



ORIGINAL RESEARCH PAPER

Obstetrics & Gynaecology

LAPAROSCOPIC SALPINGO-OOPHORECTOMY IN ADVANCED GESTATION FOR OVARIAN TORSION

KEY WORDS: Ovarian torsion, Pregnancy, Laparoscopy, Advanced gestation

Dr Nisha Gusain*

MS OBGY, Senior Resident, Department of Obstetrics and Gynaecology, Government Medical College, Miraj, Maharashtra, India *Corresponding Author

Dr Vikas Devkare

MS OBGY, Associate Professor, Department of Obstetrics and Gynaecology, Government Medical College, Miraj, Maharashtra, India

ABSTRACT

During pregnancy and in reproductive aged women, adnexal torsion is a common cause of severe pelvic pain. Adnexal torsion occurs when there is a complete turn of the ovary, tube, or both resulting in impaired blood flow to the ovary. The diagnosis of adnexal torsion is challenging due to the enlarged uterus, displacement of the abdominal and pelvic structures and the nonspecific symptoms in pregnancy. Prompt diagnosis is essential for better maternal and neonatal outcomes. Surgery (either laparoscopy or laparotomy) is the gold standard for diagnosis and treatment. Very few literatures exist on the laparoscopic approach of an ovarian torsion during the advanced gestation. Challenge is decision for trocar entry and port placement due to enlarged uterus. Our case is a 29 weeks pregnant patient who had 2 twisted turns of the left ovary and tube. She underwent laparoscopy for detorsion and had good intraoperative, postoperative maternal and neonatal outcome.

INTRODUCTION

Ovarian torsion is rare during pregnancy with incidence of only 1 in 5000 pregnancies. (1) It is rarest in advanced gestation. It is often challenging to diagnose the acute pelvic pain in pregnancy due to displacement of abdominal and pelvic structures by the enlarging gravid uterus, the nonspecific gastric symptoms and the difficult abdominal examination in pregnancy. (2,3) Differential diagnosis for acute pelvic pain is categorised as:

- (a) Surgical: urolithiasis, appendicitis, cholecystitis and intestinal obstruction.
- (b) Obstetrical: placental abruption and uterine rupture.
- (c) Gynaecological: ovarian torsion, pain resulting from adnexal masses and degeneration of uterine fibroid.

Advantage of laparoscopy is small incision, adequate visual field, less assistance, better healing of wound and less hospital stay. The problem related to laparoscopy in pregnant patients include a limited surgical field with a risk of uterine injury and negative fetal effects of carbon dioxide (CO₂) insufflation. Very few literatures reveal the ideal surgical laparoscopic approach of adnexa and specimen retrieval in late pregnancy. Difficulties faced by the surgeon in laparoscopy during late pregnancy can only be overcome by surgical experience, knowledge of approach in the field of laparoscopy.

Case Report

A 22-year-old primigravida (Gravida 1), spontaneous pregnancy, married for 2 years, 29 weeks gestation got admitted to the emergency room with pelvic pain since morning. The pain began 9 hours prior to the admission and was severe, intermittent, stabbing in nature and non-radiating. Patient denied feeling of any contractions, recent illness, fever, chills, night sweats, nausea or vomiting, suspicious food intake, or recent sick contact to rule out other causes for pelvic pain. She was vitally stable on admission. Examination revealed relaxed uterus with height around 28 weeks, bowel sounds ++, epigastric or right upper quadrant tenderness absent, bilateral costovertebral angle and Mc Burney's point tenderness absent, negative Murphy sign and closed cervical os. She had severe left lower quadrant tenderness. Pain didn't relieve on intravenous medications.

Investigations	Values
Hb - WBC - Platelet	12g% - 13000/mm ³ - 200000/mm ³
HIV - HBsAg	Negative - Negative
Blood Group	B-Positive

S. Creatinine - BUN (Blood urea nitrogen)	0.7mg/dl - 21mg/dl
S. Bilirubin Total - Indirect - Direct	0.9mg/dl - 0.5mg/dl - 0.4mg/dl

Pelvic ultrasound showed a hypoechoic, well defined, mildly heterogeneous lesion of 9.3 x 7.7 x 6.5cm (245cc) in left ovary with no vascularity, minimal fluid in the pelvis and fetal heart rate (FHR) was 150 beats per minute.



Figure 1: Exposed abdomen of patient for visualisation of trocar site postoperatively

Patient was taken for urgent laparoscopic detorsion under spinal anaesthesia in Trendelenburg position. Challenging was entry into the abdomen due to the enlarged uterus of 29 weeks gestation. A direct blunt 10mm trocar (number 1) was introduced at a point 2cm below the xiphisternum. The abdomen was insufflated using CO₂ (pressure 12 mmHg) followed by insertion of 5mm trocar (number 2) at the Palmer's point and another 5mm trocar (number 3) at the left lumbar region on the anterior axillary line according to surgeon's convenience (Figure 1).

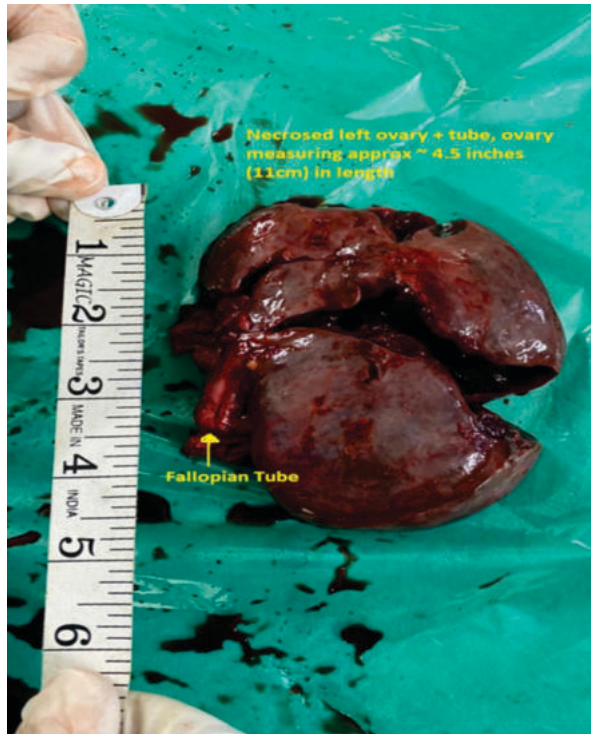


Figure 2: Necrosed specimen of left ovary and fallopian tube

Necrotic left ovary and tube (Figure 2) had 2 twists. After untwisting, there was absent re-perfusion of ovary and tube. Hence left salpingo-oophorectomy done. Right ovary and tube were normal. Due to less intraabdominal space, it was difficult to extract the specimen laparoscopically, hence a 7 cm vertical median incision was taken just below the umbilicus (Figure 1) and specimen was extracted. Procedure went uneventful for 43 minutes. Patient was under observation for 4 days with continuation of injectable progesterone, antibiotics (Ceftriaxone) and later was discharged. Patient followed up with no complaints. She presented in spontaneous labour at 39 weeks gestation and underwent normal vaginal delivery of a healthy baby girl (Weight 2.9 kg) and was discharged on 2nd day post-delivery.

DISCUSSION

Ovarian torsion is seen mostly in 1st trimester but can also happen in 2nd or 3rd trimester. (4) Clinically it presents as sudden onset, constant or intermittent acute lower abdominal pain with guarding, nausea and vomiting. As it is a surgical emergency, prompt diagnosis should be made to preserve ovarian function. (4) Clinically, presence or absence of arterial and venous blood flow on doppler can predict the nonviability of the ovary making it a viable prognostic tool. (5) Surgery is the gold standard for confirmation and treatment of ovarian torsion whether laparoscopy or laparotomy. (6) Initially, conservative surgical treatment (detorsion) is considered to preserve the residual ovarian function.

There are limited data available regarding the best surgical method for treating ovarian torsion in pregnancy. Maternal advantages in laparoscopy are small scar, less postoperative pain, shorter hospital stay, less operative blood loss and a decreased risk of preterm labour. (7) Fetal risk with laparoscopy is that it utilizes carbon dioxide (CO₂) for pneumoperitoneum, which can decrease the blood flow in the uterine arteries causing intrauterine hypoxia and increase in the CO₂ absorption by the fetus leading to fetal acidosis. Thus, performing laparoscopy with an intraperitoneal pressure of <12 mmHg and estimated time of < 30 minutes is considered safe in pregnancy. (8)

Laparoscopy during pregnancy is challenging and risky. (9) Firstly, positioning of the patient is an important factor. Placing the patient on her left lateral side with a 30° angle in Trendelenburg position would relieve the compression on the inferior vena cava and hence increase the cardiac output during surgery. It displaces the abdominal structures cephalad for better visualisation. Secondly, visualization of the surgical field may be compromised by enlarged uterus which could lead to trocar injury to the uterus. Direct trocar entry is extremely difficult but can be done depending on the surgeons skill and experience. Trocar sites should be limited to subxiphoid, left upper quadrant, or right upper quadrant access points. Operative trocars should be inserted on the pathologic organ side for comfortable surgery. (8) Manipulation of uterus should never be done by a transcervical device. Laparoscopy doesn't change the mode of delivery and has similar outcomes from laparotomy throughout all trimesters. (10) An experienced and skilled surgeon should undertake the laparoscopy with due consideration of the operative time, the intraperitoneal pressure, the positioning of the patient and the placement of the trocars to decrease risks and complications faced during advanced gestation. (10) In our case, enlarged uterus and large specimen size made it difficult to extract specimen through the laparoscopic port and hence median vertical incision was taken for specimen extraction to decrease the surgical time. Monitoring of FHR and uterine contractions is recommended to assess for early signs of preterm labour in postoperative period. Routine use of tocolytics to be avoided. Intraoperative pneumatic compression devices and early ambulation is advised to prevent any thromboembolic event during or after surgery.

CONCLUSION

Laparoscopic surgery for ovarian torsion is being considered safe and feasible during pregnancy of any gestation without increase in maternal or fetal complications. Decision of the site of trocar entry is important as no literature mentions the ideal trocar entry. In advanced trimester, placing a subxiphoid primary trocar allows sufficient distance between the uterus and the tip of the laparoscope for visualisation. Operative trocars should be inserted on the pathologic organ side for comfortable surgery. Direct blunt trocar entry is difficult and should be done by experienced surgeon. Small laparotomy incision was taken for easy specimen retrieval to maintain less operative time.

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