

# Laparoscopic Surgery: The Issue of Education and Training

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Laparoscopic surgery sometimes called as “key-hole surgery” or “minimal invasive surgery”, is one of the fastest growing areas in surgery today. Laparoscopic surgery is performed with the assistance of video camera and several thin instruments that are passed into the abdomen through small skin incisions. Benefits of laparoscopic surgery are multifold as compared to open conventional surgery. These include less post operative pain, shorter hospital stay, early return to full activities, less risk of complications, less internal scarring and better cosmesis.

Laparoscopic surgery has undergone rapid development in recent years and has replaced open surgery for many interventions. Laparoscopic surgery has expanded from gall bladder surgery to virtually every type of surgery in abdomen. Advancement in technology combining with patient care has allowed the minimally invasive surgeons to do more with less.

Keeping in view the benefits of laparoscopic surgery, the public demands for laparoscopic surgery has increased slowly but definitely which caused surgical centers to offer this approach to their patients. This situation challenged the hospitals to provide this service but the number of trained laparoscopic surgeons was insufficient to meet the demand. Along with the supply-demand gap is a history of complications associated with early experience with different procedures. So laparoscopic surgery began in controversy, which continues today especially with training issues.<sup>1</sup>

Learning curve, specific problems, operating time, and cost issues are still the part of the continuing debate and are discussed time and again but very few randomized controlled trials were conducted to scientifically evaluate the role of laparoscopy.<sup>2</sup> The success was determined most often by the patient rather than medical community. Hence two major issues dominate laparoscopic surgery training: who should be trained and how should we train them?

Laparoscopic surgery is a completely different game from conventional surgery which offers wide exposure, tissue contact, binocular vision and the use of traditional equipment. It, thus, demands specialized training.<sup>3</sup> The situation becomes graver by the fact that training has to be imparted as a ‘crash course’ to

already practicing surgeon. So this training lacks standardization and varies from centre to centre, country to country.

Training issues in laparoscopic surgery are best studied as: classification of new evolving procedures, continuing medical education and residency training. To date, more than 100 different laparoscopic procedures being explored in the general surgical literature. The Society of American Gastrointestinal Endoscopic Surgeons (SAGES) has classified three laparoscopic procedures as core (cholecystectomy, appendectomy, and exploratory laparoscopy), calling the rest advanced.<sup>4,5</sup> It is well documented that attending workshops and seminars focused on learning laparoscopy, does not necessarily result in enabling surgeons to safely perform laparoscopic procedures. There is a learning curve that not only requires a mature surgeon’s learned clinical judgment but his learning and practice of perceptual motor skills as well. Another residency training problem is that residents are possibly over-trained in only few procedures, like laparoscopic cholecystectomy (90%), laparoscopic appendectomy (13%), and laparoscopic inguinal hernia repairs (10%).<sup>6</sup> Further some surgical residents may not have the natural ability to learn laparoscopic surgery.

The emerging recognition is that “master” laparoscopic surgeons are required to teach others the art and science of laparoscopic surgery. This suggests that until we can prepare a significant number of surgeons well-trained in laparoscopic surgery, such training will be marginalized.

In industrialized countries there is often the intervention of choice when surgery is needed. However, there is still a major gap in the implementation of modern surgical procedures in developing countries like Pakistan because of under resourced settings, often due to restricted availability or access to the equipment and lack of training.

Laparoscopic surgery is being practiced throughout Pakistan for the last one and a half decade, but still the bulk is constituted by the laparoscopic cholecystectomy and diagnostic laparoscopy. Most of the surgeons, who are doing the laparoscopic surgery, are either trained in the developed countries at their own expenses or simply they observe the procedures and

start doing it. Most of the early training in laparoscopic surgery in developing countries like Pakistan is in the form of workshops for two to six days. These workshops are held in big teaching hospitals of major cities through the courtesy of pharmaceutical industry. Some of the hospitals in government sector have taken the lead to establish the designated minimal access surgery units and have started the advanced laparoscopic surgery in specialties like bariatric surgery, hernias repair, gastrointestinal surgery, thoracic surgery, paediatric surgery, urological surgery, and cancer surgery. However the major obstacle in providing this service to common man is the cost and maintenance of the equipment.

There is emphasis on three essentials in the training programme for laparoscopic surgery in developing countries i.e., safety, economy and care of instruments. Safety ensures complications, which ensures economy. Economy ensures the growth and spread of laparoscopic surgery in our part of the world. Instrument care ensures both safety and economy and that is why, not only the training of surgeons is necessary, the training of the paramedical staff working in the laparoscopic theatres is an essential part of the laparoscopic surgery.

Geneva Foundation for Medical Education and Research, in collaboration with WHO/Department of Essential Health Technologies and Department of Reproductive Health and Research, will develop a programme for training and research in laparoscopic surgery, aiming to improve the use of laparoscopy in developing countries.<sup>7</sup> These activities will include the development of a manual in laparoscopy, providing practical guidelines for laparoscopic training programmes conduction and evaluation of training programmes, assessment of research needs and conduct of research programmes

Pakistan Institute of Medical Sciences (PIMS) is the only major teaching hospital in the federal capital Islamabad, providing medical care to a large number of patients all around the capital area. Laparoscopic surgery is being practiced in PIMS since 1995. One surgical unit of the department of general surgery was re-designated as Minimal Access Surgical Unit (MASU) in 2007 and one operating room was allocated solely for

laparoscopic surgery. Since then almost all types of major and advanced laparoscopic surgical procedures are being performed with successful results. Seminars and workshops on advanced laparoscopic surgery were held successfully. We are looking forward to the establishment of a full fledged department of Minimal Access Surgical with dry and wet laboratory and complete institute of laparoscopic surgery with all equipment and teaching facilities.

Time has gone when someone would say that laparoscopic surgery is the future of surgery, now laparoscopic surgery is leading the present era. Training in laparoscopic surgery is the need of the hour for the Pakistani surgeons, we are already lagging behind from our neighbouring countries. Residency training programmes are needed that acknowledge the role of laparoscopic surgery according to our local requirements by offering: a structured training program, priority of training over "service", validated and reliable resident selection and evaluation methods, institutional infrastructure support including adequately equipped training laboratory, education and research support staff.

## References

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