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Laparoscopic Surgery: Recent Developments in Basic Research and Clinical Update

How does surgical or laparoscopic knowledge advance? This was the main question in a recently published commentary by Horton [1] who compared surgical research with a comic opera, questions but few answers. This provocative statement is based on a review of the first issue of nine leading general surgical journals for 1996 where 46% of the articles were case series, 18% experimental animal data and only 7% controlled randomized data. He stated that 'only when the quality of publications in the surgical literature has improved, will surgeons reasonably be able to rebut the charge that as much as half of the research they undertake is misconceived'. Surgeons must be aware of this statement, especially when performing laparoscopic surgery.

Laparoscopic surgery is now considered to be the new standard treatment for symptomatic gallstones and gastroesophageal reflux disease; furthermore, laparoscopy is a proven diagnostic tool for evaluating acute and chronic abdominal pain. However, since the introduction of laparoscopic surgery in general surgery, laparoscopic cholecystectomy (LC) has become the standard treatment for symptomatic gallstones without the backup of comparative scientific data. In a recently published controlled randomized series comparing LC versus small-incision cholecystectomy, it could be demonstrated that LC did not offer any clear advantages over open small-incision cholecystectomy [2]. Thus, the overall value of laparoscopic surgery even for treating symptomatic gallstones is under debate, and many further questions such as postoperative adhesion formation, tumor seeding, postoperative immunological response, and socioeconomic factors have to be answered. This can only be achieved when we, the laparoscopic surgeons, start to improve the quality of our surgical research, either by performing basic experimental research (with standardized surgical procedures in a small animal model), or by performing well-designed randomized clinical series, multicenter studies and meta-analyses. Although large prospective case series are important

in clinical surgical research, they are considered to be of minor scientific importance and cannot define the exact role of laparoscopic surgery in clinical practice.

Therefore, the current issue of *Digestive Surgery* aims to rebut the charge that laparoscopic research is of minor value, and that it can be performed experimentally and clinically on a high scientific level. The first topic deals with the impact of the postoperative immune response both clinically and experimentally. Furthermore, an overview is given on the role of the pneumoperitoneum using different gases on tumor growth and seeding, and summarizes the risk of laparoscopic surgery on developing port-site recurrences in general and colorectal surgery.

The second topic deals with experimental animal surgery, how can laparoscopy be performed in the rat and which surgical procedures are standardized. Furthermore, it adds a new resectional technique of partial hepatectomy, which can be performed laparoscopically in a small animal model. Finally it summarizes the impact, pathogenesis and prevention on postoperative adhesion formation after open and laparoscopic surgery.

The third topic gives a clinical update on laparoscopic hernia repair and the laparoscopic treatment of gastroesophageal reflux disease. Two new fields in endoscopic surgery are furthermore presented, namely retroperitoneoscopy and assisted spine surgery.

We hope that the current issue demonstrates the need and importance of well-performed research in laparoscopic surgery in order to rebut the charge that laparoscopic research is of questionable value.

References

- 1 Horton R: Surgical research or comic opera: Questions, but few answers. *Lancet* 1996;347:984-985.
- 2 Majeed AW, Troy G, Nicholl JP, Smythe A, Reed MWR, Stoddard CJ, Peacock J, Johnson AG: Randomised, prospective, single-blind comparison of laparoscopic versus small-incision cholecystectomy. *Lancet* 1996; 347:989-994.

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