

Laparoscopy training for obstetrics and gynaecology trainees? A pilot study in the Eastern Deanery, UK

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Abstract Training in laparoscopic surgery has been difficult to implement, worldwide. This survey aims to identify the current status of laparoscopic training in the Eastern Deanery, UK. We hope to identify factors which influence training and propose solutions towards improving it. **Methods:** All 75 trainees within the 14 National Health Service (NHS) Hospitals of the Eastern Deanery were sent out a postal questionnaire in September 2006. The response rate was 89.3%. Seventy four to eighty three percent were performing various level 1 procedures and only a small percentage were doing level 2 and level 3 procedures. All respondents felt the necessity to be independently competent in level 1 and 2 procedures by the end of their training programme but two-thirds remained sceptical about achieving their training objectives. The main factors hindering training were: inability to be the primary surgeon (87%), lack of theatre time (60%) and availability of simulator training (55%). The results reflect the lack of provision for laparoscopic training at most hospitals in the UK Eastern Deanery. This has also been reflected in another survey amongst Welsh trainees. Individual hospitals must be encouraged to provide simulator training. The training programme should allocate more time for supervised simulator sessions and live surgical training. The provision of Consultant led emergency daytime lists could provide a unique training opportunity in the management of ectopic pregnancies and ovarian cysts. Designated teaching lists and individualised training programmes are other solutions.

Keywords Gynaecological laparoscopy · Laparoscopy skills training · Laparoscopic simulator · Gynaecological residency programme

Introduction

Surgical training for gynaecology trainees has raised concern in recent years [1, 2]. The implementation of the European Working Time Directive has had a real impact on the work and training of junior doctors [3]. This coupled with reduced duration of training brought about by the Calman report [4] has limited training opportunities in the UK.

Laparoscopy is becoming increasingly important in gynaecological practice and there is evidence that, in some areas, laparoscopic surgery has advantages over traditional open surgery [5, 6]. It is therefore desirable that hospital gynaecologists of the future have laparoscopic skills. These are not easy to acquire and it is essential that they are acquired in a safe and effective manner. The implementation of laparoscopic training into the curriculum requires additional theatre time and the acquisition of training equipment, which can prove both difficult to achieve and expensive.

Currently, there is no provision for structured laparoscopic training in the Royal College of Obstetricians and Gynaecologists (RCOG) core curriculum. Trainees in the UK who wish to obtain operative laparoscopy skills do an intermediate-level, special-skills module after completion of core training. There is, as yet, no universal provision for advanced training. Recently, the RCOG has proposed very specific roles for the future consultant [7], and not all trainees will need to acquire laparoscopic skills. However, a majority of consultants work in district general hospitals and have both obstetric and gynaecological commitments.

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Hence, most future consultants will, in the least, need to have the basic laparoscopic skills to manage gynaecological emergencies such as ectopic pregnancies and ovarian cysts.

Aims

This survey aims to identify the trainee's interest, competency, the types of skills acquired during training and the current status of laparoscopy training in the UK's Eastern Deanery residency programme. We hope to identify factors which influence training and, from this, propose solutions towards improving it, not only in this Deanery but in residency training programmes everywhere.

Materials and methods

A questionnaire was sent out to specialist registrars in training posts within the UK Eastern Deanery in October 2006. This was done after approval from the regional Training Programme Director and Postgraduate Dean.

Each registrar in training received a survey pack containing a letter of introduction, the questionnaire and a stamped return envelope. The packs were sent out through the postgraduate department or the clinical tutors of the respective National Health Service (NHS) Trusts/Hospitals. The return envelopes were assigned a number to track the response from the various trusts. There was no individual tracking. To maximise the response rate, the trainees were reminded by a general e-mail using the deanery's electronic mailing list. All collected data were registered anonymously.

The questionnaire requested information on the trainee's personal and demographic details, the trainee's competence and interests in laparoscopy and general training issues. The respondents were asked their age, sex, type of training post and place of work (district general hospital/university teaching hospital).

Laparoscopic procedures were classified as level 1–3 based on RCOG guidelines [8]. The trainees were asked to describe the number of laparoscopic procedures they had performed so far in their training and the competence level reached for each of them. Competency was assessed according to whether the particular procedure was performed independently, under indirect supervision or under direct supervision. The trainees were asked to provide their opinion on what procedures they thought all trainees should be competent to perform by the end of their training.

The questionnaire also enquired about the number of specialist gynae-endoscopists in individual departments, the availability of simulator training and the method of assessment of laparoscopy skills. Finally, the trainees were asked if they were satisfied with the skills they had,

whether the current training programme would prepare them adequately to be competent gynaecologists and which factors limited their training. A five-point Likert scale was used in the questionnaire. This allowed the respondent to express agreement or disagreement on a scale of 1 (strongly agree) to 5 (strongly disagree).

Results

The Eastern Deanery is one of the 14 deaneries within the UK, its size comparable to the Welsh deanery. It includes 14 NHS trusts, two of which are university teaching hospitals, and the rest are district general hospitals.

1. Respondents: Seventy five specialist registrars doing obstetrics and gynaecology were identified to be in training in the Eastern Deanery at the time of sending out the survey. The survey was sent out a few weeks before the end of the academic year in October 2006. Overall, there were 75 trainees in recognised general training and sub-specialty posts. Sixty seven trainees returned the questionnaire (response rate of 89.3%). Of the respondents, 48 were junior trainees in years 1 to 3 of core training, 17 were from the fourth and fifth years and 2 were sub-specialty trainees.
2. Experience and interest (Fig. 1): Nearly all respondents had performed level 1 laparoscopic procedures such as diagnostic laparoscopy (100%) and sterilisation (97%). Experience with level 2 procedures varied. Eighty one percent of the respondents had performed simple adhesiolysis; 73% had done laparoscopic salpingectomy/salpingotomy for ectopic pregnancy and 38% had performed laparoscopic ovarian cystectomy and 48% had performed laparoscopic endometriosis.

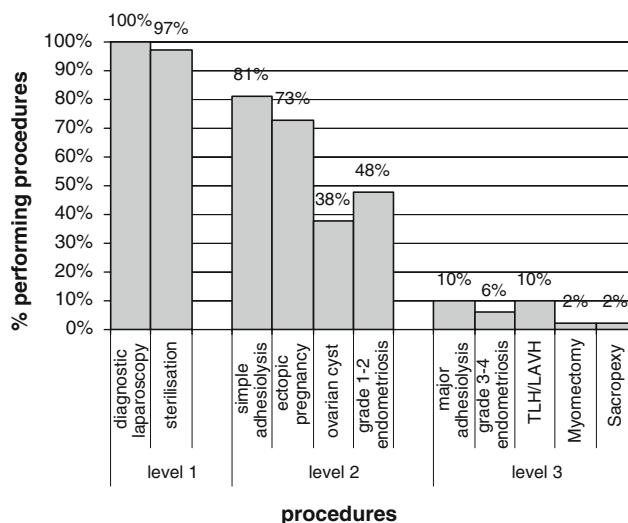


Fig. 1 Experience

tomy. Level 3 procedures had been performed by very few respondents. Resection of grade 3–4 endometriosis by 6% and total laparoscopic hysterectomy/laparoscopic assisted vaginal hysterectomy by 10% of the respondents. Interest: All respondents wanted to perform simple adhesiolysis and laparoscopic salpingectomy/salpingotomy for ectopic pregnancy before completion of their training. Most (90%) wanted to perform resection of low-grade endometriosis and ovarian cystectomy/oophorectomy as well. Surprisingly, about 65% of the respondents voiced an interest in performing level 3 procedures.

3. Competence (Fig. 2): A high proportion of the respondents were performing diagnostic laparoscopy (83%) and laparoscopic sterilisation (74%) either independently or under indirect supervision. As regards level 2 procedures, a greater proportion (39–49%) were doing simple adhesiolysis and ectopic pregnancy procedures independently/under indirect supervision as compared to resection of low-grade endometriosis and ovarian cystectomies (21–28%). Level 3 procedures were being performed by a handful of respondents under direct supervision only.

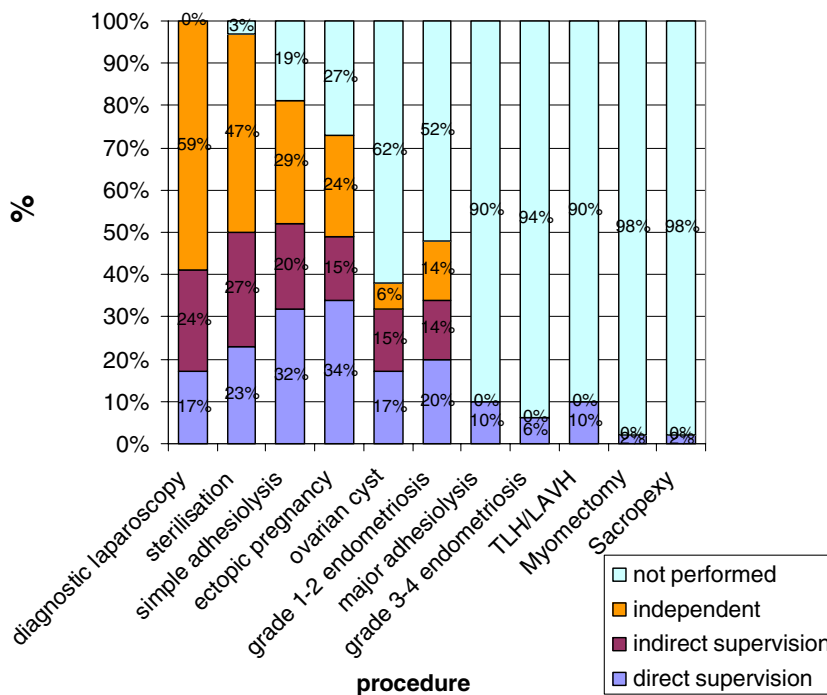
4. Training issues:

(a) Trainees’ opinions on the mandatory skills to be acquired (Fig. 3): All respondents felt that they should be independently competent to perform all level 1 procedures and some level 2 procedures like simple adhesiolysis and laparoscopic salpin-

gectomy/salpingotomy for ectopic pregnancy by the end of their residency training. Eighty percent felt they should also be able to treat low-grade endometriosis and simple ovarian cysts independently. Only 8% of trainees felt that training in some level 3 procedures was essential as part of general training.

- (b) Evaluation of laparoscopic skills (Fig. 4): There was more than one reply by some respondents. Seventy six percent of respondents felt that their skills were subjectively evaluated by the trainer in the operating theatre. Eighteen percent felt it was based on the case numbers. Fourteen percent felt there was no formal assessment of their skills.
- (c) Presence of a specialist laparoscopic surgeon in the department: Ninety four percent of the respondents either agreed or strongly agreed that the presence of a specialist gynae-endoscopist is important for teaching trainees laparoscopy skills. Only seven trusts in the deanery had a specialist performing some level 3 procedures. There was no specialist in four trusts.
- (d) Availability of simulator training: Eighty one percent of the respondents either agreed or strongly agreed that simulator training is essential for improving laparoscopic skills. Nineteen percent were unsure of its benefit. Simulator training is available in only three trusts. Twenty three respondents (34%) had worked on a simulator in

Fig. 2 Competence



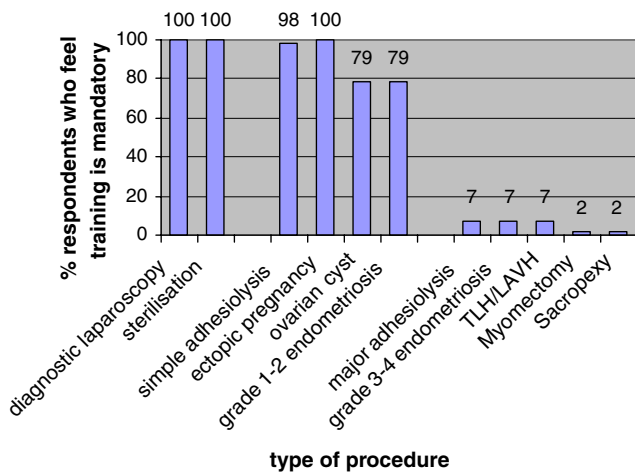


Fig. 3 Mandatory procedures

their training. Fifteen had worked for 1–10 h and six for 11–20 h. Only two trainees had worked on a simulator for more than 20 h.

- (e) Trainee satisfaction: Sixty nine percent were dissatisfied with their laparoscopic skills at the present stage in their training. Twenty one percent were satisfied. Fifty percent of those satisfied with training were senior trainees in years 4 and 5 or doing sub-specialty training.
- (f) Readiness for Certificate of Completion of Specialist Training: Sixty seven percent felt that the current training would not prepare them adequately to achieve their training objectives. Ten percent were optimistic, while another 10% remained unsure.
- (g) Senior trainees: Nineteen trainees were identified to be in years 4 and 5 or doing sub-specialty training. Only 37% of these were satisfied with the training they obtained at their stage, and only 26% felt confident that they would achieve their training objectives by the end of their training programme.
- (h) Limitations in training (Fig. 5): Eighty seven percent of respondents believe that the most

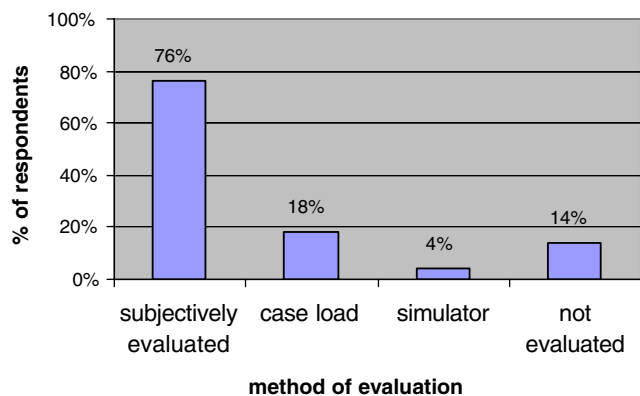


Fig. 4 Evaluation of skills

common factor hindering training was the inability to be the primary surgeon. Other factors were lack of theatre time (60%) and lack of simulator training (55%). Lack of equipment in theatres or of case load was not a limiting factor. Forty percent felt that there was a lack of interest shown by the trainer, and 34% did not believe this to be a problem. Lack of self motivation and interest was not believed to be a problem by the majority of trainees.

Discussion

Training for specialist registrars in gynaecology has come under scrutiny in Europe and the UK in recent years. The reduction in training duration, the limitation on hours worked and reduced training opportunities brought about by alterations in practice have raised the possibility that not all trainees will acquire adequate surgical skills in the time allocated. This is even more of an issue in laparoscopic surgery where there is a perception that training opportunities suffer greater restrictions. The very high response rate (89%) in this survey may identify that this is an area of concern to the trainees.

It would appear that simple laparoscopic procedures are being taught to trainees early in their training period and that most trainees would be able to perform these independently before the end of their training period. Laparoscopic procedures for ectopic pregnancy and simple adhesiolysis had been performed by a majority of the respondents. However, only an average of 44% were able to do these procedures under indirect supervision or independently. Surprisingly, a fourth had never managed an ectopic pregnancy laparoscopically. Only a small proportion of

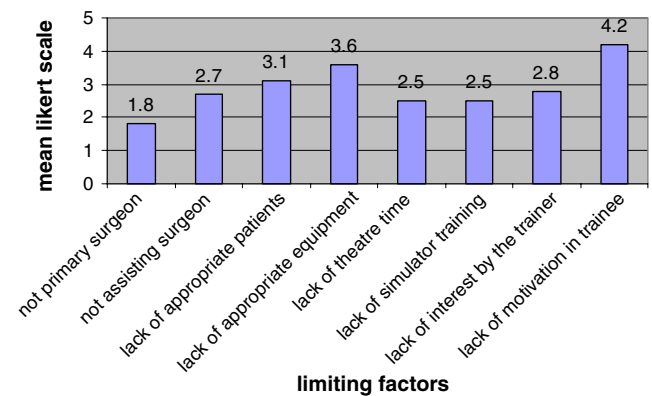


Fig. 5 Limitations in training. Trainees were asked to respond to what they thought was a limiting factor to their training on a five-point Likert scale ranging as follows: strongly agree=1, agree=2, neither agree nor disagree=3, disagree=4, and strongly disagree=5

trainees had performed level 2 procedures for low-grade endometriosis and simple ovarian cysts, with even a smaller proportion performed independently. Only a tiny majority had had any exposure to level 3 procedures.

Trainees believe that training to intermediate-level laparoscopy should be available to all trainees as an integral part of general training and there should be provisions in the curriculum for advanced training for those interested.

One of the significant factors limiting training was the lack of time allotted for hands-on training within operating theatres. Reduction in duration of training and working hours, an increase in the number of trainees and reduction in exposure to procedures have all contributed to the situation. Less than half the trusts in the survey had a specialist laparoscopic surgeon in their department, thus further limiting training opportunities.

The survey also identifies that only a minority of trusts can provide simulator-based training. However, it is also clear that when the opportunity to use a simulator exists, trainees are not affording themselves of the opportunity.

A fifth of the respondents did not have any formal evaluation of their laparoscopic skills. The majority of the respondents felt that their laparoscopic skills were only subjectively evaluated in theatre. In some, evaluation was based on the number of cases performed and not the competency displayed.

The findings of the survey clearly highlight some of the limitations of the current training programme in the Eastern Deanery. It is difficult to say how representative this study is of the whole of the UK. It does, however, represent the opinion of an overwhelming majority of trainees in a single deanery. Training in all deaneries in the UK is fairly standardised, and hence, by extrapolation, the results in this deanery must surely reflect the greater opinion in the UK.

The finding that 27% had never managed an ectopic pregnancy laparoscopically has significant implications for evidence-based practice. The literature suggests that laparoscopy is better and more cost-effective than laparotomy in the surgical management of ectopic pregnancy [5], and the RCOG recommends its use in its guideline on ectopic pregnancy [9]. In a recent Welsh survey, 30% of the respondents stated that ectopic pregnancy was managed laparoscopically only during routine hours in some trusts [10]. Such out-of-hours management of ectopic pregnancy further limits training and suggests that some consultants are either not trained or are reluctant to come in from home when on-call to do the procedure laparoscopically.

Considering that ovarian cysts commonly present as acute emergencies, it is desirable that trainees hoping to practice as district general hospital consultants should be competent to be able to deal with them laparoscopically. A Cochrane review advocates the use of laparoscopic surgery for benign ovarian masses [6].

The obvious shortfalls in training identified by the survey could be addressed by some of the following proposals. However, for effective implementation into the NHS and the RCOG training curriculums, we believe that this should be addressed by a joint working party of the RCOG, British Society of Gynaecological Endoscopists and the Department of Health.

The RCOG recommends audit to assess the proportion of women treated laparoscopically [9]. This could also be extended to the management of benign adnexal masses. Such audits will help identify factors limiting the use of laparoscopy in these situations and will motivate trainers to provide training in these laparoscopic procedures.

Simulator training has been shown to improve in vivo laparoscopic skills [11, 12]. Provision of simulator training is expensive and does require significant resources and space, but it should be an essential component of training. At the very least, all trusts should invest in simple box trainers, which are relatively inexpensive. More advanced simulators could ideally be accessible in training centres based regionally. Such centres should ideally also have the facilities available for the practice of cadaver-based surgical training [13].

Given the known benefits of simulator training and the lack of use of it by trainees on a voluntary basis, it might be worth considering incorporating it as mandatory in the training curriculum. Adopting validated curricula will help to standardise the training [14].

The simulator can also be used to objectively assess laparoscopic skills [14]. Subjective evaluation of skills is easily influenced by personal traits and personal relationships with the trainer. Case numbers, though easily quantifiable, do not represent the competence of an individual. Objectively structured assessment tools proposed in the RCOG curriculum of June 2006 [15] are effective assessment tools and could be used to assess competency in the various laparoscopic procedures.

A Canadian survey of surgical residents reported that the presence of a specialist laparoscopist in the department greatly influences and improves the training programme [16]. The presence of a specialist would increase the case load in the department, as well as increase exposure of residents in these highly skilled techniques [17]. The appointment of consultants specialising in the management of gynaecological emergencies and the provision of consultant-led emergency daytime lists could provide a unique training opportunity in the laparoscopic management of ectopic pregnancies and ovarian cysts.

Trainees must realise that live operating, however, should not be the place to formulate surgical skills but rather to consolidate them. Trainees should be able to reach competency with the use of instruments and suturing before operating on a live patient. This again highlights the need

for simulator- and cadaver-based training. Trainees should also not underestimate the value of assisting during operations.

The RCOG should consider the introduction of intermediate-level training for most trainees in the 5-year structured training programme. Presently in the UK, there are very few centres providing level 3 accreditation, and hence, it may be necessary for interested trainees to gain these skills doing a 1–2-year fellowship on completion of their training. Laparoscopic training has been difficult to provide in most surgical programmes [16, 18, 19]. In the USA, formal laparoscopic training has been successfully employed in only 69% of gynaecology residency programmes [20]. Because of the target culture in the NHS, there is little motivation for trusts and faculty to provide appropriate time for training. As a result, trainees spend more time providing service than being trained. However, training can be acquired with proper planning and provision of individualised training [21]. The use of designated teaching lists, proper case selection and changes in service provision are essential [22]. Lack of funding is a major barrier as well but cannot be allowed to hinder the development of evidenced-based practice.

Conclusion

It is reassuring that most trainees in the UK Eastern Deanery have gained competency in level 1 procedures. Unfortunately, only a minority are able to do level 2 and 3 procedures. More than two-thirds of the respondents are disappointed with the current state of training and there is considerable scepticism amongst them that they will be able to achieve their training objectives by the end of their training period. Even senior trainees nearing completion of their training feel dissatisfied.

The levels of competency achieved by the trainees reflects the lack of provision of laparoscopic training at most hospitals in the UK Eastern Deanery. This has also been identified in a survey amongst Welsh trainees [10] and, hence, probably reflects the status of training programmes all over the UK. As a matter of urgency, hospitals must be encouraged to provide accommodation and equipment for simulator training. The training programme needs to allocate more time for supervised simulator sessions. Protected live surgical training also needs to be organised for trainees to acquire hands-on skills.

We hope that the survey provides the impetus for the reorganisation of laparoscopic training in the UK. We also hope that training programmes in other parts of the world

will identify with the issues raised by this survey and benefit from some of the proposed solutions.

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