



Laparoscopic Appendectomy in Pregnant Women: Due to a Case

Gebelerde Laparoskopik Apandektomi: Bir Olgu Nedeni ile

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Abstract / Öz

Establishing a correlation between pregnancy and physiological changes and symptoms that generally arise during pregnancy can cause delays in diagnosing and treating acute appendicitis in pregnant women. Selecting the treatment is important because of the presence of potential maternal and fetal complications. Currently, laparoscopic appendectomy (LA) remains a topic of discussion for treating acute appendicitis occurring in pregnant women. Here we present the case of a pregnant woman who underwent laparoscopic appendectomy, as well as a literature review.

Keywords: Pregnancy, appendectomy, laparoscopic surgery

Gebelik esnasında meydana gelen fizyolojik değişiklikler ve ortaya çıkan semptomların genellikle gebelikle ilişkilendirilmesi, gebelerde görülen akut apandisit tanı ve tedavisinde gecikmelere neden olabilmektedir. Maternal ve fetal potansiyel komplikasyonların varlığı nedeni ile seçilecek tedavi yöntemi de ayrıca önem kazanmaktadır. Günümüzde, gebelerde meydana gelen akut apandisit tedavisinde laparoskopik apandektomi (LA) hala tartışma konusudur. Bu sunumda bir olgu nedeni ile gebelerde laparoskopik apandektomiyi literatür eşliğinde inceledik.

Anahtar Kelimeler: Gebelik, apandektomi, laparoskopik cerrahi

Introduction

The most common reason for non-obstetric surgery during pregnancy is acute appendicitis (1). The anatomical and physiological changes that occur during pregnancy can make the diagnosis of acute appendicitis difficult and can cause a delay in its treatment. Delayed treatment results in the classic complications of acute appendicitis and pregnancy-associated complications such as fetal loss and preterm labor (2). Although laparoscopic appendectomy (LA) is accepted as the standard treatment for acute appendicitis and can be performed for pregnant patients, its reliability remains controversial (3).

Case Report

A 23-year-old patient with complaints of abdominal pain and loss of appetite, which started 5 days ago, was referred to our emergency department. During the physical examination, the patient had fever (37.1°C), pulse rate was 90 beats/min, and arterial blood pressure was 120/80 mmHg. The patient experienced sensitivity and rebound tenderness in both abdominal lower quadrants, which were more notable in the right quadrant. Beta-human chorionic gonadotropin level was measured 43231 mIU/mL, and white blood cell level was 15800 g/L. Ultrasonography revealed that the diameter of the appendix, which was observed to be edematous, was 11 mm. In addition, the live fetus was observed in the endometrial cavity, which is compatible with seven weeks. The diagnosis of acute appendicitis and pregnancy was made at the same time. The patient underwent LA under general anesthesia. The first entry into the abdomen was made via the Hasson technique. The operation was performed at low intra-abdominal pressure (10 mmHg). Prophylactic tocolytics, which suppress premature labor, were not administered. On day 1 after the operation, the patient was discharged. Neither the patient nor the fetus developed any complications. Based on the pathology result, acute gangrenous appendicitis was reported. Written informed consent was obtained from the patient.

Discussion

Currently, LA can be successfully performed in pregnant patients. Although the postoperative analgesic requirement of the patient and the hospitalization period are low with the laparoscopic approach, possible complications such as the uterus blood circulation being reduced owing to the increase in pressure with the pneumoperitoneum, fetal acidosis, preterm labor, and potential injury during the trocar placement have resulted in disputed reliability of LA (3).

Chung JC et al. (4) stated that LA was similar to open appendectomy (OA) in terms of the well-being of the mother and fetal results and that it can be safely and effectively performed during all trimesters. Cheng HT et al. (5) who compared LA and OA in 859 pregnant women diagnosed with acute appendici-

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tis, stated that LA did not cause an increase in maternal complications but reduced the duration of hospitalization and thus could be safely performed for pregnant patients.

Although a potential damage is considered to accompany LA in the third trimester depending on the uterus size, Walsh CA et al. (6) revealed that there was no difference between each of the three trimesters in terms of fetal loss and preterm labor. The same study reported that fetal loss occurred more with LA; however, preterm labor occurred more with OA. A meta-analysis compared between 599 LAs and 2816 OAs in pregnant women and reported that fetal loss occurred more with LA and that no increase in other complications, including the preterm labor, was observed. However, considering that the rate of fetal loss may increase in cases with complicated appendicitis such as perforation and the presence of an abscess, considering the severity of appendicitis during evaluation appears to be more convenient while comparing fetal loss between LA and OA (1).

Regarding complications associated with first trocar no significant difference was detected between the Hasson open technique and veress needle (6, 7). None the less, most surgeons prefer placement of the first trocar via the open technique. However, from which location would the first trocar be placed depends on the age of pregnant patients. Because of the distance from the uterus, the midline between the umbilicus and sternum may be more appropriate in the second half of the pregnancy (7). Because of the risk for fetal hypercapnia and acidosis, the pressure of the pneumoperitoneum is recommended to be ≤ 12 mmHg. However, no difference was observed at pressures between 10 and 12 mmHg (8, 9). In our case, the first entry into the abdomen was made via the Hasson technique just over the umbilicus, and a 10-mm trocar was placed. Two more 5-mm trocars were placed from the midline between the suprapubic and pubis umbilicus. The operation was completed with a 10-mmHg pressurized pneumoperitoneum so as not to reduce the uterus blood circulation.

Pregnant patients with acute appendicitis should be followed up by the Department of Obstetrics and Gynecology because of possible maternal and fetal complications. However, the implementation of prophylactic tocolysis is not routinely recommended to reduce the risk for fetal loss (10). In our case, follow-up was performed together with the Department of Obstetrics and Gynecology and included assessments made before the operation, immediately after the operation, and 1 week after the operation. Tocolytics were not administered because they are not recommended by the Department of Obstetrics and Gynecology. No maternal or fetal complications were observed.

Conclusion

Considering its general advantages, LA can be considered as an alternative method to OA in pregnant women. However, further studies that consider other predisposing factors that increase the risk for preterm labor or fetal loss in patients and the severity of appendicitis are required.

Informed Consent: Written informed consent was obtained from the patient

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