

# Ectopic Pregnancy after Hysterectomy: A Case Report of Ectopic Pregnancy 7 Years after Postpartum Hysterectomy

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## ABSTRACT

**BACKGROUND:** Ectopic pregnancy after hysterectomy is a rare event. There are 81 cases documented in the English medical literature since 1895.

**CASE REPORT:** 32y/o G2P1011, with baseline history of chronic pelvic pain after abdominal hysterectomy and unilateral salpingectomy, presented with acute pain. Patient was diagnosed with ectopic pregnancy and underwent an urgent laparoscopy.

**CONCLUSION:** Ectopic pregnancy should be part of the differential diagnosis for women of reproductive age, including woman post hysterectomy, who present with abdominal or pelvic pain or vaginal bleeding. Untimely diagnosis increases the risk for morbidity and mortality.

**KEYWORDS:** ectopic pregnancy, tubal pregnancy, hysterectomy, vaginal-peritoneal fistula

## INTRODUCTION

The differential diagnosis for abdominal or pelvic pain in a reproductive age woman after a hysterectomy would routinely include, but is not limited to, adhesive disease, bowel obstruction, appendicitis, diverticulitis, ovarian mass/torsion, hemorrhagic cyst, and cystitis. Ectopic pregnancy tends to be omitted. The presenting symptoms are nonspecific and may make early diagnosis a challenge. Most patients present initially with abdominal or pelvic pain with associated nausea and vomiting; on some occasions, patients have presented with dyspareunia, malaise, vaginal bleeding, mastalgia and loose stools.<sup>1</sup> Any woman of reproductive age with an ovary or bilateral ovaries should be considered at risk for ectopic pregnancy. A delay in diagnosis increases the patient's risk for morbidity and mortality.

## CASE PRESENTATION

We report a 32-year-old G2P1011 woman with a history of an abdominal hysterectomy, partial trachelectomy and right salpingectomy for postpartum hemorrhage after a vaginal delivery for a fetal demise, who presented to the emergency department with acute on chronic abdominal pain. The patient was seen initially at a routine annual gynecological

exam in which she complained of increased right-sided lower abdominal pain. She stated her pain resolved with rest and over the counter analgesia. At this visit, her vital signs and physical exam were unremarkable. Sixteen days after her routine visit, she presented to the emergency room via EMS with acute right lower quadrant pain after intercourse. Pain was associated with nausea and vomiting. Her vital signs were stable and physical exam was significant for cervical motion and bilateral adnexal tenderness.

Labs studies were as follows: WBC 9.8x10exp9/L, Neutrophils 83%, Hgb 12.1g/dl, Hct 35.2%, Platelet 219x10exp9/L, Urinalysis negative, GC/CT negative, Urine pregnancy test positive, and Bhcg 21,000mIU/mL. Ultrasound revealed a left adnexal ectopic pregnancy with crown rump length measuring 1.53 cm, consistent with 7w6d pregnancy and fetal heart rate of 165bpm. In addition, there was moderate amount of complex fluid in the cul de sac.

She was taken to the operating room and underwent a diagnostic laparoscopy, left salpingectomy, removal of ectopic pregnancy and evacuation of hemoperitoneum. Intraoperative findings included: omental adhesions to left anterior abdominal wall, the left fallopian tube and ovary moderately adhered to the anterior abdominal and left pelvic side wall, a distended left fallopian tube with ectopic pregnancy extruding from the fimbriated end and 100cc of dark blood in the cul de sac. Bilateral ovaries were normal in appearance. The procedure was uncomplicated, and patient was discharged the same day. Her post-operative course was unremarkable. Final pathology was consistent with tubal ectopic pregnancy.

## DISCUSSION

In 1895 Wendeler published the first case of an ectopic pregnancy after a hysterectomy.<sup>4</sup> Since the initial report there have been at least 81 published cases in the English medical literature (Table 1).<sup>1,4,6,7,8,9,10</sup>

Ectopic pregnancy after hysterectomy is categorized as early or late presentation. The designation is based on when the diagnosis of the ectopic pregnancy is made in relation to the timing of the hysterectomy. Early presentation ectopic pregnancy occurs when a woman conceives immediately prior to the hysterectomy. Patients usually present with ectopic pregnancy approximately 29 to 96 days post operative.<sup>2</sup> The diagnosis is confounded by the point of care urine

**Table 1.** Cases of post hysterectomy ectopic pregnancy

EARLY PRESENTATION	
Type of hysterectomy	Number of cases
Total vaginal hysterectomy (TVH)	15
Total abdominal hysterectomy (TAH)*	16
Laparoscopic assisted vaginal hysterectomy (LSCH)	2
Supracervical hysterectomy (SCH)**	1
LATE PRESENTATION	
Type of hysterectomy	Number of cases
Total vaginal hysterectomy (TVH) <sup>§</sup>	21
Total abdominal hysterectomy (TAH)	7
Total laparoscopic hysterectomy (TLH)	1
Laparoscopic assisted vaginal hysterectomy (LSCH)	1
Supracervical hysterectomy (SCH) <sup>§§</sup>	10
Cesarean hysterectomy (C-HYST)	7

\* TAH includes all cases listed as total abdominal hysterectomy and abdominal hysterectomy

\*\* SCH includes a case listed as laparoscopic supracervical hysterectomy

§ TVH includes all cases listed as vaginal hysterectomy and total vaginal hysterectomy

§§ SCH includes all cases listed as abdominal supracervical hysterectomy, laparoscopic supracervical hysterectomy, and supracervical hysterectomy

pregnancy test taken prior to the hysterectomy, as it may be negative due to the low levels of the hCG hormone. A positive urine pregnancy test occurs when the fertilized ovum has implanted, which typically occurs 6–12 days after ovulation.<sup>3</sup> With a negative hCG, the hysterectomy is performed, the fertilized ovum is entrapped in the fallopian tube or implanting in the ovary or abdomen; in following weeks to months, the ectopic pregnancy is then diagnosed.

Late presentation is diagnosed months to years after hysterectomy (range 7 months to 12 years).<sup>2</sup> This is the result of a fistulous tract in the vagina allowing communication of sperm and ovum. Fistulas may form due to inadvertent defects in vaginal vault closure, infection or formation of granulation tissue post-operative. Other causes include incorporation of fallopian tube-ovarian complex in the closure of the vaginal cuff, fallopian tube prolapse through the vaginal cuff, or a cervical stump that has not reperitonealized. The most common surgical modality of hysterectomy associated with late presentation is vaginal hysterectomy, followed by supracervical hysterectomy (combining scheduled cases and emergent postpartum hysterectomy).<sup>4</sup> Late presentation ectopic pregnancy is less likely to occur with other hysterectomy modalities because the vaginal cuff and the cervical stump closure incorporates the parietal peritoneum allowing reperitonealization; this ultimately keeps the vagina and the peritoneal cavity isolated.<sup>4</sup>

Risk-reducing practices should be implemented to decrease the incidence of ectopic pregnancy after hysterectomy.

Measures includes attention to proper surgical technique to decrease risk of vaginal cuff infection, hematoma, abscess, and dehiscence and closure of the proximal cervical stump to avoid communication between the vaginal and the peritoneal cavity. Performing bilateral salpingectomy at the time of hysterectomy will not protect against ovarian or abdominal ectopic pregnancy. Consideration should be made to perform total hysterectomy instead of supracervical, if clinically feasible or safe.<sup>4</sup> However, if supracervical hysterectomy has to be performed, it should be standard of care for peritonealization of the cervical stump.<sup>4</sup> Prior to surgery, surgeons should recommend that patient abstain or use reliable form of contraception. Ideally, if a patient is not using contraception, surgeons should try to avoid operating during the postovulatory luteal phase of the menstrual cycle.<sup>4</sup>

Once a post hysterectomy ectopic pregnancy is diagnosed, it is preferably treated surgically. Pharmacologic therapy with methotrexate can resolve the current pregnancy but does not allow implementation of corrective measures to prevent future ectopic pregnancies. There is one known case of a recurrent post hysterectomy ectopic pregnancy reported by McMillan and Dunn in 1921.<sup>5</sup> The case involved an 18-year-old who had an abdominal pregnancy after a subtotal hysterectomy 17 months prior. She underwent a laparotomy and removal of the fetus; then 18 months later patient had another abdominal pregnancy but died from hemorrhage.<sup>5</sup> For this reason, it is strongly recommended to manage post hysterectomy ectopic pregnancies with laparoscopy or laparotomy with removal of ectopic pregnancy and bilateral salpingectomy. After bilateral salpingectomy, there is still a residual risk, albeit a small risk, for recurrent ectopic pregnancy in the ovary or intraabdominal space. After the patient recovers from the removal of the ectopic pregnancy, it may be judicious to have the patient return for a fistulogram to assess and repair the vaginal vault defect.<sup>4</sup>

Any woman of reproductive age with or *sans* uterus should have ectopic pregnancy on their differential diagnosis. The consequence of a missed diagnosis can be catastrophic; therefore, a female presenting with abdominal pain or pelvic mass should have at least a point of care urine pregnancy test performed.

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### Acknowledgment

My sincere gratitude goes to Drs. Meera Simoes and Ghada Bourjeily for their encouragement and guidance while writing this case report. In addition, I would like to thank Drs. Christy Gandhi and Jennifer Ding for their assistance in the operating room.

### Disclaimer

The views expressed herein are solely those of the author and does not necessarily reflect the views of colleagues at Lifespan Physician Group, Rhode Island Hospital and Women & Infants Hospital.

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