CIRUGÍA ESPAÑOLA

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Editorial

Advanced training in laparoscopic surgery: what is the best model?

Formación en cirugía laparoscópica avanzada. ¿Cuál es el mejor modelo?

Since it was first used 20 years ago, endoscopic surgery has become the most common approach in a large number of interventions for general and digestive surgery, as well as other surgical specialities (thoracic, gynaecologic, and urologic surgery). Endoscopic surgery has some unique characteristics, which makes it difficult to master. On the one hand, it is necessary to carry out this type of surgery in a continually developing and evolving technological environment. On the other hand, endoscopic surgery technique, carried out in a different way to other types of surgery and controlled by a 2-dimensional monitor, significantly slows down and increases the period needed for training until the skills that are needed to carry out this surgery safely are achieved. Between 40 and 100 advanced laparoscopic procedures must be carried out in order to obtain sufficient technical competence. It is often difficult to achieve this quantity in most surgical training establishments.

In western countries, it is clear that surgical training has become more difficult in recent years with regard to the conventional model accepted in recent decades. The situation becomes difficult when even more complex surgical techniques must be implemented in an environment and by using a method that limits the surgical training period. Spending limits must also be considered and the techniques must be in line with clinical safety expected by the public. Working time regulations, which limit the hours that registrars are able to work (48 in EU and 80 in USA), has meant that ever more complicated surgical training approaches have had to be restructured during a limited period. This means converting a concept of progressive assumption of responsibilities, typical of traditional residency, into structured programmes within the time limit with regard to activities that allow the surgeon to obtain and develop the necessary competence in the shape of knowledge, skills and attitude. However, the working time regulations that have been imposed in surgical training, does not allow sufficient time for an adequate training, especially in technological dependent areas. It is also worth mentioning that most prestigious North American academic institutions have insistently disapproved[1,2] the proposal for reducing the working day for training surgeons. Furthermore, the EUSM in the EU[3] and the Association of Surgeons in Training in Great Britain[4] have put forward a counterproposal with regard to the working regulations.

Another aspect that substantially limits surgical training for advanced endoscopic techniques is the unavoidable need and demand for surgical safety. The traditional training model for learning endoscopic surgical techniques can rapidly become obsolete, by incorporating simulated models, similar to those used in civil aviation and considering the proposals made to increase safety in operating theatres. At the same time, in a more demanding and better informed society, the patient expects surgical treatment to be carried out by competent surgeons that have adequate training. They do not expect to receive treatment from a surgeon in training or that may be using the surgery as part of their training process. Although the previously mentioned concepts are associated with surgeons in training, there is a significant number of qualified surgeons that have not received adequate systemised training due to the speed that endoscopic surgery develops.

The present issue concerning advanced endoscopic surgical training is proven when considering how slow these techniques are incorporated in surgical practice. Although laparoscopic cholecystectomy can be considered to be implemented universally, and hiatus surgery used in a high percentage of cases, the laparoscopic approach is employed in advanced indications (adrenalectomy, splenectomy, colectomy). It is also used for indications in which information based on highest level evidence that its clinical advantages do not surpass 15% of the cases intervened in the USA in the last 10 years.[5]

Specific training in endoscopic surgery has represented an important challenge for 2 decades, immediately after the first

laparoscopic cholecystectomy[6] was described. All kinds of training products have been developed with various formative values. In fact, many of the products have been criticised for not being formative enough, and because they are developed with profit in mind. Furthermore, they are considered to have caused significant complications and side effects during the first few years.

This type of training has been developed in 2 different ways on both sides of the Atlantic. In the USA, the need for this type of specific postgraduate training was rapidly detected, consolidating the Minimally Invasive Surgery Fellowship Model.[7] The endoscopic surgery fellowship has received the highest number of applications, being 110 at present. At the same time, it has developed into a regulatory body (Fellowship Council, http://www.fellowshipcouncil.org/finalguidelines.phpl) which ensures that the right candidates are selected for the fellowship, considering both the centre's and the applicants' needs. The fellowship has proved useful in different ways. On the one hand, it is a highly valued requirement for the public offer of hospital places in the USA, and on the other hand, it has demonstrated the fastest and the safest implementation of different techniques (bariatric, colorectal) when a doctor is incorporated with specific training in endoscopic surgery.[8,9] There is not a similar common policy at European level, nor have European scientific societies proposed or developed such models. There has only been a national training and accreditation programme for colorectal laparoscopic surgery in the United Kingdom, following analysis by NICE (National Institute for Clinical Excellence) of the clinical advantages for laparoscopic colectomy, as well as the factors that hinder training in this area.[10]

In Spain, there have been very few formative proposals structured around university education (Madrid, Seville, Santiago de Compostela), although the number of proposals has risen in recent years. Therefore, independent or academic bodies (CENDOS [Training Centre for Endoscopic Surgery], Iavante, CCMI [Minimally Invasive Surgery Centre]) have created centres or projects for training by way of practical courses of various lengths or even Masters Courses. The Spanish *Comisión Nacional de la Especialidad* (the National Commission for Speciality), dedicated to this training difficulty, modified the speciality plan in May 2007, including 2 obligatory courses during the residency. The Spanish Surgeons' Association (AEC) and the Endoscopic Surgery Section were entrusted to develop and organise them. The Endoscopic Surgery Section also organises an annual course in Castellón, which has a limited number of vacancies. It is estimated that 30%-40% of the fifth year Spanish registrars are highly satisfied. Furthermore, the "Basic Training" courses will start in all Autonomous Communities this year, for first year registrars. However, despite the fact that information towards the results of some of these proposals is available, it still seems that the technical training that should be carried out in the operating theatre is still not sufficient, and there are doubts as to how effective these projects are, especially given that the training time during the residency is reduced.[11] In recent months, different proposals have been published in the journal *Cirugía Española* which reflect upon the model which we must examine so as to resolve or accelerate finding the solution for this problem. Suñol et al[12] have demonstrated that systematised training through integrated groups, with a qualified surgeon and a surgeon in training (who once qualified will become a trainer) favours a safe and progressive learning chain. This model implies service policy decisions and logical discipline in the team to ensure complete and evaluated technical efficiency. Balen et al[13] propose a different model, which is similar to the American model, including an intensive course, fellowship or mini-fellowship (residency as a surgeon in a centre with wide experience) significantly improving the results of this type of surgery by reincorporating the surgical team. At the same time, Palazuelos et al,[14] Rodríguez García et al,[15] and Rodríguez Sanjuán et al,[16] show that in Spain simulation and training in the laboratory facilitates acquiring skills in advanced procedures, which means that there is less need to undergo training in the operating theatre and a technical aptitude is acquired much more quickly. In the future it will be necessary to know if the application of the Bologna process, with the new educational model for Degrees and Masters in Medicine, can be applied to this type of training (Master in Endoscopic Surgery).

It is difficult to conclude this editorial with a clear and definite message. One conclusion which may be drawn would be that following the evidence of the endoscopic surgery advantages and the difficulties associated with training in this field, the main objective for scientific societies and those in charge of surgeries in the coming years will be to design defined and structured training models and policies for endoscopic surgery. In this environment, realistically, there is probably not a unique and ideal model, but there are many sufficiently illustrative experiments that could be imitated. The advantages and objectives are clear: more competent surgeons must be trained in less time and techniques offered that we consider as being the most efficient possible for our patients.

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0009-739X/$ - see front matter