Guidelines for laparoscopic surgery

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Introduction

In developing countries the demands of laparoscopic surgery on the entire operating team are indeed heavy. Financial stringency imposes a burden which calls for reserves of equanimity, determination and commitment to one's belief in the benefits of laparoscopic surgery. Every avenue of innovation and ingenuity has to be explored to ensure that the optimal result can be achieved at minimal cost.

The thrust of laparoscopic surgery has snowballed with almost blinding, incomprehensible speed and volume. Propelled by the aggressive enterpreneurship of instrument manufacturers, who found in laparoscopic surgery an *el Dorado* beyond their wildest dreams, forced by patient demand and advocated by pioneering surgeons with missionary if not fundamentalist zeal, there is no organ or tissue in the abdomen - both intra and extra peritoneal which has not faced the impact of this surgery. The hurricane of laparoscopic surgery hit, gripped and convulsed the developing world with the same intensity as anywhere else.

All over the world, and especially in developing countries, there is need and room for circumspection. Just because laparoscopic cholecystectomy is such a runaway success does not necessarily mean that all open surgery must be discarded. Never before in the history of surgery has surgical decision making been influenced so greatly by media hype, the thrust of instrument manufacturers and corporate bodies, patient demand often based on distorted information and a trend towards surgical one-upmanship if not gimmickry. It is imperative for surgeons in developing countries to evaluate and decide which laparoscopic procedures give real benefit to their patients as compared to the open procedure in terms of safety, efficacy, applicability and cost-effectiveness, in other words to decide what is truly beneficial surgery for the patient and what could be a circus act for the performing surgeon.

It is required of us as surgical scientists and custodians of our patients' welfare to evaluate and appraise every laparoscopic procedure not in terms of enthusiastic or even euphoric personal achievement, but rather as a pragmatic clinical study as it applies to our own conditions. To avoid pushing laparoscopic surgery to illogical extremes, one should temper the wizardry of the laparoscopic surgeon and the inventiveness of the instrument manufacturer with the wisdom of what Ogilvy wrote over 50 years ago, "There seems to be a tendency to look at change as synonymous with advance. Advance means progress to something better and not progress to something new", and St. Paul's advice, 2000 years ago, "Prove all things and hold fast to that which is good".

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Training for laparoscopic surgery

Laparoscopic surgery is a completely different ball game from conventional surgery which offers wide exposure, tissue contact, binocular vision and the use of traditional equipment. It, thus, demands specialised training. The problems of -training are further compounded by the fact that, hitherto, training has to be imparted as a 'crash-course' to surgeons in active practice, unlike the training in conventional surgery over four or five years based on the traditional principles of hands-on apprenticeship as laid down by William S. Halsted.

So far, this training has no basis of uniformity or standardisation and varies from centre to centre, country to country. Most of the early training in the developing countries was in the form of workshops lasting for 2 - 5 days. These early workshops were intensive, over eight to twelve hours a day and included

- didactic lectures not only on practical points but on contraindications, complications and solutions to problem situations.
- video- sessions depicting both correct technique and complications.
- trainer model practice practice on the trainer on a regular basis, for weeks after the workshop, is imperative for the serious laparoscopic surgeon to master eye-hand co-ordination and basic laparoscopic techniques.
- closed-circuit T.V. demonstrations of laparoscopic procedures

With time the teaching programmes expanded to include :

- journal review and book exhibition. This is the weakest link in training in developing countries.
- diagnostic laparoscopy This is the most significant training medium, imparting training in the basics 'of laparoscopy and giving eye-hand co-ordination on the best trainer-model as yet available - a live human.
- animal laboratories and surgical-skills centres A large thrust of laparoscopic surgery training in the U.S. and elsewhere is based on animal laboratory work. As a faculty member of a surgical-skills laboratory in Bombay I find that these animal laboratories are very expensive to maintain, serve a limited purpose in the developing world, and are far from being cost-effective. More damaging, after work on three animals over a few hours,

many have a sense of unjustified confidence in their ability and even leave with a 'certificate' to bolster their morale. Employed as the main method of training this is dangerous and inadequate. These centres would have considerable value and benefit if integrated into an ongoing, comprehensive, residency training programme.

- hands-on apprenticeship Short workshops are almost entirely being replaced by a return to the time-proven Halstedian method of surgical training. This hands-on training is invariably combined with work on the trainer model and diagnostic laparoscopy.

The combination is adequate to train quality laparoscopic surgeons. The real problem for such training in the developing world is that teaching hospitals, by and large, have not entered the field of laparoscopic surgery and laparoscopic surgery training for residents is unfortunately available in a minority of teaching hospitals. The bulk of hands-on training is done in private hospitals both for residents as also for surgeons who visit for three to four week programmes. Fortunately, with a reduction in the cost of equipment this trend is changing and it is to be hoped that prolonged apprenticeship in laparoscopic surgery will be an integral part of surgical training in all teaching hospitals and a pre-requisite for post-graduation.

We have found crash courses unsatisfactory and now recommend apprenticeship along the same lines as that required for training in any other branch of surgery, ensuring that the above points are attended to.

Three essentials for laparoscopic surgery

In our training programmes we emphasise three essentials for laparoscopic surgery in developing countries :

- Safety
- Economy
- Care of instruments

Not surprisingly these are inter-connected. Safety ensures complication-free surgery, 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. Every trainee starts his day setting up and connecting the equipment and ends his day cleaning the instruments with a tooth-brush or water jet, drying them and packing them for gas sterilisation. The rewards of meticulous instrument care are munificent - we have our cold light cables, telescopes, cameras and hand instruments in active use for years.

Advanced laparoscopic training

Laparoscopic surgery is no different from any other surgery. The ideal progression from one procedure to the rest should be after mastering each progressively advanced procedure before venturing to the next. This is how residents have been trained in the past.

We recommend the following steps: diagnostic laparoscopy, laparoscopic cholecystectomy, laparoscopic appendicectomy, laparoscopic repair of hernia, laparoscopic surgery for peptic ulcer disease, laparoscopic bowel surgery, laparoscopic solid organ surgery.

An essential qualification for graduating to advanced laparoscopic procedures is mastering of suturing and knotting, these attributes bring laparoscopic surgery to the level of good open surgery.

Following the lead given by Society of American Gastrointestinal Endoscopic Surgeons and European Association of Endoscopic Surgeons, several National laparoscopic surgery Societies in developing countries are trying to standardize basic patterns of training for laparoscopic surgery. Proving credentials is altogether a different problem. In the current situation where laxity of regulations prevail, there is no way we can enforce or meaningfully implement minimum standards that must be met. However, with growing patient awareness and consumer-rights consciousness, surgeons in their own interest, may themselves soon request acceptable verification of their credentials.

Guidelines for training in and practising laparoscopy

Bearing in mind the above principles, we have formulated the following guidelines.

In establishing practice guidelines, the overriding concern is that safety is not sacrificed in the process of introducing new procedures. To ensure safety, it is necessary to outline what we consider being the minimum standards of acceptable practice related to training, practice and equipment.

The Indian Association of Gastrointestinal Endo-Surgeons has taken into account the fact that surgeons to whom the guidelines are directed are responsible and competent general surgeons who:

i) understand the pathophysiology of the organs being operated on

ii) have adequate experience in the range of alternative medical and surgical therapies

iii)have adequate experience and mastery over open surgery

iv) have adequate experience in diagnostic laparoscopy

v) are aware of theirlimitations.

Trainees should attain the above basic criteria before embarking on or learning operative laparoscopic techniques.

Training

The accepted principle in training for laparoscopy is that the trainee is familiar with the instrumentation in use, 'has attained an acceptable level of hand-eye coordination and is comfortable with a video camera attached where it is used. Before these basic skills are mastered no surgery should be allowed on human patients.

These basic skills are best mastered during the endotrainer

sessions and if facilities are available on animate models. Workshops offering adequate hands-on experience of this nature are recommended. While the learning curve varies greatly, 20 hours is usually adequate. The alternative to these sessions would be longer periods of apprenticeship to experienced laparoscopic surgeons.

Having mastered basic laparoscopic techniques a structured preceptorship through the various levels of difficulty to be outlined is essential.

Preceptorship

There shall be four levels for training. Such training will consist of matters referred to in the Annexe.

Clinicians entering the preceptorship scheme for training at Level 2 should demonstrate :-

a) capability in management of surgical cases in the traditional manner.

b) ability to operate competently at Level 1 with at least 20 cases logged as assistant and ***20*** cases logged as principal surgeon.

Attainment of competence at Level 2 should be certified by the preceptor (s) only after completion of the minimum requirements:

a) acting as assistant in 20 cases

b) logging 20 cases operating under supervision of a recognized laparoscopic surgeon (preceptor).

Training at Level 3 should be embarked upon only after the clinician has proficiently performed on his own.

Training and the grant of credentials

Hospitals owe it to their patients to exercise due care in the selection of the physicians allowed to practice under its jurisdiction. To assist the various hospitals' committees that grant credentials, it is recommended that in the initial phase operating rights at the appropriate level be granted only to surgeons who are able to show documentary proof of their ability having logged the minimum requirements at the relevant level. Acceptable proof should include

a) histology reports

b) unedited video-recordings of operations

c) certificates from recognized preceptors

The onus is on clinicians who have already achieved a degree of competence and are currently practicing in the various hospitals to satisfv their respective Medical Advisory Boards as to their abilities.

Choice of Preceptors

As a general rule preceptors should be :

a) recognized as operative laparoscopic surgeons by their peers

b) are competent in both theory and practice

c) are able and willing to pass on their skills

Implementation

It is recommended that the spirit and letter of the Guidelines be adhered to in training- and credentialling exercises.

ANNEXE

Level 1

i) Diagnostic laparoscopy in absence of previous surgery

ii) Target biopsy

iii)Simple cyst aspiration

iv)Adhesiolysis of avascular adhesions

Pre-requisite for progression to Level 2 training - 20 cases at Level 1 as assistant and a further 10 as main surgeon.

Level 2

i) Diagnostic laparoscopy in patients with previous laparotomy

ii) Adhesiolysis

iii)Laparoscopic cholecystectomy where there are no prognostic features to predict a difficult dissection.

iv) Interval appendectomy

Pre-requisite for progression beyond level 2 training - 20 cases at Level 2 as assistant and a further 20 as main surgeon.

Level 3

i) All laparoscopic cholecystectomy

ii) All laparoscopic appendectomy

iii)Laparoscopic repair of hernia

Level 4

(to be placed in the relevant level when feasibility demonstrated)

i) Laparoscopic vagotomy and diagnostic seromyotomy

ii) Fundoplication

iii)Splenectomy

iv) Other advanced laparoscopic procedures.

As a medical man goes through life, he develops a conscience, which is, as it were an end-product of his reflections and experiences. If his conscience evolves along the right lines he comes to realise the sacredness of life and his profession.

If one develops a reverence for life and also for one's profession one can hardly go wrong.

-Dr. Rustom N. Cooper