

Case Report

Angular pregnancy turning out an intrauterine pregnancy: Expectant management of eccentric fundal pregnancies

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Abstract

Ectopic pregnancy accounts for 1-2% of the pregnancies and affects fertility, morbidity and mortality of women in reproductive age. It is responsible for 6% of deaths related to pregnancies. Differential diagnosis of fundal region originated pregnancies is vital and cornual, angular and interstitial types of pregnancy should be considered. Treatment options vary with respect to the diagnosis and clinical evaluation of the patient which are: expectant management, medical treatment or surgical treatment. It should be emphasized that, expectant management is an option which should be considered especially in angular pregnancies that cover special requirements.

Key Words:

Angular pregnancy, cornual pregnancy, interstitial pregnancy

Introduction

Ectopic pregnancy accounts for 1-2% of the pregnancies and affects fertility, morbidity and mortality of women in reproductive age. It is responsible for 6% of deaths related to pregnancies [1,2]. Eccentric located pregnancies near fundal region of uterus may cause uterine or tubal rupture. Therefore, the site of the pregnancy should be determined accurately to determine the best management. The three various diagnoses exist as differential diagnosis; angular pregnancy, cornual pregnancy and interstitial pregnancy [3]. Differential diagnosis is done by considering out

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any uterine anomaly presence, the distance between gestational sac and the most lateral part of the uterine cavity close to the sac and finally the myometrial thickness surrounding gestational sac. This can be achieved by 2-dimensional ultrasonography and where inadequate 3-dimensional ultrasonography or magnetic resonance graphy is useful [4]. Management is done expectantly, medical or surgical [5]. In this case report, a women having an angular pregnancy and managed expectantly is discussed while differential diagnosis and management options of fundal region sited eccentric pregnancies are covered.

Case Presentation

A 21-year-old woman, having her first pregnancy of 6 weeks with respect to last menstrual date, with no known morbidities applied to hospital with inguinal pain. Physical examination findings were bilateral lower quadrant tenderness without defence and rebound. Vital signs were

completely normal (Body temperature: 36,8°C; Blood pressure: 110/70 mmHg and Pulse: 72 beats/min). Vaginal examination findings were normal and there was no cervical tenderness but there was tenderness of left adnexial area during bimanual vaginal examination. Patient's former serum β -hCG was 1790 mIU/ml (1 week before admission) and her current serum β -hCG upon admission to the hospital was 31054 mIU/ml. Haemoglobin and haematocrit levels were measured as 12,8 g/dl and 39,4% respectively.

Figure 1.



Angular pregnancy visualized by two dimension (2D) ultrasonography.

Two-dimensional ultrasonography result was as follows: uterus is antevert, uterine cavity contains no gestational sac, endometrium is 15 mm of thickness. On the right lateral fundal area a gestational sac containing fetal cardiac activity fetus of 2,5 mm in crown-rump-length size was observed. The patient was hospitalized in infertility unit of the hospital. The next day, 3D-ultrasonography was performed and no uterine abnormality was observed. Therefore, cornual pregnancy was concerned to be an invalid diagnosis for this patient. Gestational sac was surrounded by 10 mm of myometrial layer and the distance between sac and the endometrial cavity was 7 mm. Thus, a diagnosis of angular pregnancy was established. On the second day of hospitalization serum

β -hCG was 36208 mIU/ml, and the ultrasonography images has demonstrated that the gestational sac was located in the endometrial cavity, containing an embryo with a crown-rump-length of 3 mm and positive cardiac activity. During follow-up, physical examination signs have improved as the inguinal pain and bilateral lower quadrant tenderness were diminished. Therefore, as the intrauterine location of her pregnancy has been verified by ultrasonography and the patient was discharged from the hospital by recommendation to have intense follow-up examination antenatally.

Discussion

Tornual, interstitial and angular pregnancy terms can be misused and differential diagnosis among them is usually complex. At the same time, defining the right diagnosis is very important as the management of the patient varies according to the diagnosis and it can be fatal. Cornual pregnancy is the situation in which, there is an uterine anomaly such as unicornuate, bicornuate, septate uterus with a rudimentary horn; whether congenital or acquired and the gestational sac is located medially to the fallopian tube including the anomalous part [6]. Interstitial pregnancy is diagnosed when the gestational sac is located in the intramural or interstitial part of the fallopian tube which is 0,7 mm wide and 1-2 cm in length and covered by a thin myometrium. These kind of pregnancies can survive 12-16 weeks without any symptoms of uterine rupture [7]. Timor-Tritsch et al. defined three ultrasonographic criteria for interstitial pregnancy diagnosis: 1) an empty uterine cavity 2) the distance between gestational sac and the most lateral part of the endometrial cavity should be more than 1 cm long 3) the myometrial layer thickness surrounding the sac should not exceed 5 mm in width. It should be recognized that fibroids, contractions and anomalies of the uterus may alter the measurements and can be misleading [8]. Ackerman et al. contributed interstitial line sign to these three criteria. Interstitial line sign has a sensitivity of 80% and specificity of 98% in diagnosing interstitial pregnancy. In ultrasonographic examination, if an echogenic line that connects gestational sac and endometrium is observed it is called interstitial line sign [9]. If gestational sac is located in the intramural part of the fallopian tube and medially to the uterotubal junction it is called angular pregnancy. It can be interpreted as a variant of interstitial pregnancy. The difference between two pregnancies is interstitial pregnancy is located laterally to the

round ligament and angular is located medially. As interstitial pregnancy sac is covered by a thin myometrial layer of at most 5 mm, it has high risk of rupture. On the other hand, angular pregnancy sac is covered by a thicker layer of myometrium (at least 5 mm of thickness), as it is on the uterotubal junction, it can progress to an intrauterine pregnancy. However, it has a high risk of rupture and the patient should be examined frequently during antenatal follow-up [6].

Figure 2.



The same patient's pregnancy was visualized by three dimension (3D) ultrasonography 2 days later, the gestational sac was detected in the endometrial cavity.

Two-dimensional ultrasonography is first line method to recognize eccentric pregnancies. If there is an uterine anomaly, cornual pregnancy diagnosis should be considered. Otherwise, differential diagnosis is done among angular and interstitial pregnancies by means of three criteria and the interstitial line sign as the round ligament is not easily visualized via ultrasonography. There are alternative methods if data cannot be obtained by 2D-ultrasonography. Three-dimensional (3D) ultrasonography or magnetic resonance imaging can be utilized. Three-dimensional ultrasonography may be the first choice as it is more cost-effective than magnetic resonance imaging [4]. Intramural part of the fallopian tube is rich by means of vascularization and muscular component with respect to other sections of the tube. Because of this, interstitial pregnancy signs are lately onset and rupture is generally seen in 12-16 weeks of pregnancy, leading to massive intraabdominal bleeding [5,7]. Therefore, early diagnosis and treatment is vital and preserves fertility. The management is correlated with presence of rupture and vital signs and stability of

the patient. If rupture is detected, surgical procedures like laparotomy and in some cases hysterectomy is performed. Pregnancies of solid and small sizes or containing no cardiac activity may be followed. Methotrexate can be used as a medical therapy for gestational sacs whose radius is smaller than 5 cm and containing no cardiac activity; although there is a risk of progression (9-65%). In pregnancies of gestational sacs with a radius greater than 5 cm, laparotomy, laparoscopy, cornuostomy, laparoscopic resection of cornu, cornual wedge resection or hysterectomy can be performed [5,10]. Treatment should be planned according to the clinical findings of the patient with angular pregnancy. Treatment methods include expectant management, medical therapy with methotrexate, dilatation and curettage assisted with laparoscopy and hysterectomy. Spontaneous abortus is seen in 38% and uterine rupture is seen in 23% of patients having angular pregnancy. The fact that angular pregnancy can turn out to be an intrauterine pregnancy should always be considered. Therefore angular pregnancy should be kept in mind during differential diagnosis of fundal eccentric pregnancies. Patients who will undergo expectant management are determined carefully and they should be informed about the risks of rupture and its consequences of morbidity, mortality and fertility. Informed consent should be suggested. Patients should be the ones willing to have that pregnancy, admitting to have frequent follow-ups and careful about the symptoms of rupture that is told by the physician [6]. In this case, as there was no uterine abnormality finding throughout 2D-ultrasonographic examination and 3D-ultrasonography findings were a gestational sac located closer to endometrial cavity (<1 cm), surrounded by a thick myometrial layer (>5 mm), the diagnosis was angular pregnancy. After the information is given, the patient chose to continue to the pregnancy therefore expectant management was applied. Follow-up 3D-ultrasonography images verified that the gestational sac relocated in intrauterine cavity leaving uterotubal junction. Differential diagnosis of fundal ectopic pregnancies should be carefully done and best treatment should be applied considering clinical and ultrasonographic findings of that particular patient. Patients willing to continue on pregnancy who are stable and diagnosed with angular pregnancy can be managed expectantly without medical or surgical treatments.

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None

Declaration of Interest

None

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