Chapter 4

LAPAROSCOPIC SURGERY IN PREGNANCY

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Although the good outcomes of laparoscopic surgery are parallel for non-pregnant and pregnant women, this technique is avoided in pregnant women due to possible concerns such as fetal acidosis, fetal hypoxia, uterine perforation, premature rupture of membranes, premature birth. However, in many studies, it has been shown that laparoscopic interventions such as appendectomy, cholecystectomy, adnexal mass and torsion operations, radical nephrectomy, splenectomy, adrenalectomy, retroperitoneal lymphadenectomy and ventral hernia repair are reliable and performed successfully in pregnant women (1-3).

Once the need for surgery is determined, the surgical approach (laparotomy or laparoscopy) is based on the surgeon's skills and the availability of appropriate personnel and equipment. In pregnant women requiring surgery, laparoscopy appears to be associated with less risk than laparotomy (4, 5). In a national cohort study of 20,000 women who had an appendectomy or cholecystectomy during pregnancy, laparotomy was associated with a threefold raise in the risk of postoperative obstetric complications compared with laparoscopy (6). In a study investigating the effect of laparoscopy and laparotomy on the fetus during pregnancy, it was shown that there was no significant difference between stillbirth, weight at birth, gestational term, intrauterine growth restriction, neonatal death rates and congenital malformations (7).

In any trimester we can perform laparoscopy, but the best time for surgery is the early second trimester (3). Although the procedures done in the first trimester are technically easier, the emergence of a potential teratogen during organogenesis is alarming. Whether a laparoscopic procedure can be performed in the third trimester is variable by individual clinical factors (size of the uterus, the disorder being treated, body habitus, medical and obstetric conditions).

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was no significant difference in PaCO2, pH values and mean PaCO2-PetCO2, and capnography was sufficient to guide ventilation (13). It is recommended that the PaCO2 level be kept between 32 and 34 mmHg because there is no report of respiratory acidosis at this level (14, 15). If maternal acidosis occurs, the patient should be hyperventilated immediately and the intra-abdominal pressure should be reduced. These measures can help rejuvenate the fetus by improving the blood flow of placenta and oxygenation of fetus (16).

Fetal heart rate must be verified and documented with a Doppler device or ultrasonography before and after the procedure. Antiemetics and opioids can be used to prevent postoperative nausea and pain. Nonsteroidal anti-inflammatory drugs should be avoided since they may cause fetal ductus arteriosus to be closed early, especially after 32 weeks of pregnancy.

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