The Danger of Time-Consuming Operative Laparoscopies: Avoiding Severe Complications

Langandauernde operative Laparoskopien: Gefährdung durch schwerwiegende Komplikationen

Author R. L. De Wilde

Affiliation Department of Obstetrics, Gynecology and Gynecological Oncology, Pius Clinic, 26121 Oldenburg

Key words
- operative laparoscopy
- complications
- time factor
- thrombosis
- nerve lesions
- compartment syndrome

Schlüsselwörter
- operative Laparoskopie
- Komplikationen
- Zeitfaktor
- Thrombose
- Nervenschädigung
- Kompartimentsyndrom

The number of operative laparoscopies in gynecology is steadily growing, reducing the surgeries done by laparotomy [1]. As a part of this phenomenon, the more extensive minimally invasive operations are increasing, in benign [2] as well as in malignant disease [3]. Therefore, many operative laparoscopies become more time-consuming. This is enhanced by the fact that not all gynecological surgeons are sufficiently qualified in minimally invasive surgery [4] and young residents need more operation time because of the existing learning curve [5].

Due to the longer operation time, thermic coagulation is applied more frequently with possible spread to the nerves and also time-related positioning problems of arms and especially legs, making more nerve lesions occur [6].

Also due to the inactive stay on the operation table, the longer the surgery takes, the more thrombosis with embolism will potentially occur [7]. Even passively moving the patient during narcosis or enhancing the perioperative heparinisation, does not seem to affect the higher thrombosis induction. But not only clotting-induced embolism happens, the rate of CO_2-embolism is also higher, as the amount of gas used, is one of the correlatives to the total surgery time [8].

The compartment syndrome, being one of the most dangerous complications, is known to be correlated to time-consuming surgeries [9].

Concerning the oncological complications, the intraperitoneal implants [10] and the trocar port metastases [11] are time-connected due to persistent lesion of the peritoneum and the more frequent tissue inoculation outside of the surgical field. The secondary adhesion problem is another facet of the same peritoneal damage [12]; here a postoperative bowel obstruction is a possible complication [13]. Further scientific investigations will evaluate the effects of modifying the gas-induced intraabdominal microclimate (temperature, hydration, pressure,…) to reduce the time effect.

Summarizing, the take-home message should be that a careful evaluation is necessary to assess "if *this* surgeon can perform *this* operation in *this* patient with *this* disease using *this* minimal access technique in an adequate period of time?" or another way of entrance ought to be chosen to reduce the complications cited above.

Conflict of Interest

No conflict of interest.

References

1 *Twijnstra ARH, Kolkman W, Trimbos-Kemper GCM et al.* Implementation of advanced laparoscopic surgery in gynecology: national overview of trends. J Minim Invasive Gynecol 2010; 17: 487–492
2 *Diwadkar GB, Chen CCG, Paraiso MFR.* An update on the laparoscopic approach to urogynecology and pelvic reconstructive procedures. Curr Opin Obstet Gynecol 2008; 20: 496–500
3 *Mettler L, Meinhold-Heerlein I.* The value of laparoscopic surgery to stage gynaecological cancers: present and future. Minerva Ginecol 2009; 61: 319–337
4 *Mayooran Z, Rombauts L, Brown TIH et al.* Reliability and validity of an objective assessment instrument of laparoscopic skill. Fertil Steril 2004; 82: 976–978
5 *Ascher-Walsh CJ, Capes T.* An evaluation of the resident learning curve in performing laparoscopic supracervical hysterectomies as compared with patient outcome: five-year experience. J Minim Invasive Gynecol 2007; 14: 719–723
6 *Lam A, Kaufman Y, Khong SY et al.* Dealing with complications in laparoscopy. Best Pract Res Clin Obstet Gynaecol 2009; 23: 631–646
7 *Nick AM, Schmeler KM, Frumovitz MM et al.* Risk of thromboembolic disease in patients undergoing laparoscopic gynecologic surgery. Obstet Gynecol 2010; 116: 956–961
8 *Hong JY, Kim WO, Kil HK.* Detection of subclinical CO_2 embolism by transesophageal echocardiography during laparoscopic radical prostatectomy. Urology 2010; 75: 581–584

Bibliography
DOI http://dx.doi.org/10.1055/s-0031-1298395
Geburtsh Frauenheilk 2012; 72: 291–292 © Georg Thieme Verlag KG Stuttgart · New York · ISSN 0016-5751

Correspondence
Prof. Dr. Dr. med. R. L. De Wilde
Pius-Hospital
Klinik für Frauenheilkunde, Geburtshilfe und gynäkologische Onkologie
Georgstraße 12
26121 Oldenburg
rudy-leon.dewilde@pius-hospital.de
www.pius-hospital.de

9 *Rao MM, Jayne D.* Lower limb compartment syndrome following laparoscopic colorectal surgery: a review. Colorectal Dis 2011; 13: 494–499
10 *Volz J, Köster S, Spacek Z et al.* The influence of pneumoperitoneum used in laparoscopic surgery on an intraabdominal tumor growth. Cancer 1999; 86: 770–774
11 *Agostini A, Carcopino X, Franchi F et al.* Port site metastasis after laparoscopy for uterine cervical carcinoma. Surg Endosc 2003; 17: 1663–1665
12 *De Wilde RL, Trew G.* Postoperative abdominal adhesions and their prevention in gynaecological surgery. Expert consensus position. Gynecol Surg 2007; 4: 161–168
13 *Lower AM, Hawthorn RJ, Clark D et al.* Adhesion-related readmissions following gynaecological laparoscopy or laparotomy in Scotland: an epidemiological study of 24046 patients. Hum Reprod 2004; 19: 1877–1885