

Laparoscopic cholecystectomy: evolution, not revolution

The advent of laparoscopic cholecystectomy marks a new milestone in surgical practice, as it introduces a new era of surgical treatment designed to minimize the trauma of access without compromising the well-established principles of operative surgical treatment. “Minimal access surgery” is a more appropriate term than “minimally invasive surgery” since the latter carries connotations of increased safety vis-à-vis open access operations and does not describe the essential attribute of the new approach.

Minimal access surgery is developing along three avenues: laparoscopic surgery (cholecystectomy and appendectomy, amongst others), endoluminal surgery (sleeve resections of the rectum) and endoscopic extraluminal dissection (visually controlled dissection of the oesophagus). The combination of these new approaches is likely to extend the scope of surgical procedures that can be performed with minimal exposure in the future.

Of the various laparoscopic procedures that have been performed in the human, cholecystectomy has caught the imagination of the surgical world, largely because of the prevalence of symptomatic gallstone disease in the West. Most of the perceived benefits of the minimal access approach appear to have been confirmed by the experience with laparoscopic cholecystectomy reported in the *Progress symposium* in this issue of *Surgical Endoscopy, Ultrasound, and Interventional Techniques*. In particular, laparoscopic cholecystectomy is followed by a remarkably smooth postoperative period that is free from ileus and results in minimal discomfort to the patient, early hospital discharge and accelerated convalescence, with return to work or full activity being achieved within 10–14 days. If this early experience is confirmed, the cost-benefit implications to any health care programme must be obvious.

Inevitably each new development creates its own problems and, in this respect, laparoscopic cholecystectomy is no exception. Evaluation, training, logistic, development, safety and legal implications need to be addressed. We believe that laparoscopic cholecystectomy must be evaluated by prospective clinical trials before the indiscriminate and widespread use of the procedure make it impossible for us to undertake such an assessment. Academic

departments must take the lead in this evaluation and in the further development of laparoscopic surgery. This is an opportunity that we cannot afford to miss. It is only by means of these studies that we will be able to define accurately the indications, benefits, limitations and disadvantages of the new approach.

Training is equally important. To date this has largely consisted of short didactic courses, with limited practical demonstrations in the pig. Although the educational merit of these workshops is beyond question, they do not equip the surgeon who has no prior experience in laparoscopic work, to undertake the procedure in the human with safety. The best advice to the surgeon who wants to establish laparoscopic cholecystectomy is to become fully acquainted with diagnostic laparoscopy in the first instance. He should then practise basic laparoscopic skills on bench-top trainers and then visit hospitals in which laparoscopic cholecystectomy is established to observe the procedure and become fully acquainted with the protocol. In this respect, these centres should bear the brunt of the training of their peers. As with any other new surgical procedure, there is a learning curve, but we must ensure that training is not undertaken at the expense of patient safety. It is perhaps salutary to reflect that it will not be long before patients or their lawyers may demand a videotape of their operation.

It should be stressed that the risks of laparoscopic surgery are no lower than those of the open operation, even in the hands of an experienced operator. Indeed, certain manoeuvres are more restricted and these include the control of haemorrhage. The high-risk patient (due to cardiorespiratory disease, cirrhosis or other co-morbid conditions) is equally at risk from laparoscopic cholecystectomy as he or she is from the open operation and, furthermore, the laparoscopic approach takes longer to execute.

Although laparoscopic cholecystectomy is feasible in the majority of patients with symptomatic gallstones, there are clearly defined situations in which the open operation is undoubtedly the safer option. In this respect, laparoscopic cholecystectomy should always entail a preliminary inspection and trial dissection to determine the feasibility of

this approach. There are two considerations that follow from this: (1) laparoscopic cholecystectomy must be undertaken only by fully trained abdominal surgeons with experience in biliary surgery; (2) the patient must consent to a *cholecystectomy*, and this consent must extend to the open operation in case conditions prove to be unfavourable for its execution through the laparoscopic approach.

Another vitally important concern must be stressed. It is equally unacceptable to treat patients with symptomless gallstones by laparoscopic cholecystectomy as it is by the open operation. Patients with symptomless gallstones do not require treatment unless they become symptomatic, and the advent of laparoscopic cholecystectomy has not and must not change the indications for the surgical treatment of gallstones. In our enthusiasm to adopt this new technology, we must ensure that established and proven surgical principles and doctrine are not abused to the detriment of our patients.

Several unresolved issues remain that require further development and prospective evaluation by controlled

clinical trials. These include the use of pre-operative infusion cholangiography as a substitute for laparoscopic cholangiography, the management of ductal calculi discovered at laparoscopic surgery, the optimal method of dissection of the gallbladder (electrosurgical hook-knife versus two-handed scissors dissection versus laser dissection), improved instrumentation and better techniques for the extraction of the gallbladder, to mention a few. There can be no doubt that we are embarking on a new and exciting era of surgical practice. With caution and the appropriate safeguards, we will reap maximal benefit for our patients and for our profession; without these we shall witness a substantial surgically induced morbidity, the extent of which could well jeopardise the evolution of this significant advance in surgical practice.

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