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

Langandauernde operative Laparoskopien: Gefährdung durch schwerwiegende Komplikationen

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### **Key words**

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

### Schlüsselwörter

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- 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  $\rm CO_2$ -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 (tem-

perature, 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**

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No conflict of interest.

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