Case Report

Asymptomatic 12 Weeks Viable Tubal Ectopic Pregnancy: Case Report

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1. Introduction

Ectopic Pregnancy (EP), defined as implantation of the blastocyte outside the endometrial cavity, is prevalent in 2% of pregnancies [1]. Abdominal bleeding from ruptured EP is the leading cause of maternal death in the first trimester, accounts for 6% of all maternal deaths [2]. Major risk factors include a history of tubal surgery, former pelvic inflammatory disease, assisted reproductive technology and previous ectopic pregnancy [1]. The most common location of EP is in the fallopian tubes (96%), with the ampullary part accounting for 80% of these, followed by the isthmus, fimbria and interstitial part of the tube. Other rare sites (<1%) of implantation include the ovaries, cervix, caesarian-section scar, abdominal and peritoneal cavity [2].

Presenting symptoms are amenorrhea, lower quadrant abdominal pain, and vaginal bleeding. However, nearly half the women are asymptomatic at early gestation [2].

Rupture of tubal EP depends on its location, size, gestational age and the presence of a viable fetus. Most tubal EPs rupture by 10 weeks of gestation [3]. Transvaginal Sonography (TVS) is the gold standard in the diagnosis of EP. However, it may not be reliable in identifying the location of gestation [3]. We present an extremely rare case of asymptomatic 12 weeks live ectopic pregnancy in the fallopian tube.

2. Keywords: Advanced ectopic pregnancy; Tubal pregnancy; Asymptomatic; Laparoscopic surgery; Transvaginal ultrasound

3. Abbreviations: EP: Ectopic Pregnancy; ER: Emergency Room; MRI: Magnetic Resonance Imaging; TVS: Transvaginal Sonography

4. Case Report

A 36-year-old pregnant woman, gravida 5, para 3 was referred to our Emergency Room (ER) because of suspected EP found during routine ultrasound nuchal translucency examination in the outpatient clinic at 12+2 weeks of gestation. She had had three normal vaginal deliveries at full term, and one tubal ectopic pregnancy treated conservatively with methotrexate. A year before, she was hospitalized due to a bilateral tubo-ovarian abscess, which was treated with antibiotics. Her last menstrual period was 12 weeks before presenting at the ER. Transabdominal ultrasound scan at 7 weeks' gestation documented an intrauterine viable pregnancy. Relevant physical examination revealed an asymptomatic hemodynamically stable patient. Per speculum examination, she had normal cervix with no active bleeding. Careful bimanual examination revealed mild cervical motion tenderness with a large tender mass filling the pouch of Douglas.

On TVS, uterine cavity was empty with thin regular endometrium. Ovaries were normal. Posteriorly to the uterus, there was a gestational sac with live moving fetus and normal volume of amniotic fluid. Fetal crown-rump length measurement suited gestational age of 12+3 weeks. No surrounding tissue was demonstrated

around the gestational sac that was adjacent to the right ovary, with no connecting large blood vessels. Both fallopian tubes visualized with normal appearance. There was minimal amount of free fluid in the pouch of Douglas. The total largest diameter of the pregnancy was 9.6 cm. A differential diagnosis of abdominal pregnancy was suggested. Laboratory tests revealed mildly elevated white blood cell count 11.42 k/micl, hemoglobin of 12.3 gr/dL and normal platelet count 173 K/micl. Coagulation profile, liver function and renal chemistry were within normal range.

An exploratory laparoscopy was performed. A very large non-ruptured tubal pregnancy was observed in the distal ampullary region of a very long right fallopian tube (Figure 1A). Right salpingectomy was performed. Left fallopian tube and ovary were normal. Pathology examination of the specimen demonstrated a fallopian tube with an ectopic product of conception, with a fetus consistent with 12 weeks' gestation. Postoperative course was uneventful.

5. Discussion

We report a rare case of non-ruptured tubal pregnancy at 12+3 weeks' gestation, mimicking abdominal pregnancy on ultrasound, in an asymptomatic patient who attended the ER after nuchal translucently ultrasound examination.

Tubal pregnancies beyond 10 weeks of gestation are rare, since symptoms such as abdominal pain and vaginal bleeding usually appear as early as 6 weeks' gestational age, and rupture typically occurs during the first trimester between 5 to 9 weeks' gestation. It is not clear why certain pregnancies do manage to reach an advanced stage, while others rupture early. Several cases of ectopic abdominal, ovarian and cornual pregnancies at second and even third trimesters have been published, yet there is only limited number of cases describing tubal pregnancies beyond 10 weeks' gestation in the literature. Liu et al. [4] described a tubal pregnancy of 14 weeks' gestation mimicking abdominal pregnancy on ultrasound, similar to our case. They detected the location of the pregnancy on Magnetic Resonance Imaging (MRI) scan and performed embolization via angiography preoperatively. As in our case, Stremick et al. [5] reported a case of tubal pregnancy at 15 weeks' gestation presenting with tubal rupture that was initially misdiagnosed as intra-uterine pregnancy in first-trimester ultrasound. The most reasonable reason for such rare diagnostic inaccuracy is human error.

Early diagnosis allows for conservative treatment with methotrexate [2] which is contraindicated in the cases of impending rupture, requiring urgent surgical treatment. Had the ectopic pregnancy in our case been diagnosed during an earlier scan at 7 weeks' gestation, surgery could have been avoided. TVS is the common practice for diagnosing an ectopic pregnancy. Nevertheless, identifying the site of pregnancy might be a challenge. The sensitivity of initial TVS in the diagnosis of EP is 73.9% with a specificity of 99.9%. Initial sonographic assays fail to diagnose 26% of woman in whom ectopic pregnancy is suspected [3]. Moreover, specific signs for tubal pregnancy in the first trimester such as "tubal ring" are not as reliable in advanced ectopic pregnancies [4].

Adhesions in the abdominal cavity [4], hemoperitoneum, as well as human error [5] were all described as reasons for misdiagnosing the location of advanced tubal EP to an intrauterine or abdominal pregnancy. In our case, rapid fetal growth led to tubal wall thinning and stretching, making it difficult to recognize, and adhesions caused by previous pelvic inflammatory disease deviated the position of the right fallopian tube and led to a sonographic appearance of a gestational sac behind the uterus, mimicking an abdominal pregnancy. Revision of our sonographic images showed agreement with the sonographic signs of advanced tubal pregnancy (rounded well-defined gestational sac, crescent-shaped placenta) suggested by Liu et al. [4] (Figure 1B).

Figure 1A: Laparoscopic view of the ectopic product of conception.

Figure 1B: Sonographic abdominal transverse view of an ectopic pregnancy, with "crescent-shaped" placenta, adjacent to empty uterine cavity.

It is possible that MRI would have identified the pregnancy site, yet in the case of an emergency MRI is best avoided [4]. In our case, since an intrauterine pregnancy was denied, we decided to proceed with exploratory laparoscopic surgery. Few cases reporting advanced ectopic pregnancies have been described in the literature, however, to the best of our knowledge, this is the first case to describe a non-ruptured tubal pregnancy misdiagnosed as intra-uterine viable pregnancy in the first trimester, mimicking an abdominal pregnancy in late second trimester in a hemodynamically stable woman. The diagnosis of EP is a clinical challenge, as risk factors and symptoms alone are not enough to reliably expect an EP, and while TVS can diagnose the location of an EP in only 73.9% [3] it is still considered the most accurate modality for diagnosis of EP [1], yet there are no guidelines for obligatory TVS for women with risk factors for EP and it remains a clinical decision of the attending physician. As evident from our case, a transvaginal sonography could have led to an earlier diagnosis of EP in our patient. We therefore suggest that a transvaginal ultrasound complemented by an abdominal scan if needed, should be mandatory for high risk EP patients as in the case of our patient with a previous history of ectopic pregnancy. Patient-education regarding possible signs and symptoms of ectopic pregnancy is also important in order to reduce maternal morbidity and mortality.

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