

Laparoscopic cholecystectomy in pregnant women can be performed safely with cesarean section

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Abstract

Aim: The aim of this study is to demonstrate the efficacy of laparoscopic cholecystectomy performed during cesarean section in patients with symptomatic or complicated gallstones during pregnancy to prevent complications associated with gallstones in the early postpartum period.

Materials and Methods: Patients were selected among the patients who were followed up in the obstetrics clinic between 2010 and 2015, who had gallbladder stones and showed symptoms such as acute cholecystitis, biliary pancreatitis, choledocholithiasis and biliary colic. Fifteen patients accepted our recommendation of laparoscopic cholecystectomy with cesarean section. Patients were evaluated together with general surgery clinic. Patients with biliary colic due to bile sludge and who underwent cholecystectomy during pregnancy were excluded from the study. Informed consent forms were obtained from the patients. The study was approved by the "Aksaray University Rectorate Human Research Ethics Committee" with the protocol number 2020/08-03.

Results: Laparoscopic cholecystectomy was performed in the second trimester of pregnancy (two patients due to acute cholecystitis and one patient due to biliary pancreatitis) in three patients who did not respond to medical treatment. The other 12 patients underwent laparoscopic cholecystectomy simultaneously with cesarean section. Eight patients were discharged on postoperative first day and four patients were discharged on postoperative second day.

Conclusion: We believe that laparoscopic cholecystectomy can be performed safely with caesarean section in pregnant women with symptomatic and complicated gallstones.

Keywords: Cholecystectomy; cholelithiasis; laparoscopy; pregnancy

INTRODUCTION

Acute appendicitis and gallbladder stones are the most common causes of acute abdominal pain in pregnant women except obstetric causes. Gallstones are the most common causes of surgery in pregnant women after acute appendicitis. Maternal and infant morbidity and mortality increase due to these non-obstetric diseases (1).

Pregnancy is a risk factor for the formation of stones and sludge in the gallbladder. More than half of the gallbladder sludge and stones detected during pregnancy disappear spontaneously after pregnancy. Therefore, these patients are generally followed up conservatively during pregnancy. However, recurrent biliary colic occurs more frequently in patients with gall bladder stones who were followed conservatively than those who were not pregnant. In these patients, ERCP due to choledocholithiasis may cause more serious morbidity (2,3).

More than half of the patients with gallbladder-related symptoms who did not undergo cholecystectomy in the antepartum period become symptomatic in the early postpartum period. Therefore, cholecystectomy is recommended for patients with complicated gallstones (acute cholecystitis, choledocholithiasis, biliary pancreatitis) during pregnancy or in the early postpartum period (4).

The aim of this study is to demonstrate the efficacy of laparoscopic cholecystectomy performed during cesarean section in patients with symptomatic or complicated gallstones during pregnancy in order to prevent complications related to gallstones in the early postpartum period.

MATERIALS and METHODS

The study was conducted by retrospectively examining the records of patients with gallstones or mud, who were

Received: 15.09.2020 **Accepted:** 27.10.2020 **Available online:** 21.05.2021

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followed by the gynecology and general surgery clinic between 2010 and 2015. During pregnancy, patients with abdominal pain except obstetric causes were evaluated together with general surgeons. Twenty-eight Patients with gallstones detected during pregnancy, having 2 or more biliary colic attacks, 1 or more cholecystitis attacks and complicated (such as choledocholithiasis and biliary pancreatitis) were found. Following cooperative evaluation with general surgery and gynecology, simultaneous laparoscopic cholecystectomy with cesarean section (emergency and elective) was recommended for these patients with gallstones. Fifteen patients who accepted this recommendation were included in the study. Patients with gallstones but no symptoms or complications developed and who had only one biliary colic attack due to bile sludge were excluded from the study. In addition, patients who underwent cholecystectomy during pregnancy were excluded from the study. Informed consent form was obtained from the patients. As a statistical method, we expressed the standard average and the number of cases as a percentage, due to the small number of patients. The study was approved by the "Aksaray University Rectorate Human Research Ethics Committee" with the protocol number 2020 / 08-03.

Technique

The patients underwent cesarean section operation with low suprapubic incision or over old incision scar under general anesthesia by gynecologist. All layers of uterus were closed according to anatomy. The uterus was taken out and 10-11 trocar was placed through a 1 cm incision under the umbilicus under direct vision to the abdomen before the incision was closed (Figure 1). At this stage, the general surgeon was involved. Pneumoperitoneum was created by carbon dioxide insufflation from the trocar placed under the direct vision and three other trocars were entered with a camera. Positioned and cholecystectomy performed.



Figure 1. Inserting infraumbilical port

RESULTS

Fifteen patients with complicated gallstones were identified during pregnancy. Laparoscopic cholecystectomy was performed in the second trimester of pregnancy (2 patients due to acute cholecystitis and 1 patient due to

biliary pancreatitis) in 3 patients who did not respond to medical treatment. The characteristics of the patients and symptoms during pregnancy are summarized in Table 1. During pregnancy, stones dropped into the bile in two patients, and these patients had stone extirpation with ERCP in the 2nd and 3rd trimesters.

Table 1. The basic features of the patients

	n (%)
Patient	12
Age	32 (25-38)
Symptoms during pregnancy	
Biliary Colic	6 (50)
Acute Cholecystitis	3 (25)
Choledocholithiasis	2 (16.5)
Biliary pancreatitis	1 (8.5)

Having gas discharged 8 patients on the first postoperative day and 4 patients were on the second postoperative day were started oral food and they were discharged. No postoperative complication occurred in the patients due to cesarean section or cholecystectomy.

DISCUSSION

In this study, it has been shown that caesarean section and laparoscopic cholecystectomy together can be performed safely in 12 patients. Caesarean section and laparoscopic cholecystectomy can be performed simultaneously, especially in patients with complicated gallstones or recurrent symptoms. Gallbladder-related problems in pregnant women are associated with increased maternal and infant morbidity and mortality. It has been shown in various studies that invasive procedures such as laparoscopic cholecystectomy and ERCP can be performed safely in patients with complicated gallstones during pregnancy (5,6). On the other hand, approximately 5% of 9714 pregnant women who underwent cholecystectomy developed maternal and infant morbidity. In this study, cholecystectomies performed during pregnancy were found to be associated with longer hospitalization and increased cost than non-pregnant patients (7).

Conservative treatment of symptomatic gallbladder stones and postponement of cholecystectomy cause symptomatic and complicated early postpartum period. In a study conducted by Veerappan A et al, 56 patients with complicated gallbladder disease during pregnancy reported that 58% of those treated conservatively became symptomatic in the postpartum period. 82% of them became symptomatic in the first 3 months postpartum period (4). Jorge AM et al found that 75% of 53 patients with symptomatic gallstones during pregnancy required cholecystectomy for recurrent symptoms within the first 3 months postpartum (8).

Laparoscopic cholecystectomy with caesarean section was first described in 1997 by Pelosi MA et al (9). In this case, all trocars were placed under direct vision and the

abdomen was closed. Two years later, hand-assisted laparoscopic cholecystectomy was described by the same authors (10). In the following years, there are studies in the literature in the form of case reports suggesting that cholecystectomy can be performed with cesarean section (11,12).

Mushtaque M et al (13) performed cholecystectomy in 32 cases with a mini-subcostal incision at the same time by cesarean section. Patients were discharged in the following postoperative 5-7th days. The authors advocated that two operations be performed simultaneously instead of separate operations. However, since laparoscopic cholecystectomy is a minimally invasive procedure, it is wise to perform laparoscopic cholecystectomy simultaneously with caesarean section. The fact, in our study, that the duration of hospitalization did not exceed two days supports that thought.

CONCLUSION

In conclusion, laparoscopic cholecystectomy can be performed safely with caesarean section in pregnant women with symptomatic and complicated gallstones.

Competing interests: The authors declare that they have no competing interest.

Financial Disclosure: There are no financial supports.

Ethical approval: The study was approved by the "Aksaray University Rectorate Human Research Ethics Committee" with the protocol number 2020/08-03 and have therefore been performed in accordance with the ethical standards laid down in the 2013 Declaration of Helsinki.

REFERENCES

1. Gilo NB, Amini D, Landy HJ. Appendicitis and cholecystitis in pregnancy. Clin Obstet Gynecol 2009;52:586-96.
2. Dhupar R, Smaldone GM, Hamad GG. Is there a benefit to delaying cholecystectomy for symptomatic gallbladder disease during pregnancy? Surg Endosc 2010;24:108-12.
3. Othman MO, Stone E, Hashimi M, et al. Conservative management of cholelithiasis and its complications in pregnancy is associated with recurrent symptoms and more emergency department visits. Gastrointest Endosc 2012;76:564-9.
4. Veerappan A, Gawron AJ, Soper NJ, et al. Delaying cholecystectomy for complicated gallstone disease in pregnancy is associated with recurrent postpartum symptoms. J Gastrointest Surg 2013;17:1953-9.
5. del Avila-Silva MR, Zavala-Castillo JC, Coronel-Cruz FM. Laparoscopic cholecystectomy in pregnant patient: experience in hospital General de Mexico in a period of 5 years (2008-2012). Ginecol Obstet Mex 2014;82:509-17.
6. Silvestri MT, Pettker CM, Brousseau EC, et al. Morbidity of appendectomy and cholecystectomy in pregnant and nonpregnant women. Obstet Gynecol 2011;118:1261-70.
7. Kuy S, Roman SA, Desai R, et al. Outcomes following cholecystectomy in pregnant and nonpregnant women. Surgery 2009;146:358-66.
8. Jorge AM, Keswani RN, Veerappan A, et al. Non-operative management of symptomatic cholelithiasis in pregnancy is associated with frequent hospitalizations. J Gastrointest Surg 2015;19:598-603.
9. Pelosi MA, Pelosi MA, Villalona E. Laparoscopic cholecystectomy at cesarean section. A new surgical option. Surg Laparosc Endosc 1997;7:369-72.
10. Pelosi MA, Pelosi MA, 3rd, Villalona E. Hand-assisted laparoscopic cholecystectomy at cesarean section. J Am Assoc Gynecol Laparosc 1999;6:491-5.
11. Bernard A, Butler L, Crump S, et al. Concurrent cesarean section and hand port-assisted laparoscopic cholecystectomy: a safe approach. Surg Laparosc Endosc Percutan Tech 2005;15:283-4.
12. Weber Sánchez A, García-Benítez CQ, Bravo Torreblanca C, et al. Case report. Post cesarean section laparoscopic cholecystectomy for hydrocholecystitis. Ginecol Obstet Mex 2011;79:230-4.
13. Mushtaque M, Guru IR, Malik TN, et al. Combined lower segment cesarean section and cholecystectomy in single sitting-our initial experience. J Turk Ger Gynecol Assoc 2012;13:187-90.