Ruptured ectopic pregnancy after hysterectomy with copper intrauterine device in place: A case report

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Abstract

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Introduction: Ectopic pregnancy after hysterectomy is a rare event, with 72 cases being reported since 1895. Concomitant use of reliable contraception at the time of hysterectomy makes pregnancy extremely unlikely, but, as this case illustrates, does not completely rule out the possibility of post-hysterectomy ectopic pregnancy.

Case: A 30-year-old woman experienced a ruptured fallopian tube ectopic pregnancy four weeks after a laparoscopic-assisted vaginal hysterectomy and left salpingo-oophorectomy. At the time of her hysterectomy, a copper intrauterine device was in place.

Conclusion: Women with ovaries who present with abdominal or pelvic pain should be evaluated for pregnancy regardless of contraceptive use or history of hysterectomy.

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1. Introduction

Ectopic pregnancy accounts for 2% of all pregnancies and 53% of pregnancies that occur with an intrauterine device (IUD) in situ [1]. However, ectopic pregnancy after hysterectomy is rare. There are multiple published cases of ectopic pregnancy after hysterectomy, but to our knowledge none reports the presence of an IUD at the time of surgery. Here we present the case of a woman with a ruptured fallopian tube ectopic pregnancy four weeks after laparoscopic-assisted vaginal hysterectomy and left salpingo-oophorectomy with a copper IUD in place.

2. Case

A 30-year-old woman, gravida 2 para 1, presented to the emergency room reporting sudden-onset pain in the right lower quadrant. She had a history of one term cesarean delivery and a dilation and evacuation for a fetus with anencephaly. Her other medical history was significant only for asthma. Four weeks prior, the patient had undergone a laparoscopic-assisted vaginal hysterectomy and left salpingo-oophorectomy for a history of heavy menstrual bleeding and a left dermoid cyst. She had an open umbilical hernia repair at the same time. At the time of her hysterectomy, a copper IUD was in place and strings were noted at the cervical os in the operative report. The device was also mentioned in the pathology report, which noted secretory endometrium. Her preoperative urine pregnancy test was negative on the day of her hysterectomy.

The patient reported sharp pain in the right lower quadrant several hours prior to presentation as well as several soft bowel movements, chills, and pre-syncpe. Upon presentation to the emergency department, she reported diffuse abdominal pain. She denied vaginal bleeding or abnormal discharge, chest pain, palpitations, or shortness of breath. She had had a routine postoperative visit with her surgeon earlier that same week and reported intercourse two days prior without incident.

On presentation, her temperature was 36.6 degrees Celsius, blood pressure 99/55 mm Hg falling to a nadir of 69/50 mm Hg, respiratory rate 16 breaths per minute, and oxygen saturation 99% on room air. Initial labs revealed a white blood cell count of 22.5 × 10^9 per liter, hemoglobin 10.5 g per deciliter, hematocrit 32.9%, and platelets 388 × 10^3/uL. An electrocardiogram showed normal sinus rhythm. Quantitative beta-HCG was collected, but reporting of the result was delayed.

On physical exam, she was pale and in moderate distress with diffuse right-sided abdominal pain, rebound, and guarding. On speculum exam, her vaginal cuff was intact. Bimanual exam elicited peritoneal signs.

The patient had a positive focused assessment with sonography in trauma (FAST) scan, and a computed tomography (CT) scan revealed a 5.7 cm × 5.5 cm × 6.1 cm hematoma at the right adnexa obscuring the right ovary with moderate free fluid in the pelvis and abdomen, concerning for active extravasation.

The patient’s hemoglobin and hematocrit fell to 7.6 g per deciliter and 23.7%, and she was transfused one unit of packed red blood cells. She consented to emergency exploratory laparotomy and was taken to the operating room. Upon entry into the peritoneum, 2000 mL of blood was evacuated. The right fallopian tube and ovary were identified. There was a 2 cm clot in the tube next to a small defect, which was actively bleeding. A salpingectomy was performed, and hemostasis was
achieved. The surgery was, overall, uncomplicated. Following the case, the surgeons were alerted to the patient’s beta-HCG of 14,028 m-international units per milliliter. Surgical pathology later confirmed a ruptured ectopic pregnancy.

The patient did well postoperatively and received an additional 2 units of packed red blood cells and 1 unit of plasma. She was discharged home on postoperative day three.

3. Discussion

To our knowledge, this is the first reported case of an ectopic pregnancy after a hysterectomy with an IUD in situ. Ectopic pregnancies account for 2% of all pregnancies, but ectopic pregnancy after hysterectomy is much rarer. Fylstra completed a comprehensive review of 72 cases of ectopic pregnancy after hysterectomy between 1895 and 2015. This review included all routes of hysterectomy, two of which were laparoscopic-assisted vaginal hysterectomies. Thirty of these occurred within the immediate period after hysterectomy, as in our case, which indicates that the pregnancy or potential for pregnancy existed at the time of the hysterectomy [2].

Our patient had reliable contraception in place at the time of her surgery, which makes her case even more surprising and represents rare contraceptive failure. The copper IUD is a highly effective device which creates an inflammatory response in the uterus that activates lysosomes and is ultimately spermicidal [3]. Thus, sperm traversed the patient’s hostile uterine environment and was present in the fallopian tube prior to her hysterectomy. Pathology from her hysterectomy revealed secretory endometrium, so the patient must have been in the luteal phase of her cycle. A luteal phase pregnancy would not be evident by the urine pregnancy test she had immediately before her hysterectomy. Provenance and Peer Review

Keeping a broad differential when reproductive-aged women present with abdominal pain is critical to quick and accurate diagnosis. Reliable contraception is not 100% effective, and, as this and other case reports show, ectopic pregnancy is possible even after hysterectomy. Thus, pregnancy should always be considered, particularly because ectopic pregnancy poses risk for significant morbidity and mortality.

Contributors

Katie Pivarnik wrote the manuscript.
Humera Syeda edited the manuscript and obtained consent from the patient.
Katie Pivarnik and Humera Syeda were the sole contributors.

Conflict of Interest

The authors declare that they have no conflict of interest.

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Patient Consent

Consent for publishing this patient’s case was obtained following her surgery and again at her postoperative visit.

Provenance and Peer Review

This case report was peer reviewed.

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