Editorial

Surgical Endoscopy

Surg Endosc (1996) 10: 957–958

Laparoscopic surgery and the third world

Health care and particularly G.I. surgery face specific problems in today's third world. Hospitals are mostly old and outdated and extremely difficult to manage. Patients' relatives overcrowd the wards in their efforts to provide sufficient food to the patients, who cannot be nourished by the hospital staff. Hygienic conditions in the middle of a myriad of people cooking and brewing are understandably very poor. In this chaos, the personnel is swamped with work and, impeded by lack of space, cannot ensure sterile conditions in wound care. This environment, together with the lack of antibiotics, leads to an unacceptably high infection rate in the large surgical incisions of conventional abdominal surgery. Longer hospital stays cause more overcrowding and ever-worsening local conditions with tragic consequences in a system where social coverage does not exist.

The lack of money limits diagnostic possibilities and exploratory laparotomy constitutes the most frequently used diagnostic tool, rather than CT and NMR, which are hardly present in the third world. Salvation in this complex matter might come from an unexpected side. By avoiding large incisions, laparoscopy dramatically reduces the invasiveness of the exploratory procedures. The smaller-size incisions mean a reduced infection risk and hence a shorter hospital stay for the patients and their relatives. It is obvious, however, that in a third world environment, laparoscopy can also encounter several problems: First, there is the cost of the equipment; second, there is the relative technical sophistication of the technique (maintenance problems) in a developing country where technical means are lacking.

Equipment costs can be contained by using reusable cannulas and trocars. Expensive automatic stapling instruments can be omitted provided advanced surgical manual techniques are used.

Whereas finding a video monitor can hardly be a problem even in the third world, the relatively sophisticated insufflator and video camera do demand careful attention since they constitute an absolute priority in the laparoscopic surgeon's armamentarium. Taking care of these instruments might, however, be less time consuming for a surgeon than the alternatives offered (supervising administration, nursing care, and long hospital stays).

Practical application areas of laparoscopy in third world countries are obvious in functional gastric surgery: Ulcer disease and gastroesophageal reflux can be cured at low cost (as compared with lifelong drug treatment in a poorly complying population). The laparoscopic surgical procedure (plication of the fundus, vagotomy) is relatively benign since neither organectomy nor organotomy is performed, whereas the means of access are minimally invasive.

Surgical treatment of infectious and parasitic disease (echinococcal cyst, deeply located abscesses) can be performed through keyhole incisions, reducing the risk of cross-infecting the wounds.

In the case of traumatic acute abdomen, laparoscopy permits a quick diagnosis of visceral damage; a second look can also easily be performed if the patient continues to deteriorate. In the case of peritonitis, laparoscopy can determine or confirm the source of infection as well as its localization. Treatment can then be undertaken either laparoscopically (e.g., in appendicitis, ectopic pregnancy, perforated ulcer) or conventionally, but via a well-localized incision, right across from the target organ as diagnosed laparoscopically.

So there may very well be a definite indication for wide-range use of laparoscopy in third world countries. At this stage, however, two additional problems arise.

First: Who will provide the funding necessary to start laparoscopy?

Second: Who will teach the technique?

Besides the "classical" cooperative organizations, one can hope for commercial companies to invest in these countries since they will constitute large markets in a near future. Moreover, permanent improvement of the present laparoscopic equipment has made lots of "first generation" instruments available while outdated in the industrial world. These instruments still work fine and have the advantage of being relatively simple. In order to empty their stocks, some companies involved in endoscopic imaging have already taken the option of sponsoring occasional medical missions (Algeria, Vietnam, Rumania) or donating first-generation instruments to surgical departments provided they will use them in third world projects.

One of the most efficient ways of teaching is based on the partnership between well-experienced and advanced laparoscopic departments and third world university departments who benefit from a true hierarchic structure and a well-established teaching function. In order to make cooperation concrete, partnership should depart from a person-to-person contact after establishing a clear strategy of cooperation. The contact person from the local university can seek financial help from international aid organizations

Correspondence to: G. B. Cadière

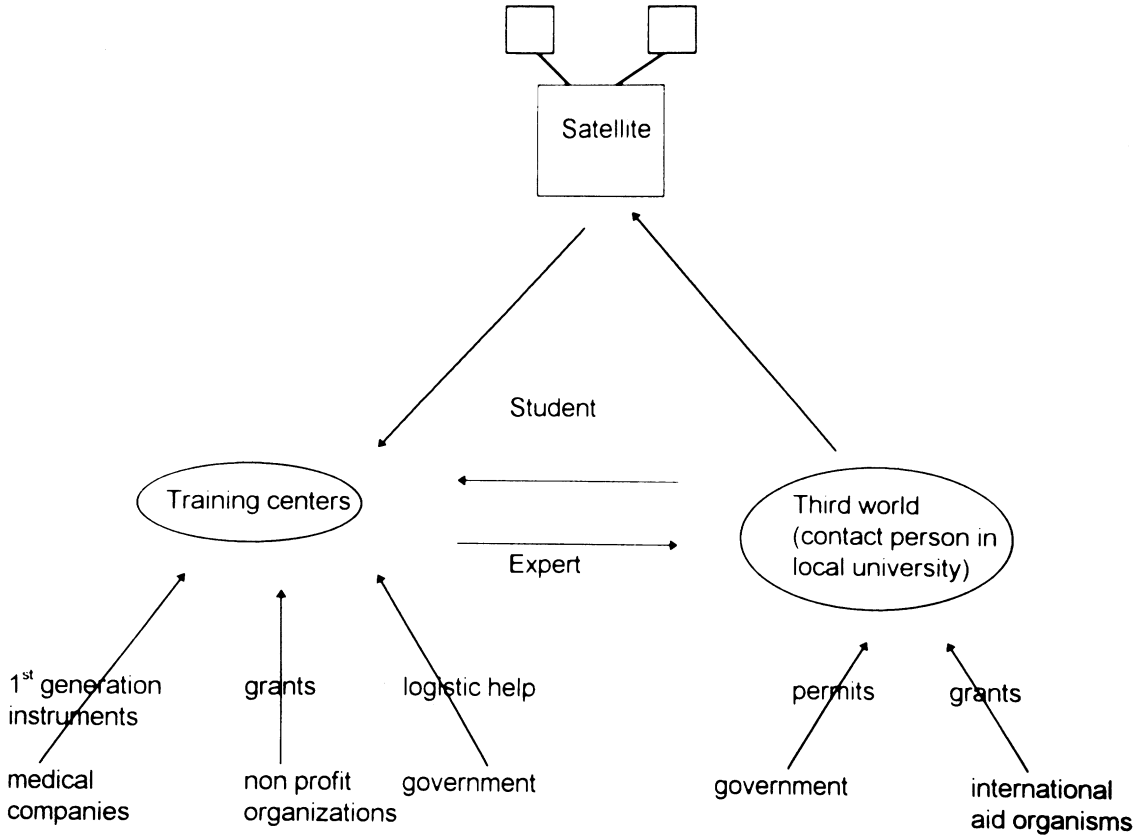

Fig. 1. Possible links among laparoscopic training centers and the third world.

(e.g., the Red Cross) and administrative help from his government (permits). He can also apply for one-year fellowships from organizations in the third world countries as well as in the western world. In turn, the contact person from the "industrial world" can pressure commercial firms to intervene as well by supplying instruments and hardware destined for projects in the third world. He can also, in certain cases, obtain logistic help from his government (e.g., advantageous airfares on national airlines) and grants from nonprofit organizations.

For the expert surgeon, part of the teaching still consists of operating in the developing countries. Morning surgical classes are followed by discussion and technical demonstrations in the afternoon. Teaching as now practiced implies frequent travels for expert or student. Future teaching, however, almost certainly will rely on the adoption of electronic highways—information will travel, obviating the need for the surgeons to do so. After completion of their fellowships, third world surgeons will be able to safely perform the laparoscopic procedures, since, through telematic connections, the expert will be capable of guiding them from a distance (proctoring). In case of mishaps, open correction can still be performed by the local surgeons, who are obviously fully trained in conventional surgery.

This new philosophy of cooperation is schematized in Fig. 1.

Help for the ailing system in the third world could therefore come from an unexpected side. Laparoscopy could very well be the key in the keyhole, opening the door to a less-grim future.

G. B. Cadière
J. Himpens
J. Bruyns

Department of G.I. Surgery
CHY Saint-Pierre
rue Haute 322
1000 Brussels, Belgium