

Laparoscopic cholecystectomy due to acute calculous cholecystitis in 16 weeks' in vitro fertilization and embryo transfer pregnancy: report of the first case

Augustin, Goran; Vrčić, Hrvoje; Župančić, Božidar

Source / Izvornik: **Journal of Postgraduate Medicine, 2012, 58, 298 - 300**

Journal article, Published version

Rad u časopisu, Objavljena verzija rada (izdavačev PDF)

<https://doi.org/10.4103/0022-3859.105455>

Permanent link / Trajna poveznica: <https://urn.nsk.hr/urn:nbn:hr:105:407745>

Rights / Prava: [In copyright](#) / [Zaštićeno autorskim pravom.](#)

Download date / Datum preuzimanja: **2024-05-28**



Repository / Repozitorij:

[Dr Med - University of Zagreb School of Medicine](#)
[Digital Repository](#)



ISSN 0022-3859

Impact Factor® for 2011: **1.263**



Wolters Kluwer
Health

Medknow

Journal of Postgraduate Medicine

Official Publication of
The Staff Society of the Seth GS Medical College and KEM Hospital, Mumbai, India

October-December 2012 | Volume 58 | Issue 4

www.jpgmonline.com

Laparoscopic cholecystectomy due to acute calculous cholecystitis in 16 weeks' *in vitro* fertilization and embryo transfer pregnancy: Report of the first case

Augustin G, Vrcic H¹, Zupancic B²

Department of Surgery,
University Hospital Center
Zagreb, Kišpatičeva 12,
¹Department of Obstetrics
and Gynecology,
University Hospital Center
Zagreb, Kišpatičeva 12,
²Department of Pediatric
Surgery, Clinical Hospital
Center Sisters of Charity,
Klaićeva 16, Zagreb,
Croatia

Address for correspondence:
Dr. Goran Augustin,
E-mail: augustin.goran@gmail.com

ABSTRACT

The most common causes of acute abdomen during pregnancy are acute appendicitis followed by acute cholecystitis. The case presented is a 33-year-old patient in 16 weeks' *in vitro* fertilization and embryo transfer pregnancy who developed acute cholecystitis. Previously there were two unsuccessful cycles, one complicated with ovarian hyperstimulation syndrome. Due to clinical deterioration during intravenous antibiotic therapy laparoscopic cholecystectomy was performed and acute cholecystitis found. The postoperative course was uneventful. During the first 24 h tocolysis with intravenous fenoterol in addition to peroral atenolol 2×50 mg was administered. Postoperative course was uneventful with further normal pregnancy. Elective cesarean section was made in term pregnancy (39 weeks) with singleton with Apgar 10/10. Current guidelines do not recommend prophylactic tocolysis in pregnant population with acute abdomen but there is no mention of the IVF-ET subpopulation of patients. Also, there are no guidelines for thromboprophylaxis in such patients with increased risk of thromboembolic accidents. To our knowledge this is the first case report of a laparoscopic cholecystectomy during IVF-ET gestation.

Received : 06-07-2012
Review completed : 25-08-2012
Accepted : 12-09-2012

KEY WORDS: Cholecystitis, *in vitro* fertilization, laparoscopy, pregnancy, tocolysis

Introduction

In vitro fertilization and embryo transfer (IVF-ET) is prone to some serious obstetric and gynecologic complications during pregnancy, especially heterotopic pregnancy^[1,2] and injury of adjacent pelvic organs.^[3] On the other hand, acute surgical conditions in normal pregnancy increase maternal and fetal morbidity and mortality. Unfortunately, due to the rare occurrence of surgical acute abdomen in IVF-ET pregnant patients there are no recommendations and guidelines for such situations. To our knowledge there is no case report of a patient

with acute cholecystitis during IVF-ET pregnancy treated with laparoscopic cholecystectomy.

Case Report

A 33-year-old afebrile female, gravida 1 para0, was admitted to the Department of Internal Medicine due to one-day history of biliary colic. She did not have such symptoms previously. Her 16 weeks' pregnancy was induced by IVF-ET (third cycle) after five years of unsuccessful natural conception. One cycle was complicated with ovarian hyperstimulation syndrome treated with heparin and albumin. Laboratory findings were as follows: White blood cells (WBC) $13.9 \times 10^9/L$, C-reactive protein (CRP) 11 mg/L, Hgb 119 g/L. Alkaline phosphatase, gamma glutamyltranspherase, aspartate transaminase, alanine transaminase, lactate dehydrogenase and total bilirubin levels were normal. Abdominal sonography revealed dilated gallbladder with multiple 5-mm calculi and 5-mm gallbladder wall. Fourteen years ago she had reactive arthritis on the second and third finger of her right hand due to cervical ureaplasmaurealyticum treated with doxycycline. Her Body Mass Index (BMI) was

Access this article online	
Quick Response Code:	Website: www.jpgmonline.com
	DOI: 10.4103/0022-3859.105455

26 and she smoked till pregnancy for 16 years, 20 cigarettes a day (1-2 cigarettes a day in pregnancy) but did not drink alcoholic beverages and did not use medications or have any allergies. The next day due to increase in WBC to $18.9 \times 10^9/L$ and CRP to 45 mg/L at the temperature of $37.3^\circ C$, abdominal surgeon was consulted and due to clinical deterioration the operation was indicated, and the patient received intravenous cephazolin 1 g preoperatively.

Lower leg pneumatic compression device was placed prior to operation. Four-trocar laparoscopic cholecystectomy in left lateral tilt French position was performed which revealed dilated gangrenous gallbladder covered with greater omentum. The Hasson open technique was used for the insertion of the first 10-mm trocar supraumbilically (the uterine fundus was 2 cm below the umbilicus). The three other trocars were inserted in typical positions. Pneumoperitoneum was maintained with carbon dioxide (CO_2) for an average intraabdominal pressure of 12 mmHg. Harmonic scissors (produce vapor-free gas) were used, avoiding the potential effects of carbon monoxide. Gallbladder was distended with thickened edematous wall. After clipping division of cystic artery and cystic duct the gallbladder was removed and put in a plastic bag. After copious lavage the abdominal drain was inserted in subhepatic space and the specimen extracted through supraumbilical incision. The operation lasted 50 min. Opening of the gallbladder revealed multiple yellow (cholesterol) stones 5 mm in diameter. During the operation maternal CO_2 was monitored and was in normal range.

Immediately after completion of the operation the gynecologist recommended tocolysis for 24 h with intravenous fenoterol with addition of peroral atenolol 2×50 mg. There was no additional postoperative thromboprophylaxis. The drain was removed on the first postoperative day and during two days she received intravenous cephazolin 3×1 g and ketoprofen 3×100 mg. On the first postoperative day she started peroral feeding and had formed stool on the second postoperative day. The patient was afebrile and on the second postoperative day she was in good condition transferred to the Gynecology and Obstetrics Clinic for further pregnancy monitoring. Further pregnancy was normal and the patient had elective cesarean section during term pregnancy (39th week) of a male singleton (breech presentation, 3880 g, 52 cm) with Apgar 10/10.

Discussion

Around 1% of births is by assisted reproductive technology.^[4] The complications of IVF may be related to the procedure itself or underlying problems that caused the subfertility, maternal age, obesity, hyperoestrogenism, and medical factors. Another group of complications are acute abdominal conditions during IVF pregnancy. Most case reports describe acute abdomen developing as a direct consequence of the procedure of IVF presenting in few hours to few days. There are only several case reports of localized or diffuse peritonitis in patients (weeks or months) after IVF pregnancy. These patients (case reports) could be divided into obstetric/gynecologic or surgical group. In the obstetric/gynecology group there were cases of ruptured

pyosalpinx^[5] and several cases of tubo-ovarian or pelvic abscesses,^[6-8] and in the surgical group there were three cases of acute appendicitis.^[9-11]

There is no published case (PubMed search) of laparoscopic cholecystectomy due to acute cholecystitis in a patient with IVF pregnancy. Authors' opinion is that some of the patients in the largest studies dealing with cholecystectomy (open and laparoscopic) in pregnancy might have had ovulation induction with IVF but that fact was not mentioned.

The case presented could imply that indications for emergency cholecystectomy should be the same as in non-pregnant and pregnant patients without ovulation induction therapy. The first question is should patients conceived with IVF receive prophylactic tocolysis in acute abdomen? Current recommendations (including *Society of American Gastrointestinal and Endoscopic Surgeons* 2011 revised recommendations) are that tocolysis should be limited to obstetrical indications (premature contractions) and not administered prophylactically. But these recommendations do not include or specify IVF-ET pregnancies. Another question is should thromboprophylaxis be selective in IVF patients with acute abdomen and what is an adequate dose. Special concern, as in our patient, was previous ovarian hyperstimulation syndrome with higher incidence of thromboembolic incidents.^[12] Our patient had lower leg pneumatic compression device prior to and during the operation without postoperative thromboprophylaxis.

References

1. Tal J, Haddad S, Gordon N, Timor-Tritsch I. Heterotopic pregnancy after ovulation induction and assisted reproductive technologies: A literature review from 1971 to 1993. *Fertil Steril* 1996;66:1-12.
2. Habana A, Dokras A, Giraldo JL, Jones EE. Cornual heterotopic pregnancy: Contemporary management options. *Am J Obstet Gynecol* 2000;182:1264-70.
3. Bennett SJ, Waterstone JJ, Cheng WC, Parsons J. Complications of transvaginal ultrasound-directed follicle aspiration: A review of 2670 consecutive procedures. *J Assist Reprod Genet* 1993;10:72-7.
4. European IVF-monitoring programme (EIM) for the European Society of Human Reproduction and Embryology (ESHRE), Andersen AN, Gianaroli L, Felberbaum R, de Mouzon J, Nygren KG. Assisted reproductive technology in Europe, 2002: Results generated from European registers by ESHRE. *Hum Reprod* 2006;21:1680-97.
5. Kihale P, Misumi J, Utsunomiya T. Peritonitis after a ruptured left pyosalpinx in a patient undergoing *in vitro* fertilization. *Fertil Steril* 2003;79:1034-6.
6. Matsunaga Y, Fukushima K, Nozaki M, Nakanami N, Kawano Y, Shigematsu T, et al. A case of pregnancy complicated by the development of a tubo-ovarian abscess following *in vitro* fertilization and embryo transfer. *Am J Perinatol* 2003;20:277-82.
7. den Boon J, Kimmel CE, Nagel HT, van Roosmalen J. Pelvic abscess in the second half of pregnancy after oocyte retrieval for *in-vitro* fertilization: Case report. *Hum Reprod* 1999;14:2402-3.
8. Biringir K, Zubor P, Visnovsky J, Danko J. Delayed delivery following unusual flare-up pelvic abscess after *in vitro* fertilization and embryo transfer. *Fertil Steril* 2009;91:1956.e5-7.
9. Barnett A, Chipchase J, Hewitt J. Simultaneous rupturing heterotopic pregnancy and acute appendicitis in an *in-vitro* fertilization twin pregnancy. *Hum Reprod* 1999;14:850-1.
10. Daponte A, Spyridakis M, Ioannou M, Vanakara P, Tzovaras G, Hatzitheofilou K, et al. Live birth after laparotomy for concurrent heterotopic pregnancy and appendicitis in a 6 weeks IVF pregnancy. *Arch Gynecol Obstet* 2007;275:397-9.

11. Akman MA, Katz E, Damewood MD, Ramzy AI, Garcia JE. Perforated appendicitis and ectopic pregnancy following *in-vitro* fertilization. Hum Reprod 1995;10:3325-6.
12. Chan WS. The 'ART' of thrombosis: A review of arterial and venous thrombosis in assisted reproductive technology. Curr Opin Obstet Gynecol 2009;21:207-18.

How to cite this article: Augustin G, Vrcic H, Zupancic B. Laparoscopic cholecystectomy due to acute calculouscholecystitis in 16 weeks' *in vitro* fertilization and embryo transfer pregnancy: Report of the first case. J Postgrad Med 2012;58:298-300.

Source of Support: Nil, **Conflict of Interest:** None declared.

New features on the journal's website

Optimized content for mobile and hand-held devices

HTML pages have been optimized of mobile and other hand-held devices (such as iPad, Kindle, iPod) for faster browsing speed.

Click on [**Mobile Full text**] from Table of Contents page.

This is simple HTML version for faster download on mobiles (if viewed on desktop, it will be automatically redirected to full HTML version)

E-Pub for hand-held devices

EPUB is an open e-book standard recommended by The International Digital Publishing Forum which is designed for reflowable content i.e. the text display can be optimized for a particular display device.


Click on [**EPub**] from Table of Contents page.

There are various e-Pub readers such as for Windows: Digital Editions, OS X: Calibre/Bookworm, iPhone/iPod Touch/iPad: Stanza, and Linux: Calibre/Bookworm.

E-Book for desktop

One can also see the entire issue as printed here in a 'flip book' version on desktops.

Links are available from Current Issue as well as Archives pages.

Click on  View as eBook