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Cesarean Delivery After Multiple Prior Intraperitoneal Surgeries: A Case Report in a Patient With Crohn Disease

Authors' Contribution:
Study Design A
Data Collection B
Statistical Analysis C
Data Interpretation D
Manuscript Preparation E
Literature Search F
Funds Collection G

ABEF 1 **Daniel Wolder** 
BCE 1 **Agata Michalska** 
DEF 2 **Jagoda Zakrzewska**
AB 2 **Jakub Kowalski**
AB 1 **Grzegorz Świercz** 
ACF 3,4 **Israel Hendler** 
ACF 5 **Luka Velemir** 

1 Collegium Medicum, Jan Kochanowski University in Kielce, Kielce, Poland
2 Clinic of Obstetrics and Gynecology, Provincial Combined Hospital in Kielce, Kielce, Poland
3 Department of Obstetrics and Gynecology, Nazareth Hospital EMMS, Nazareth, Israel
4 Azrieli Faculty of Medicine, Bar-Ilan University, Safed, Israel
5 Gynecology Institute of Nice – French Riviera, Nice, France

Corresponding Author: Jagoda Zakrzewska, Clinic of Obstetrics and Gynecology, Provincial Combined Hospital in Kielce, Grunwaldzka 45, 25-736 Kielce, Poland
Phone: +48 41 36 71 301, e-mail: jagoda.zakrzewska97@gmail.com
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Patient: Female, 25-year-old
Final Diagnosis: Pregnancy requiring cesarean delivery in a patient with multiple prior intraperitoneal surgeries
Symptoms: None – asymptomatic, uncomplicated pregnancy
Clinical Procedure: Extraperitoneal French Ambulatory Cesarean Section (FAUCS)
Specialty: Obstetrics and Gynecology

Objective: Rare coexistence of disease or pathology
Background: The mode of delivery in women with inflammatory bowel disease (IBD), including Crohn disease, requires individualized multidisciplinary assessment. Prior abdominal surgery increases the risk of intra-abdominal adhesions and operative complications. The extraperitoneal French Ambulatory Cesarean Section (FAUCS) technique may help avoid peritoneal entry in selected patients with complex surgical histories. This report describes the feasibility and short-term perioperative outcome of FAUCS in a patient with multiple prior intraperitoneal surgeries. Crohn disease is presented as a relevant comorbidity rather than the primary operative indication.

Case Report: We report the case of a 25-year-old woman with Crohn disease and a history of 5 prior intraperitoneal surgical procedures, including bilateral hemicolectomy, colostomy formation, appendectomy, and adhesiolysis. The pregnancy was achieved through in vitro fertilization and remained uncomplicated, with Crohn disease in sustained clinical remission. No preoperative imaging was performed; the likelihood of adhesions was inferred from multiple laparotomies and previous adhesiolysis. Due to anticipated extensive intra-abdominal adhesions, elective cesarean delivery using the extraperitoneal FAUCS technique was performed under an enhanced recovery after cesarean (ERAC) pathway. A healthy male neonate was delivered at 37 weeks of gestation, weighing 2550 g (Apgar score 10 at 5 minutes). Postoperative recovery was uncomplicated, with early oral intake, mobilization, minimal analgesic requirements, and no postoperative complications.

Conclusions: This case documents the feasibility and perioperative outcomes of extraperitoneal FAUCS in a rare scenario involving multiple prior intraperitoneal surgeries and Crohn disease in remission. It is intended to support clinician awareness and case-based learning rather than establish safety or efficacy claims.

Keywords: Cesarean Section • Crohn Disease • Inflammatory Bowel Diseases • Pregnancy, High-Risk • Surgical Procedures, Operative • Obstetrics • Postoperative Adhesions • Pregnancy • Case Reports

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Introduction

Inflammatory bowel diseases (IBD), including Crohn disease, frequently affect women of reproductive age and are commonly associated with repeated abdominal surgical interventions during the course of the disease. Patients often require bowel resections, stoma formation, adhesiolysis, or other abdominal procedures because of stricturing, penetrating, or refractory disease phenotypes [1,2]. Repeated intraperitoneal surgery is a well-recognized risk factor for postoperative intra-abdominal adhesions [3,4]. Adhesions may substantially increase the technical complexity of subsequent abdominal procedures and are associated with prolonged operative time, difficult surgical access, distorted anatomy, and increased risk of bowel or bladder injury during reoperation [3-5]. Recent evidence also suggests that severe intra-abdominal adhesions during cesarean delivery are associated with increased maternal operative morbidity and postoperative complications [6]. In women with Crohn disease, pregnancy management requires individualized multidisciplinary assessment. The mode of delivery should primarily be determined by obstetric indications, disease phenotype, and prior surgical history. In selected cases with anticipated extensive adhesions, avoidance of deliberate intraperitoneal entry may represent a potentially advantageous surgical strategy. For this reason, extraperitoneal cesarean techniques have regained interest as promising alternatives in selected patients at increased risk of adhesion-related operative complications.

Extraperitoneal cesarean section is not a novel surgical concept. The suprapubic extraperitoneal approach was originally described by Frank in 1907 and was subsequently refined by Latzko (1909), Küstner (1912), Waters (1940), and Norton (1946) [7-11]. In the pre-antibiotic era, the technique was widely used to minimize intraperitoneal contamination and postoperative infectious morbidity. The French Ambulatory Cesarean Section (FAUCS) technique represents a contemporary refinement of the extraperitoneal cesarean approach. The method was developed by the French obstetric surgeon Denis Fauck in the 1990s and was designed to minimize operative trauma while facilitating early postoperative recovery and rapid mobilization. The surgical technique and perioperative rationale were subsequently described in detail by Ami et al [12]. Contemporary studies evaluating extraperitoneal cesarean delivery have reported potential benefits including reduced postoperative pain, earlier bowel function recovery, and faster mobilization in selected patient populations [13,14]. However, evidence regarding the use of the FAUCS technique in patients with Crohn disease and extensive prior intraperitoneal surgery remains limited. The aim of this report is to describe the technical feasibility and short-term perioperative outcome of extraperitoneal cesarean delivery using the FAUCS technique in a carefully selected patient with Crohn disease and multiple prior intraperitoneal surgeries.

Case Report

A 25-year-old nulliparous woman with a 7-year history of Crohn disease was referred for obstetric care. Her surgical history included a left hemicolectomy, right hemicolectomy, colostomy formation, appendectomy, and prior surgical adhesiolysis. She also had chronic vulvar lymphedema. The pregnancy was achieved through in vitro fertilization. During gestation, Crohn disease remained in clinical remission, and prenatal follow-up was uneventful. The patient had been treated with infliximab, which was continued throughout pregnancy.

Given the patient's extensive surgical history and the high likelihood of intra-abdominal adhesions, an elective cesarean delivery using the FAUCS extraperitoneal technique was planned. Perioperative management followed an enhanced recovery after cesarean (ERAC) protocol consisting of spinal anesthesia, opioid-sparing analgesia, oral intake approximately 1 hour after surgery, and mobilization within 4 hours. No dedicated preoperative imaging was performed to assess intra-abdominal adhesions. Surgical planning was based on the patient's multiple previous laparotomies and documented prior surgical adhesiolysis, which indicated a high likelihood of clinically significant adhesions. Because the peritoneal cavity was intentionally not entered during the procedure, the actual extent of adhesions could not be directly assessed intraoperatively. The procedure was performed at 37 weeks of gestation under spinal anesthesia by a surgeon experienced in the FAUCS extraperitoneal technique. A low transverse skin incision was made (Figure 1), followed by a vertical incision of the anterior rectus sheath (Figure 2). The left rectus abdominis muscle was gently retracted laterally to expose the anterior bladder wall. The prevesical connective tissue was carefully dissected using curved scissors. The bladder was displaced to the right, allowing visualization of the lower uterine segment without entering the peritoneal cavity (Figure 3).

After development of the extraperitoneal space, a 1-cm transverse uterine incision was made and bluntly extended digitally. A male neonate was delivered using Teissier spatulas (Figures 4, 5). The newborn weighed 2550 g and measured 54 cm in length, with an Apgar score of 10 at 1 and 5 minutes. Umbilical cord blood gas analysis showed an arterial pH of 7.306 and a venous pH of 7.354. The uterus was closed using a purse-string suture (Figure 6), and the abdominal wall was closed in layers (Figures 7, 8). The total operative time was 30 minutes. No intraoperative complications occurred. Postoperative recovery was uncomplicated, and the planned ERAC milestones were achieved. No analgesics were needed on postoperative day 1. The postoperative course was uneventful, and both the mother and newborn were discharged in good condition on postoperative day 3.



Figure 1. Straight, transverse skin incision.

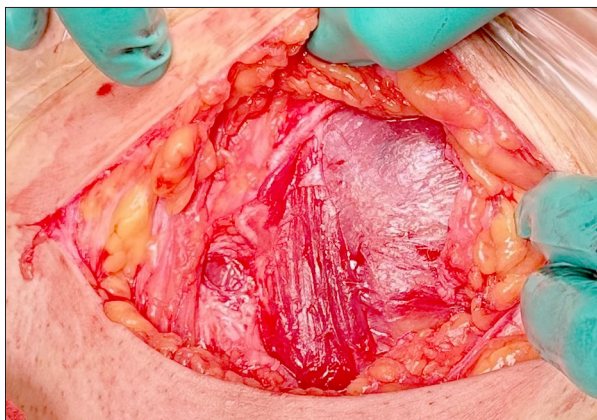


Figure 2. Transverse and vertical paramedian opening of the aponeurosis anterior sheath of the rectus abdominis.



Figure 4. Teissier spatulas.

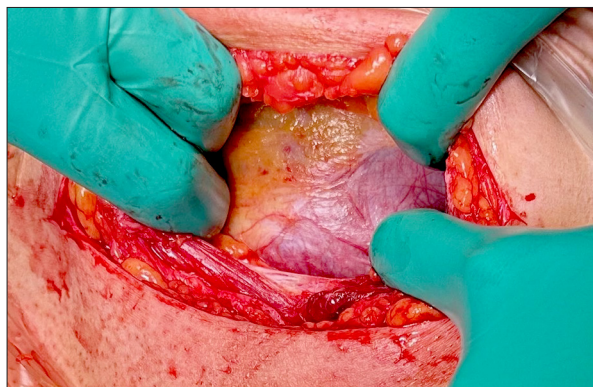


Figure 3. The extraperitoneal approach.



Figure 5. Fetal extraction.

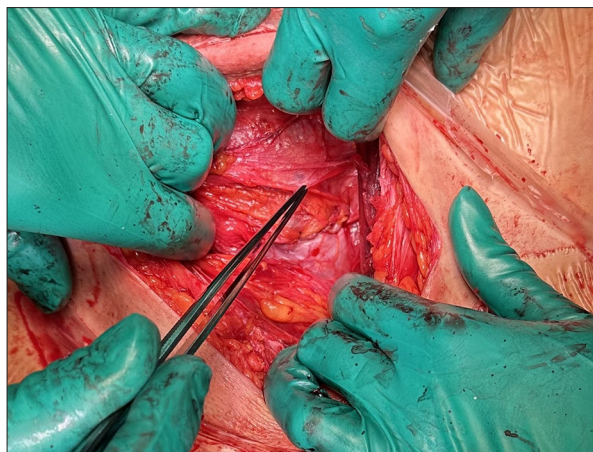


Figure 6. Post-hysterotomy purse closure aspect (intact peritoneum).



Figure 7. View of the abdomen before the French Ambulatory Cesarean Section (FAUCS).



Figure 8. View of the abdomen after the French Ambulatory Cesarean Section (FAUCS).

Discussion

The rationale for selecting the FAUCS technique in the present case was based primarily on the patient's extensive history of prior intraperitoneal surgery and the anticipated presence of adhesions rather than Crohn disease itself. The procedure was completed without intraoperative complications. However, because the peritoneal cavity was intentionally not entered, the actual extent of intra-abdominal adhesions could not be directly assessed. Several studies evaluating extraperitoneal cesarean delivery have reported favorable postoperative outcomes, including earlier mobilization, faster return of bowel function, and reduced postoperative pain, compared with conventional transperitoneal cesarean section [13,14]. Nevertheless, these findings should be interpreted cautiously in the context of the present case. The surgical techniques evaluated in those

studies differ from the FAUCS approach, which incorporates specific modifications of abdominal wall dissection, the use of Teissier spatulas for fetal extraction, and purse-string uterine closure [12]. In addition, FAUCS was specifically developed to facilitate rapid postoperative recovery and early maternal autonomy. Consequently, evidence derived from studies of conventional extraperitoneal cesarean delivery cannot be directly extrapolated to FAUCS. Postoperative recovery in the present case was uncomplicated, with early oral intake, mobilization within 4 hours, and minimal analgesic requirements. However, the contribution of the surgical technique itself cannot be separated from other factors known to facilitate recovery, including elective surgery, Crohn disease in remission, spinal anesthesia, and perioperative ERAC management. The present report should therefore be interpreted primarily as a feasibility observation illustrating the use of the FAUCS technique in a patient with multiple prior intraperitoneal surgeries. Its contribution is incremental, extending the existing literature to a clinical scenario that remains sparsely represented. Interpretation of this observation should remain limited to elective procedures performed in carefully selected patients with anticipated adhesion-related operative difficulty and by surgeons experienced in extraperitoneal cesarean techniques. Further studies are required to better define patient selection criteria and perioperative outcomes associated with contemporary FAUCS procedures.

Conclusions

This case documents the feasibility and perioperative outcomes of FAUCS in a rare clinical scenario involving multiple prior intraperitoneal surgeries and Crohn disease in remission. It is intended to support clinician awareness and case-based learning rather than establish safety or efficacy claims.

Department and Institution Where Work Was Done

Clinic of Obstetrics and Gynecology, Provincial Combined Hospital in Kielce, Kielce, Poland.

Patient Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images.

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

References:

1. Torres J, Chaparro M, Julsgaard M, et al. European Crohn's and colitis guidelines on sexuality, fertility, pregnancy, and lactation. *J Crohns Colitis*. 2023;17:1-27
2. Mahadevan U, Seow CH, Barnes EL, et al. Global consensus statement on the management of pregnancy in inflammatory bowel disease. *Inflamm Bowel Dis*. 2025;31:2615-64
3. Parker MC, Wilson MS, van Goor H, et al. Adhesions and colorectal surgery – Call for action. *Colorectal Dis*. 2007;9(Suppl. 2):66-72
4. ten Broek RPG, Issa Y, van Santbrink EJP, et al. Burden of adhesions in abdominal and pelvic surgery: Systematic review and meta-analysis. *BMJ*. 2013;347:f5588
5. Liakakos T, Thomakos N, Fine PM, et al. Peritoneal adhesions: Etiology, pathophysiology, and clinical significance. Recent advances in prevention and management. *Dig Surg*. 2001;18(4):260-73
6. Ram S, Shalev-Ram H, Alon S, et al. Impact of severe intra-abdominal adhesions on early maternal complications following cesarean delivery. *Int J Gynaecol Obstet*. 2025;170(1):417-22
7. Frank RT. Extraperitoneal cesarean section. *Surg Gynecol Obstet*. 1907;4:363-67
8. Latzko W. Zur Technik des extraperitonealen Kaiserschnittes. *Zentralbl Gynakol*. 1909;33:1181-85 [in German]
9. Küstner O. Der extraperitoneale Kaiserschnitt. *Zentralbl Gynakol*. 1912;36:1-7 [in German]
10. Waters EG. Extraperitoneal cesarean section. *Am J Obstet Gynecol*. 1940;39:423-31
11. Norton JF. Extraperitoneal cesarean section. *Obstet Gynecol*. 1946;52:417-25
12. Ami O, Fauck M, Simon B, et al. The French ambulatory cesarean section: Technique and interest. *Int J Gynecol Clin Pract*. 2017;4:1-6
13. Tappauf C, Schest E, Reif P, et al. Extraperitoneal versus transperitoneal cesarean section: A prospective randomized comparison of surgical morbidity. *Am J Obstet Gynecol*. 2013;209(4):338.e1-8
14. Yapca OE, Borekci B, Turan MI, et al. Extraperitoneal versus transperitoneal cesarean section: Comparison of postoperative outcomes. *J Obstet Gynaecol Res*. 2020;46:2245-52