

# Ectopic Pregnancy: 'Classic' vs Common Presentation

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*Ectopic pregnancies are common, are increasing in incidence, and are preventable causes of reproductive morbidity and death. They are also frequently misdiagnosed, and are one of the most common causes for malpractice claims made against primary care physicians. The classic description of the presenting signs and symptoms of ectopic pregnancy was derived from a series of ruptured ectopic pregnancies. To decrease the complications and preserve fertility, ectopic pregnancies must be detected before they cause tubal rupture.*

*A family medicine center experience with the diagnosis of ectopic pregnancy over a six-month period is presented. The study confirmed the expected frequency of this condition in this population but findings disclosed that the classic presentation was, in fact, uncommon. Implications for decision making derived from these case reports are discussed. A high level of clinical suspicion for this problem must be maintained.*

In the 11th century, Albucasis first described the diagnosis of ectopic pregnancy as a triad of aberrant menses, abdominal pain, and an adnexal mass. Recent papers and gynecologic textbooks repeatedly refer to the "classic triad" as the key to diagnosing ectopic pregnancy. Unfortunately, these criteria were developed retrospectively from hospitalized patients, the majority of whose ectopic pregnancies had caused tubal rupture prior to diagnosis. These criteria, then, represent more accurately the criteria of an ectopic pregnancy with rupture of the fallopian tube. The family physician, on the other hand, needs criteria to diagnose an ectopic pregnancy prior to tubal rupture.

A six-month study of ectopic pregnancies conducted at the Duke-Watts Family Medicine Center found that the classic symptoms of ectopic pregnancy occur uncommonly. Waiting for some (or all) of the triad of symptoms unnecessarily retards diagnosis and treatment. Seven case reports are presented that illustrate the way in which cases of ectopic pregnancy present in a family practice setting in contrast to the hospital setting.

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## CASE REPORTS

### Case 1

J.B., a 31-year-old woman with regular periods and a prior therapeutic abortion, was seen for irregular menses nine months after a CU-7 intrauterine device (IUD) was inserted. Her last true menstrual period was six weeks earlier. She bled again at four and two weeks before her office visit. She had no symptoms of pregnancy. Physical examination was unremarkable. Chart notes did not mention whether an IUD string was visible through the os. She was started on medroxyprogesterone with a presumptive diagnosis of an anovulatory cycle. She returned ten days later with continued bleeding but no additional symptoms. No IUD string was visible. Her uterus was slightly tender. The diagnosis of endometritis was made, and she was referred to a gynecologic consultant for removal of her IUD.

He removed the IUD under paracervical block and confirmed the diagnosis of endometritis. Two days later when she continued to bleed, another examination was performed. This time an adnexal mass was discovered on the left side. A serum pregnancy test was positive and a pelvic ultrasound demonstrated a left-sided adnexal cyst. The consultant diagnosed a spontaneous abortion but decided to perform a laparoscopic examination, which demonstrated a right-sided tubal pregnancy and a left-sided ovarian cyst (the ultrasound mass).

**Comment**

J.B. never experienced pain except during deep palpation on pelvic examinations. An aberrant menstrual pattern in a woman with previously normal cycles should prompt an early pregnancy test. The use of an intrauterine device, which is possibly linked to a higher incidence of ectopic pregnancy, should make examiners even more suspicious.

Studies vary on whether the IUD is a risk factor in the development of a tubal pregnancy.<sup>1</sup> Although, overall, an IUD user has less chance of an ectopic pregnancy than does a woman using no contraception, ectopic pregnancies do occur with a slightly increased frequency among IUD users than in women using other contraceptive methods. The mechanism of action of an IUD is interference with tubal function or implantation, but it does not affect ovulation. Therefore, if the pregnancy is going to be sustained, there is a greater chance in an IUD user of the pregnancy being in an ectopic rather than in an intrauterine location. The time of highest risk occurs when the woman has had an IUD in place for over two years or when the woman has just had an IUD removed.<sup>2</sup>

It is frequently the case, as J.B. also demonstrated, that the ectopic pregnancy is located on the side opposite the palpable mass. The palpable mass is commonly a corpus luteum cyst.

**Case 2**

M.H. is a 31-year-old woman who had a previous ectopic pregnancy followed by a left-sided salpingectomy in 1973. She was undergoing an infertility workup when she presented with increased urinary frequency and breast tenderness. She was not examined, but a serum pregnancy test was positive. Two weeks later she developed sharp, persistent lower abdominal pain. She went to the emergency room; her blood pressure was 120/70 mmHg and her pulse was 110 beats per minute without orthostatic changes. She had bilateral lower quadrant tenderness without masses or rebound tenderness. Her pain disappeared while in the emergency room, and her discharge was planned. While waiting for the attending physician to corroborate her physical examination, her condition deteriorated. Her vital signs remained stable, but she complained again of pain, this time more severe in the lower quadrant on the left side. A repeat pelvic examination demonstrated tenderness to cervical motion and extreme tenderness in the adnexa on the left side. Results of culdocentesis were abnormal in that blood was aspirated. An exploratory laparotomy demonstrated a ruptured right-sided uterine cornu, an expelled gestational sac, and 1,000 mL of fresh blood in the peritoneal cavity.

**Comment**

M.H. never had vaginal bleeding or a palpable mass. Her pain was not classic (severe and unilateral) but diffuse and

not perceived as impressive. The pain initially improved (probably with rupture of the uterine tube). With a liter of blood in her peritoneum, she looked remarkably comfortable and did not display postural hypotension. The only clue was her modest tachycardia, which was attributed to anxiety and discomfort.

A woman with a prior history of an ectopic pregnancy has a 10 to 20 percent<sup>3,4</sup> risk of a recurrence. A woman with a prior ectopic history should be carefully examined at the time of diagnosis of subsequent pregnancies. In M.H.'s case the disparity between her menstrual dates (75 days) and her relatively normal-sized uterus could have prompted the physician to consider the diagnosis of an ectopic pregnancy.

Over 50 percent of women have been seen in an emergency room or office within a few days prior to a tubal rupture from an ectopic pregnancy.<sup>5</sup> An early ultrasound examination to localize the pregnancy after its laboratory diagnosis should be considered for the woman with a previous ectopic pregnancy.

**Case 3**

J.H. is a 25-year-old woman who had a live birth delivered by cesarean section and a previous early second trimester spontaneous abortion. She had had pelvic inflammatory disease and gonorrhea in the past for which she had been successfully treated. In October 1983 she was begun on a combination norethindrone-estradiol oral contraceptive (Ortho-Novum 1/35-28) and experienced normal periods in November and December. Because she desired another pregnancy, she stopped her pills on her own at the end of December. She had a three-day period in early January. She bled again January 25 through 27. She had no period in February. On March 1 through 3 she bled again and spotted the morning of March 7. That day, she presented to her physician complaining of menstrual irregularity and three days of left-sided low back pain that worsened with urination. Her examination was remarkable only for blood in the vaginal vault. The cervix and uterus were mildly tender to palpation. The adnexa on the left side was slightly tender but had no mass. A gonorrhea culture was negative. She was diagnosed as having pelvic inflammatory disease and given ampicillin and probenecid. A serum pregnancy test was positive. The next day she had more impressive unilateral tenderness. At that time she had an ultrasound examination, which showed mild bilateral ovarian enlargement. A laparoscopic examination revealed a right-sided ampullary ectopic pregnancy, which was able to be milked from the fallopian tube, thus maintaining tubal integrity.

**Comment**

The chart indicates that the pregnancy test was obtained because the examining physician wished to start the pa-

tient on doxycycline (which he would have avoided if she were pregnant). This test was fortuitous. Until the patient developed impressive unilateral pain, the diagnosis of an ectopic pregnancy was not considered.

An aberrant menstrual history in a patient with a prior history of pelvic inflammatory disease is sufficiently suggestive to warrant investigation of an ectopic pregnancy. Women with this history have a seven times greater risk of an ectopic pregnancy than women with no known salpingitis.<sup>6</sup>

**Case 4**

T.R. is a 25-year-old woman who had no prior pregnancies. She complained of bilateral breast tenderness and enlargement. Her last normal period was six to seven weeks prior to her office visit and lasted three days. She bled again three weeks later with spotting for two days, slightly heavier bleeding for two more days, and then spotting for an additional two days. She had no further bleeding or vaginal discharge. She was sexually active without contraception. She had mild nausea but no vomiting. Her uterus was soft and enlarged to a six- to eight-week size. A urine pregnancy test was positive, and she was scheduled to return in two weeks. Instead, she returned four days later complaining of spotting and cramping. The uterus was enlarged and flexed somewhat to the left. The patient was instructed in bed rest and her condition was diagnosed as a threatened abortion. She returned two days later with pain on the left side in addition to continued bleeding. At this point the uterine deviation seemed distinct from a left-sided adnexal mass. An ultrasound examination demonstrated the mass, and during laparotomy examination a left-sided ectopic pregnancy was diagnosed.

**Comment**

Initially this woman had no pain or mass present. The physician needs to maintain a high level of suspicion with first trimester bleeding to differentiate between a threatened abortion and a tubal pregnancy.

**Case 5**

D.S. is a 24-year-old woman who had a bilateral tubal ligation three years ago after the birth of her second child. She complained of pain in the lower abdomen on the right side, which awakened her from sleep. She was due to have her menstrual period. She also had dysuria, nausea, anorexia, and constipation. Her temperature was 99.6 °F, and she was tender in the lower quadrant on the right side with mild rebound tenderness. She had tenderness on rectal examination as well as cervical tenderness. Her urinalysis was negative. Her white cell count was  $11.2 \times 10^3/\text{mL}$  with 90 percent polymorphonuclear lympho-

cytes. Because her urine pregnancy test was negative, she was referred to a surgeon, who admitted her for 24 hours' observation for acute appendicitis.

Her pain resolved, and she was discharged. Ten days later, she called with similar pain, but no gastrointestinal symptoms. The next day she was seen, now experiencing vaginal spotting and severe cramping. Her temperature was 99.2 °F and her abdomen was soft. Again she had right-sided lower quadrant tenderness, but this time there was dark blood in the vaginal vault. She had a 4-cm mass palpable in the adnexal area on the right side. Her serum pregnancy test was positive, and laparotomy examination confirmed a right-sided tubal pregnancy.

**Comment**

Not even the history of a prior bilateral tubal ligation can exclude the diagnosis of ectopic pregnancy. In one series of reported ectopic pregnancies, 9 percent of them occurred in women with a prior bilateral tubal ligation.<sup>7</sup> The occurrence of ectopic pregnancy may be even more likely in a woman with a postpartum tubal ligation.

**Case 6**

J.S. is a 37-year-old woman who had one prior ectopic pregnancy and two subsequent live births. She had a right-sided salpingectomy after her ectopic pregnancy. She was sexually active and used no contraception. Her last period was two months before her office visit, and  $3\frac{1}{2}$  weeks prior to her office visit she had brownish discharge for one day, then pinkish discharge for two days.

On examination, she had left adnexal tenderness. A urine pregnancy test was negative. The assessment was pelvic inflammatory disease, and she was given amoxicillin and doxycycline. Four days later she complained of intermittent spotting and persistent pain that worsened with intercourse. On examination, she had left-sided lower quadrant tenderness, and a 4-cm mass was palpated. A serum pregnancy test was positive. An ultrasound confirmed the presence of a mass, which at laparoscopy was a left-sided tubal pregnancy.

**Comment**

This woman had a risk factor with her prior ectopic pregnancy. When a pregnancy (especially an early or ectopic one) is considered, a more sensitive pregnancy test, such as the beta subunit serum human chorionic gonadotropin,<sup>8</sup> should be chosen over less sensitive urine tests.

**Case 7**

B.J. is a 30-year-old woman with one prior live birth and one therapeutic abortion who presented seven weeks after the therapeutic abortion, complaining of abdominal pain.

She had a "period" one month following the abortion. Two weeks later she bled again, this time with right-sided lower abdominal pain. She had no fever, vaginal discharge, or genitourinary symptoms. She had been using contraceptive sponges with intercourse since her abortion.

On examination, her uterus had increased in size from eight to nine weeks' gestational size. She also had an adnexal mass.

The pathology report from the abortion confirmed a 20-g specimen containing chorionic villi. Her urinary pregnancy test was negative. Because of the increased uterine size, a serum beta subunit human chorionic gonadotropin was performed, the results of which were positive. She underwent a laparoscopic examination, which revealed a right-sided cornual ectopic pregnancy as well as pelvic inflammatory disease.

### Comment

This woman had concurrent ectopic and intrauterine pregnancies. Her uterine pregnancy had been aborted leaving only the ectopic pregnancy, which became symptomatic approximately one month later.

The history of a recent abortion does not preclude an ectopic pregnancy. The pathology of the abortion specimen must be carefully checked to ensure that it contains products of conception. If they are absent from the specimen, an ectopic location of the pregnancy needs to be considered.

B.J. represents the far rarer, but still possible, case of concurrent ectopic and intrauterine pregnancies.

### DISCUSSION

Ectopic pregnancies are common, averaging one in 95 births,<sup>9</sup> or one in every 2,500 susceptible women each year. Furthermore, their incidence is increasing, and with 50,000 reported yearly, ectopic pregnancies are diagnosed at 2½ times the rate of 20 years ago.

Ectopic pregnancies account for 5 percent of all reproductive deaths.<sup>10</sup> There is a 50 percent infertility rate for women in whom one occurs.<sup>11</sup> When a normal pregnancy does occur in a woman who has had a previous ectopic pregnancy, the chance of delivering a live-born infant is lessened. These complications can be reduced only through earlier diagnosis with its opportunity for more conservative surgical management.

The Duke-Watts Family Medicine Center is responsible for about 25,000 patient visits yearly, two thirds involving female patients. In the last year 140 women were followed for prenatal care and delivery. In the six months of this study seven women were treated for ectopic pregnancy.

Previously reported large studies of presenting complaints have been derived from patients in whom the ectopic pregnancy has already caused rupture of the fallo-

pian tubes. Virtually all of these patients had severe abdominal pain and adnexal tenderness. Over one half had an adnexal mass.

The series reported here is small, but these cases are interesting because they highlight the way women present with a tubal pregnancy that has not yet ruptured the fallopian tubes. None of these women presented with the classic triad of symptoms.

Four of seven patients had risk factors for ectopic pregnancy. Five women had an aberrant menstrual pattern. Curiously, the only woman who did not have vaginal bleeding was the one whose tube had ruptured! None of these women had an adnexal mass when seen initially. The only woman with classic pain was the woman whose tubal pregnancy had ruptured the fallopian tube. In four cases there was reluctance to consider the diagnosis, a fact that led to delay. In two cases in which the diagnosis was considered, a less sensitive pregnancy test—the urine test—was ordered.

Surgically, one tube was preserved intact with the ectopic pregnancy able to be milked successfully from it. Two others had conservative operative procedures performed, which, it is hoped, optimized their future fertility.

### RECOMMENDATIONS

Knowledge of risk factors such as prior ectopic pregnancies or pelvic inflammatory disease should prompt a more comprehensive evaluation of pelvic complaints. If pregnancy is diagnosed, its location needs to be ascertained by ultrasound examination for women with these risk factors.

Use of contraception, especially the intrauterine device, or even a tubal ligation does not rule out the possibility of an ectopic pregnancy. A pregnancy under these conditions, if it has occurred, may be even more likely to be an ectopic one.

The physician must insist on pathologic examination of all abortions—spontaneous or therapeutic. If no products of conception are found, exclusion of an ectopic pregnancy is necessary. Because at the time an ectopic pregnancy is diagnosed, these pregnancies may be early or the amount of human chorionic gonadotropin secreted small, a highly sensitive test, such as the serum beta subunit human chorionic gonadotropin, is preferred over less sensitive urine pregnancy tests. It may be useful to follow a change in the quantitative titer of the serum human chorionic gonadotropin, especially in the early weeks before an ultrasound examination is able to demonstrate a gestational sac, thereby visually locating the pregnancy.

The physician needs to keep in mind that rare occurrences, such as ectopic pregnancy after tubal ligation, or concurrent ectopic and intrauterine pregnancies, do occur.

Finally, there should be prompt referral to allow for

conservative tubal surgery in cases of ectopic pregnancies discovered prior to rupture.

The family physician needs to maintain a high level of suspicion for the diagnosis of ectopic pregnancy in any woman in the reproductive age group who presents with aberrant vaginal bleeding or pelvic pain. Only in this way can the rupture of these tubal pregnancies be prevented and more conservative management options selected to decrease mortality and maintain future fertility.

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