn the laparoscopic techniques, possibly without having ever performed the conventional procedure. In the present study, we provide a nonstructured literature review pertaining to laparoscopic training and discuss the training design and the modular concept.

Methods: A thorough literature search was performed with the Medline database and different training procedures were analysed.

Results: Due to increasing time constraints, cost, stress, and ethical considerations, the modern operating room is not the ideal learning environment. Various simulators and models for laparoscopic training in urology and general surgery with different levels of validity and reliability are available. Wide acceptance of the use simulators has been hampered by the lack of standard and valid methods to measure and certify competence in basic psychomotor skills. Besides, it is unclear if trainees have enough access to these programmes and if they are sufficient enough to develop the required skills. Whether complex urologic procedures can be performed by beginners without open surgical expertise and whether experience in open surgery is definitely required before mastering laparoscopic techniques are still matters of issue.

Conclusion: The lack of a standardised, evaluated training procedure needs to be overcome. Structured training programmes and transference of gained experience into daily practice are essential to provide urology with expert laparoscopists.

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1. Introduction

Urologists initially used laparoscopy in the management of benign diseases for diagnostic (eg, cryptorchism) or completely ablative therapeutic maneuvers (eg, orchiectomy, nephrectomy). As their experience strengthened and technical modifications developed, urologic laparoscopy was applied in the treatment of malignancies and evolved from simple to technically demanding reconstructive techniques. The list of indications for laparoscopic treatment continues to grow and patients more frequently demand a choice in treatment options. As minimally invasive laparoscopy is being established, increased emphasis has been placed on training and education.

Various laparoscopic training programmes are available, but their efficiency is dubious. It is unclear whether trainees have enough access to these programmes and whether they are sufficient enough to develop the required skills. Furthermore, it has been recognised that the modern operating room, because of increasing time constraints, cost, stress, and ethical considerations, is not the ideal learning environment.

In general surgery, laparoscopy is the ''gold standard'' treatment option for cholecystectomy and antireflux surgery [1–3]. Advantages of minimally invasive approaches over conventional open surgery have been demonstrated for a plethora of other operations. There is a consensus among surgeons that laparoscopic procedures with low and middle level of difficulty are part of the general surgical training. Procedures such as laparoscopic cholecystectomy and laparoscopic hernia repair belong to the most commonly performed surgical procedures paving the way for the widespread use of laparoscopic techniques in general surgery [4]. In contrast, in urology there are no such high-volume procedures with low or middle level of difficulty [5]. Procedures with a low difficulty level, for example, laparoscopic varicocele repair, face the competition of other minimally invasive procedures such as the retrograde injection of sclerosing agents or embolisation. This had led to a slower development of laparoscopic procedures in urology.

Despite these difficulties, laparoscopic procedures became part of the standard armamentarium mostly in urologic centres with a special focus on laparoscopy. However, this development caused an additional challenge to the urologic community: surgeons in training will have to learn the laparoscopic techniques without having ever performed the procedure in a conventional way.

Although there is a growing consensus that laparoscopic techniques in urology are here to stay, the urologic community must address several concerns. The lack of training procedures needs to be overcome by structured training programmes (dry lab, animal lab), and the gained experience needs to be transferred into daily clinical practice. In addition, we need to investigate whether complex urologic procedures such as endoscopic/laparoscopic radical prostatectomy can be performed by beginners without open/conventional surgical expertise or whether experience in open surgery is definitely required before mastering laparoscopic techniques.

2. Training models for laparoscopy

A vast variety of simulators and models for laparoscopic training in urology and general surgery with different levels of validity and reliability are available. They vary widely in their platforms (physical or virtual reality), performance measures used (outcome based or movement based), and demonstrated validation level [6].

Physical simulators include a box trainer and real instruments (as used in the laparoscopic room). The materials used in these simulators can provide texture and behaviour similar to real tissues. The measurement method can be scored by a trained observer or by motion-tracking systems. The Southwestern Centre for Minimally Invasive Surgery Tasks, the 'Rosser' tasks, and the McGill Inanimate System for Training and Evaluation of Laparoscopic Skills (MISTELS) are the most common simulators of this category [7–10].

Virtual reality (VR) simulators are provided by computer systems and they allow objective measurements of user's hand placement and amount of pressure used. Most of the available systems are expensive and do not have tactile feedback. The Minimally Invasive Surgical Trainer-Virtual Reality (MIST-VR) and the Lapsim simulator are the most common virtual reality simulators [11–13].

Motion analysis uses a computerised tracking device to measure the movement of the used instrument or of the user's hand. The Imperial College Surgical Assessment Device (ICSAD) and the Advanced Dundee Endoscopic Psychomotor Tester (ADEPT) are some of the most extensively studied instruments for this purpose [14,15].

Animal models have also been used to improve advanced laparoscopic skills [16–19]. The transition from the ''dry lab'' to the ''wet lab'' should be an essential part of the training process of a laparoscopic surgeon. Cadaveric or animal training models offer a wide range of training applications. The anatomy of the pig is comparable to that of humans and thus constitutes a useful ''living model'' for enhancement of laparoscopic skills. The trainees can practice a wide range of procedures and deal with their complications in vivo. There are easy and more demanding tasks within the pig model training. Certainly, the performance of a laparoscopic nephrectomy requires less expertise than the vesicourethral anastomosis during a radical prostatectomy. The ''pig-living model'' is of paramount importance in the laparoscopic training process. Only if a procedure can be performed without any difficulty in the pig model should one start performing the same procedure in humans. The trainers should consider that the trainees may develop a falsely elevated impression of their ability in such wet lab courses [20]. Training with live animals is currently unavailable in some countries (eg, United Kingdom). In vitro and in vivo training models help urologists acquire basic laparoscopic skills such as hand-eye coordination, depth perception, and knot-tying. But advanced laparoscopic skills such as dissection, cutting, coagulation, and stitching need more sophisticated animal or human cadaver models [19]. Studies have been conducted by several investigators to estimate the impact of performing a laparoscopic procedure in animal models on the improvement of laparoscopic skills [16–18]. Recently, van Velthoven and Hoffman reviewed these different animal models regarding their advantages and disadvantages in acquiring advanced laparoscopic skills [19].

Wide acceptance of the use simulators, even for training purposes, has been hampered by the lack of standard and valid methods to measure and certify competence in basic psychomotor skills [21]. Most training devices such as pelvitrainers or VR simulators provide training capabilities with a focus on eye-hand coordination, targeting the proficiency of suturing and knotting techniques. The low cost of pelvitrainers has paved the way for their widespread use. We have adopted the use of a simple pelvitrainer consisting of a wooden box with two lateral ports for a needle holder and forceps, whilst a webcam and PC monitor are used to simulate a two-dimensional laparoscopic view of the operative field. A similar apparatus for laparoscopic training has recently been described by Beatty et al [22].

Chung et al developed an inexpensive pelvitrainer and evaluated its effectiveness [23]. Their webcam laparoscopic training device is composed of a webcam, cardboard box, desk lamp, and home computer. This homemade trainer was evaluated against two commercially available systems, the video Pelvitrainer (Karl Storz Endoscopy, Culver City, CA) and the dual mirror Simuview (Simulab Corporation, Seattle, WA). A total of 42 participants without prior laparoscopic training were enrolled in the study and asked to execute two tasks. Participants were randomly assigned to six groups with each group using a different combination of trainers. The time required for participants to complete each task was recorded and differences in performance were calculated. Statistical analyses of the two tasks showed no significant difference for the video and webcam trainers. However, the mirror trainer gave significantly higher outcome values for both tasks compared to the video and webcam methods.

A better and more realistic way to simulate in vivo conditions is the use of pulsatile organ-perfused (POP) trainers (Optimist, Austria). POP trainers are equipped with porcine organ systems and perfused with a red-inked fluid so that organ preparation, dissection, and suturing techniques are far more realistic. It seems a realistic training programme but literature evaluating its efficacy in the acquisition of basic skills is lacking.

Computer systems with VR are recently being offered as an alternative to conventional pelvitrainers. Grantcharov et al examined the impact of VR surgical simulation on improvement of psychomotor skills relevant to the performance of laparoscopic cholecystectomy [24]. Surgeons who received VR training performed laparoscopic cholecystectomy significantly faster than those in the control group. Furthermore, the VR-trained group showed significantly greater improvement of their errors and economy of movement scores. Seymour et al showed the same impact of VR training in gallbladder dissection [25]. Gallbladder dissection was 29% faster for VR-trained residents. Non-VR-trained residents were nine times more likely to transiently fail to make progress and five times more likely to injure the gallbladder or adjacent tissue. Mean errors were six times less likely to occur in the VR-trained group (1.19 vs. 7.38 errors/case).

As previously stated, the development of laparoscopy in urology has been slower than that witnessed in general surgery. There is no straightforward, frequently performed procedure in urology requiring a lower or middle level of laparoscopic skills, thus facilitating laparoscopic proficiency. Nevertheless, complex reconstructive urologic procedures, such as pyeloplasty, are increasingly performed laparoscopically to manage both primary and secondary ureteropelvic junction (UPJ) obstruction [26–28]. Laparoscopic pyeloplasty seems to be the new standard method for the treatment of UPJ obstruction. The ureteropelvic anastomosis constitutes the reconstructive part of this operation and can be performed under ×10 magnification, ascertaining a safe and watertight anastomosis with excellent results. The performance of the urethrovesical anastomosis in laparoscopic/endoscopic radical prostatectomy is also a surgical step that requires expertise and appropriate training. Improved quality of the anastomosis can be achieved with laparoscopic radical prostatectomy (LRPE) and endoscopic extracorporeal radical prostatectomy (EERPE) only when performed by experienced laparoscopists. The gaining of experience results in continuous shortening of urethral catheterisation time. In laparoscopic series performed by urologists after the completion of the learning curve, the catheterisation time ranges between 5 and 7 d [29,30].

The group from Creteil (Paris, France) proposed a training model for mastering anastomotic skills [16,17]. Chicken skin (5 × 4 cm) was fashioned into a 4-cm long tube over a 16F catheter, mimicking the urethra, while an additional piece of skin was folded to simulate the bladder. Two urologists used this model during their first year of laparoscopic training. Simulator training was supplemented by active clinical participation, both as assistant or surgeon, during LRPE. The time required to perform a circular urethrovesical anastomosis declined in the trainer from 75 min to 20 min after completing 20 anastomoses. Although no quality assessment score was described, the authors reported that the quality of the anastomosis improved faster than the time necessary to perform it. A satisfactory quality was obtained after five model performances.

Ooi et al described a training model simulating open and laparoscopic pyeloplasty [31]. Dismembered pyeloplasty techniques may be practiced with open or laparoscopic equipment. Students with prior training in suturing and knot-tying only used the open pyeloplasty model on three occasions. Urology trainees experienced in surgery but not laparoscopic pyeloplasty used the model laparoscopically. Students demonstrated a significant improvement between their first and third attempt using the open model (17.00 ± 4.44 min vs. 11.33 ± 2.40 min). Urology trainees improved their mean times from their first to third attempt using the laparoscopic model (18.0 min vs. 11.8 min).

3. From model to reality-training programmes

A plethora of workshops during postgraduate education courses have attempted to provide basic concepts and more advanced notions of laparoscopic techniques. Colegrove et al showed that only 54.3% of the attending trainees performed laparoscopic surgery 5 yr after the workshop [32]. In addition, urologists who had attended a structured and organised laparoscopic fellowship performed approximately 25 cases annually.

The ability to predict surgical performance remains the ‘‘Achilles heel’’ in the use of simulators or wet lab for competency assessment. It is not clear how effectively skills obtained within a laboratory environment can be transferred into a real-life clinical setting. Katz et al investigated the possible correlation between the laparoscopic experience of urologists and their performance in some laparoscopic tasks on a box trainer. A significant difference in performance was found between beginners and basic and advanced laparoscopic urologists and especially between beginners and advanced ones [33]. The availability of a mentoring system with a mentor assisting or being available in a stand-by position seems to be of special importance.

One of the biggest challenges would be to ensure, given the relative lack of experienced laparoscopists, that enough mentors and mentoring programmes are available [34]. Guillonneau et al have suggested that >50 procedures are required to master the technique of LRPE, and once surgeons have gained sufficient experience, they may adopt a mentoring role [29]. However, the number of surgeons with experience of >50 cases for one procedure who could act as mentors for those wishing to learn the specific technique remains small within many countries. A realistic mentoring with completion of an individual learning curve may require numerous proctoring visits (ie, in radical prostatectomy up to 10 visits). Alternatively, a longer-term visit (3–6 mo) at a centre of excellence under the guidance of a mentor certainly provides the best way to acquire the skills for certain critical steps of a laparoscopic procedure and to eventually perform the entire procedure in everyday routine practice.

LRPE and EERPE are the most commonly performed laparoscopic urologic procedures worldwide [35,36]. An important issue is whether this complex and difficult operation can serve as a training tool for urologic surgeons and centres to acquire the laparoscopic skills without impeding patients' safety and functional results. Does the trainee need previous open or laparoscopic experience to start with LRPE or EERPE? The answer to this question is of paramount importance. To master these problems, we developed a ‘‘modular surgical training’’ scheme that uses individual steps of EERPE for resident training. The modular surgical training is based on maximised standardisation of the technique of

Table 1 – Modular surgical training: the 12 segments of endoscopic extraperitoneal radical prostatectomy with five levels of difficulty [41]

No. of step	Description of surgical procedure	Module				
		Lowest level of difficulty				Highest level of difficulty
		I	II	III	IV	V
1	Trocar placement and dissection of the preperitoneal space	X				
2	Pelvic lymphadenectomy		X			
3	Incision of the endopelvic fascia and dissection of the puboprostatic ligaments	X				
4	Santorini's plexus ligation			X		
5	Anterior and lateral bladder-neck dissection		X			
	Dorsal bladder-neck dissection			X		
6	Dissection and division of vasa deferentia			X		
7	Dissection of the seminal vesicles			X		
8	Incision of the posterior Denonvilliers fascia—mobilisation of the dorsal surface of the prostate from the rectum			X		
9	Dissection of the prostatic pedicles			X		
10	Nerve-sparing procedure					X
11	Apical dissection				X	
12	Urethrovesical anastomosis					
	Dorsal circumference (4, 5, 6, 7, 8 o'clock stitches)				X	
	3 and 9 o'clock stitches		X			
	Bladder-neck closure and 11 and 1 o'clock stitches			X		

EERPE [37–39]. We divided the entire procedure into 12 individual steps of different complexity. The levels of difficulty were labeled as ''modules'' (Table 1) and were graded according to their requisite skills from module 1 (lowest level of difficulty) to module 5 (highest level of difficulty).

During the learning phase of this operation, EERPE is performed as a three-surgeon procedure with one trainee as the first assistant and one as the camera operator. The trainee begins by holding the camera, prior to eventually becoming first assistant. The assisting trainee will be trained in the individual steps of the procedure, according to the modular system, in a stepwise fashion, with the mentor completing the more difficult steps of the operation. Only when the trainee has mastered each module can he progress to learn the next operative step. This training programme continues until the trainee is capable of performing the whole operation independently and ensures that the procedure may be used for training without too much impact on the overall operation time. As an adjunct to the operative training, daily practice on a pelvitrainer is recommended for suturing practice.

To assess the effectiveness of our modular training approach, four trainees with varying degrees of surgical experience were evaluated in the performance of EERPE. Mean operative time of 176–193 min and transfusion rate of 1.3% were revealed after the analysis of the first 25–50 procedures performed independently by the trainee. Intraoperative and postoperative complications rates were low [40]. Two of these four residents had no previous surgical experience with open pelvic surgery and attended at least one dry-lab course before starting the programme. Later, the first 50 and consequent 100 cases performed independently by the residents were compared to the first 50 and last 100 cases performed by the mentor [41]. It was documented that previous experience in open or laparoscopic surgery did not affect the performance of the trainees learning EERPE in the modular training programme.

4. Discussion

Operative skill and competence is a mixture of knowledge, judgement, technical ability, and, last but not least, training. Laparoscopic surgical training has for the most part remained relatively unstructured and patterned on the same mentor–trainee model that served surgical training objectives throughout the last century. Clearly the old saying, ''see one-assist one-do one,'' does not seem to apply to laparoscopy. At the onset of the 21st century, the surgical education establishment is searching for new and innovative training tools that match the sophistications of the new minimally invasive operative methods.

During the 2003 XVIII Annual European Association of Urology (EAU) meeting in Madrid, the

European Society of Uro-Technology (ESUT) organised the exhibition ''The Garden of the Future'' and invited urologists and other participants visiting it to complete a questionnaire [42]. This questionnaire investigated the different training methods and looked at the motivation for establishing a laparoscopic training programme within different urologic departments. Results showed that 85.5% of the respondents had the intention to establish laparoscopy, 68.8% were involved in a laparoscopic training programme, and 14.5% had no intention to do so in the future. Reasons for not getting involved in performing laparoscopic surgery in the future were the cost, a long learning curve, a longer operative time, and a lack of support by colleagues. In the same ESUT survey it was shown that 71% of European urology departments could offer laparoscopic surgery, but still 44% of the responders had insufficient access to training. It is more than obvious that that there is no international consensus of training facilities and that programmes are developed differently within European countries. There is a need for standardised, certified, and potentially financially supported programmes organised by the various national or international societies (eg, EAU).

There is an ongoing discussion relative to how many cases are required to achieve a satisfactory performance. The laparoscopy guidelines of EAU (2002) support the concept that 50 laparoscopic procedures are required before a plateau in the incidence of complications occurs. It is therefore suggested that only then should an individual surgeon regard him/herself to be competent in laparoscopy. In the United Kingdom, the Endourological Society requires at least 40 laparoscopic procedures to be undertaken or assisted in a 1-yr period for a fellowship to be recognised [43]. However, the number of cases is always relative and depends on numerous factors such as minor or major cases, only assistance or first operator, independently performed or with major help of the mentor, regular practice, or all cases performed in 1–2 mo.

In general it seems to be rather problematic to define a certain number of overall laparoscopic procedures for certification. Any attempt to assess objectively technical competence in laparoscopy is complicated by the murkiness in defining what is meant by competence. A defined number of procedures per indication seems to be more realistic and helpful, especially in procedures with middle- and high-level complexity. It is clear that 50 laparoscopic varicocele repairs do not qualify for laparoscopic prostatectomy or laparoscopic cystectomy. In the 2002 EAU Guidelines on Laparoscopy, a classification

Table 2 – Scoring of the most frequent laparoscopic operations according to their technical difficulty, operative risk, and degree of attention

Operations	Technique	Risk	Attention	Overall score	Level of difficulty
Cryptorchidism (diagnostic)	1	1	1	3	E
Cryptorchidism (therapeutic)	2	2	2	4	E
Varicocele	2	1	1	4	E
Resection of cortical renal cyst	2	2	1	5	E
Resection of parapelvic renal cyst	2	3	2	7	SD
Ureterolithotomy	4	2	1/3	7/9	SD/FD
Partial nephrectomy (benign)	3	3	2/3	8	SD
Nephropexy	3	2	3	8	SD
Adrenalectomy (<6 cm)	3	3	3	9	FD
Pelvic lymph node dissection	2	3/4	3	8/9	FD
Colposuspension	4	2/3	3	10	FD
Sacral colpopexy	3/4	4/3	3	10	FD
Nephrectomy (benign disease)	4	4	3	11	FD
Nephroureterectomy (transitional cell carcinoma)	4	4	4	12	D
Adrenalectomy (>6 cm)	4	4	4	12	D
Pyeloplasty (resection, suture)	6	3	4	13	D
Partial nephrectomy (tumour)	5	4	5	15	VD
Radical nephrectomy (T1)	4/5	4/5	4/5	12/15	VD
Retropertioneal lymph node dissection (RPLND; staging)	5	6	6	17	VD
Nephrectomy (living donor)	4	7	7	18	ED
RPLND (after chemotherapy)	5	7	7	19	ED
Radical prostatectomy	7	5	6/7	18/19	ED

Each criterion is scored from 1 to 7. The sum of the three criteria is used to classify each operation according to an increasing level of difficulty (from EAU Guidelines on Laparoscopy 2002). E = easy; SD = slightly difficult; FD = fairly difficult; D = difficult; VD = very difficult; ED = extremely difficult.

system of the difficulty and complexity of laparoscopic procedures was proposed (Table 2). An overall score is calculated based on individual scores (1–7 each) for "technical difficulty," "operative risk," and "sustained nature." Overall scores are 3–5 (easy), 6–8 (slightly difficult), 9–11 (fairly difficult), 12–14 (difficult), 15–17 (very difficult), and >18 (extremely difficult). Although this classification system is certainly somewhat debatable, it provides a valuable orientation about the complexity of urologic laparoscopy.

In our opinion, urology residents should be early exposed to high-volume laparoscopic operations (nephrectomy, radical prostatectomy) because

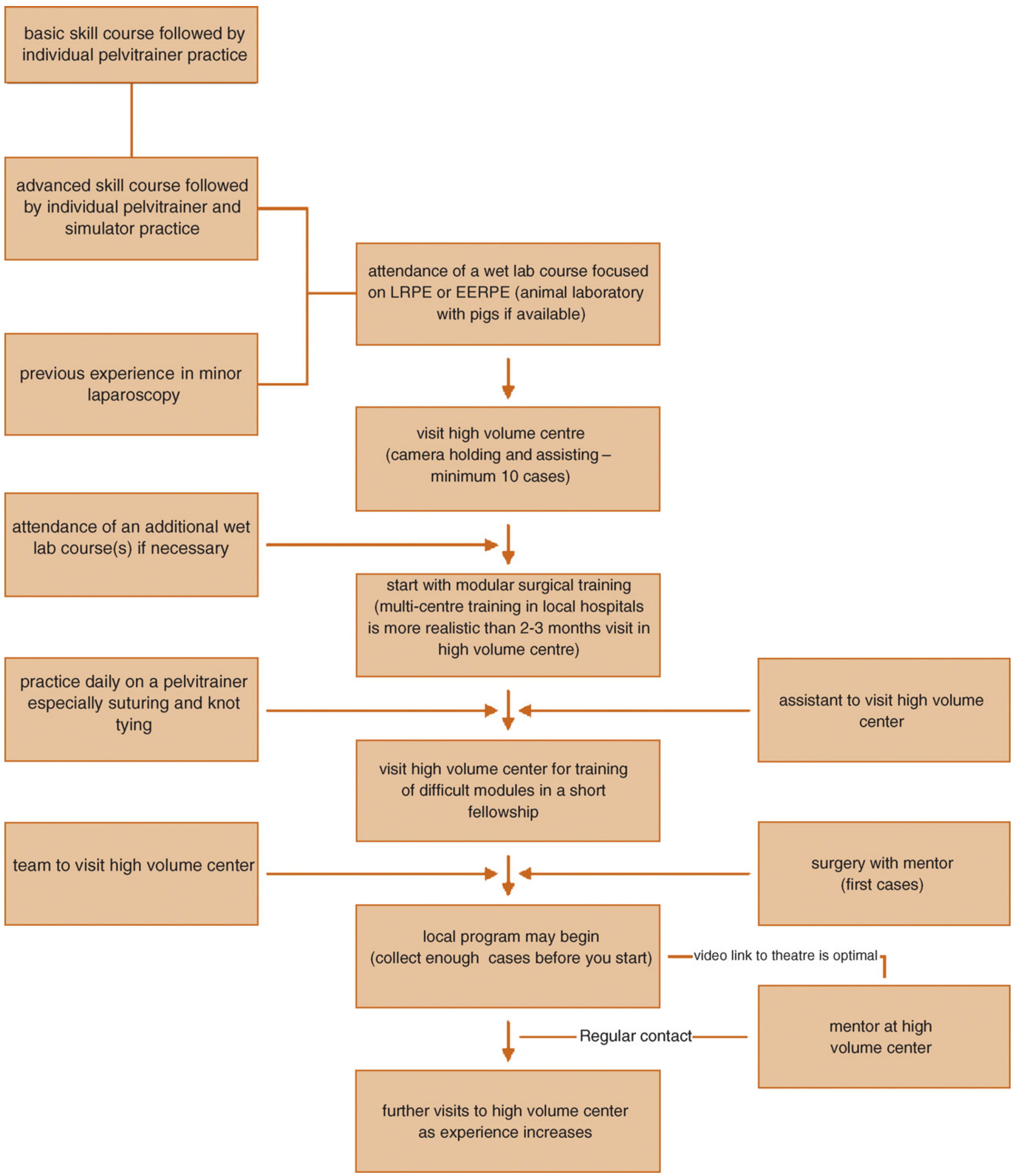

Fig. 1 – Suggested scheme for training and implementation of laparoscopic or endoscopic radical prostatectomy. LRPE = laparoscopic radical prostatectomy; EERPE = endoscopic extraperitoneal radical prostatectomy.

individual learning curves cannot be mastered in a low-volume setting (eg, 10–30 prostatectomies/nephrectomies per year). But this is not easily achieved because centres with such a large experience still are lacking in many countries. A defined number of multi-institutional training centres with well-structured educational programmes are definitely needed. The main goal should be the standardisation of the daily (or weekly) performed operative procedures as well as educational "modular training programmes" to shorten individual learning curves and generate common quality standards.

There is a little doubt that laparoscopy is always associated with a longer learning curve compared to open surgery. A recent prospective study comparing the training modalities for LRPE found that a modular approach to learning the technique resulted in comparable surgical results between different generations of surgeons with different levels of laparoscopic and open surgical experience [44]. Fabrizio et al showed that an intensive approach for training LRPE in a mentor-initiated clinical programme could markedly decrease the learning curve [45].

It has been shown that it can take more time to learn laparoscopic procedures compared with open surgery due to the loss of joint dexterity, the counterintuitive movement of the instrument owing to the fulcrum effect of the abdominal wall, and the necessary acquisition of hand-eye coordination [46]. The data received from our modular surgical training studies clearly demonstrate that the modular programme enables the young surgeons to develop the requisite skills rapidly to master a complex procedure such as radical prostatectomy [40,41].

Another fundamental advantage of the modular concept is that the traditional routine of the trainer spending multiple hours patiently with the trainee is overcome. In a high-volume centre (>250 cases/yr) more than one mentor is allowed to train the newer trainees. More experienced trainees can mentor the newer trainees in the easier modules. Furthermore, the modular concept also allows for preliminary training in the less complicated modules to be performed remotely from the high-volume centre (multicentre training). This creates a particularly attractive possibility for training surgeons in a setting where mentors are few, numbers of cases for radical prostatectomy per urology unit are small, and consultant commitments and service obligations make it almost impossible to travel to other hospitals to teach. Provided that the steps of the procedure stay the same and the volunteer mentor is committed to adhere strictly to the standardised technique, there is the opportunity for surgeons to partly learn this procedure (first modules) in a local environment. The final steps (more difficult modules) can be learned on a substantially shortened fellowship at a high-volume centre.

Fig. 1 summarises and outlines the recommendations for training and implementation of LRPE and EERPE in a local hospital. It must be stressed that while setting up an advanced laparoscopy service the support and encouragement of colleagues and anaesthetic, nursing, and theatre staff are essential. A good assistant facilitates the operation greatly, as do theatre nurses who are familiar with the procedure. This can most easily be achieved if the assistant and theatre nurses also spend a time at a high-volume centre specifically for training and familiarisation with the procedures.

5. Conclusions

Laparoscopic urologic surgery plays an important part in the spectrum of urologic therapy and includes procedures with different levels of complexity. Therefore, laparoscopy should be an integral part of the training for urology residents. The lack of training procedures needs to be overcome by structured training programmes and the experience gained needs to be transferred into daily clinical practice. A defined number of multi-institutional training centres with well-structured educational programmes is definitely needed.

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CME questions

Please visit www.eu-acme.org/europeanurology to answer these CME questions on-line. The CME credits will then be attributed automatically.

1. How many cases does the European Association of Urology (EAU) consider as the minimum requirement before there is a plateau in the incidence of complications following the adoption of a new laparoscopic procedure?
   A. 20 cases
   B. 30 cases
   C. 50 cases
   D. >50 cases

2. The development of laparoscopy in urology has been slower compared to surgery because
   A. Specific instruments for genitourinary surgery were not available initially
   B. Low or intermediate level of complexity/difficulty operations for beginners are less frequent
   C. The urologic community has been rather reluctant to accept minimally invasive techniques
   D. The main reason is the significantly higher costs compared to open surgery

3. Experience in open surgery
   A. Is mandatory before starting a laparoscopy programme
   B. Is not essential in a structured laparoscopic training programme
   C. Definitely shortens the individual laparoscopic learning curve
   D. Is not helpful to start a laparoscopy program

4. Regarding the technical difficulty, the operative risk, and the degree of attention the highest scored laparoscopic operation is:
   A. Pyeloplasty
   B. Partial tumour-nephrectomy
   C. Radical prostatectomy
   D. Adrenalectomy

5. How many levels of difficulty (modules) does the "Modular Surgical Training" contain?
   A. 8
   B. 12
   C. 5
   D. 3

6. What is the mean duration of catheterisation in series reporting the outcome of laparoscopic (LRPE) and endoscopic extraperitoneal radical prostatectomy (EERPE)?
   A. 3–4 days
   B. 5–7 days
   C. 8–10 days
   D. >10 days