

Expectant Management of an Intramural Ectopic Pregnancy in a Primigravid Woman

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Abstract

Intramural pregnancy, an unusual type of ectopic pregnancy, is conception within the uterine wall, surrounded by myometrium without a connection to the endometrial cavity, fallopian tubes or the round ligament. Common complaints are vaginal spotting, pelvic pain, and a prolonged menstrual period. Before rupture, diagnosis is usually suspected by ultrasonographic findings and confirmed by laparoscopy or laparotomy. On 2-D ultrasound, a gestational sac completely surrounded by myometrium without any relation with the endometrium is the common finding of an intramural ectopic pregnancy. Three-D transvaginal ultrasonography (TVUSG) has several advantages, including more accurate diagnosis of the location of the gestational sac within the myometrium by multiple scan planes and providing better visualization of the endometrium and myometrium separately. We report here a case of intramural ectopic pregnancy in an asymptomatic primigravid woman treated without any medical or surgical interventions.

Keywords: intramural ectopic pregnancy, 2-D ultrasound, 3-D ultrasound

Özet

Bir Primigravidada İntamüral Ektopik Gebeliğin Tedavisi

Ektopik gebeliğin nadir bir formu olan intramüral ektopik gebelik, uterus kavitesi içinde miyometriyum ile çevrelenmiş, endometriyal kavite, fallop tüpleri ve round ligament ile bağlantılı olmayan gebelik olarak tanımlanmaktadır. Sık olan şikâyetler arasında lekelenme tarzında vajinal kanama, pelvik ağrı ve adet gecikmesi sayılabilir. Rüptür öncesinde ultrasonografik bulgular tanıda şüphe uyandırırken, tanı laparoskopisi ve laparotomi ile kesinleştirilir. İki boyutlu ultrasonografide miyometriyum ile tamamen çevrelenmiş ve endometriyum ile ilişki göstermeyen gestasyonel kese görüntüsü intramüral ektopik gebelik için tipiktir. Üç boyutlu transvajinal ultrasonografinin miyometriyum içinde gestasyonel kesenin lokalizasyonunun birden fazla plan alınarak net olarak belirlenmesi ve endometriyum ve miyometriyumun ayrı olarak daha net görüntülenmesi gibi birtakım avantajları mevcuttur. Bu raporda, asemptomatik primigravida bir hastada tanımlanan intramüral ektopik gebelik kesesinin tıbbi ya da cerrahi herhangi bir müdahale yapılmadan tedavisi sunulmaktadır.

Anahtar sözcükler: intramüral ektopik gebelik, 2-D ultrasonografi, 3-D ultrasonografi

Introduction

Although majority of ectopic cases occur within the tube, some rare types may occur in unusual locations. An unusual type of ectopic pregnancy, the intramural pregnancy is described as a conception within the uterine wall, surrounded by myometrium without a connection to the endometrial cavity, fallopian tubes or round ligament (1).

A MEDLINE search containing words “ectopic pregnancy” and “intramural” was done for the period between January 1975 and September 2007. Twenty-two articles met the search criteria and the total number of cases reported was 35 (1-9). Additional articles were obtained from reference lists of pertinent case reports and reviews.

Even though etiological factors are not clear due to its very low incidence, either congenital or an iatrogenic “false passage” within the uterine cavity can lead to an intramural ectopic pregnancy.

Intramural ectopic pregnancies are usually presented with uterine rupture and hypovolemic shock necessitating

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hysterectomy. So, the issue of conservative treatment of intramural pregnancy requires early diagnosis in asymptomatic women. The use of 2-dimensional (2-D TVUSG) and 3-dimensional (3-D TVUSG) transvaginal ultrasonographies have enhanced the early diagnosis and treatment modalities.

We report here a case of intramural ectopic pregnancy in an asymptomatic primigravid woman treated without any medical or surgical interventions.

Case Report

A 21-year-old woman, gravida 1, para 0 was admitted with the complaints of vaginal spotting and a period of 6 weeks since the last menstrual bleeding. Her previous obstetrical history was uneventful. She had no identifiable risk factor. Her abdominal and pelvic examinations were unremarkable. Quantitative β -hCG at presentation was 220 mIU. A 2-D TVUSG was performed by using a 7.5 MHz vaginal probe (3-D Voluson 730D Pro, version 4.03, General Electrics, USA) which revealed a 3.9x3.2 mm gestational sac with a yolk sac and an embryonic pole distinct from the endometrial cavity surrounded by the myometrium (Figure 1). Fetal cardiac activity was not determined. No free fluid was present in the Pouch of Douglas. Subsequently, 3-D TVUSG examinations were performed using the same device, both to better visualize the endometrial cavity and to determine the location of the gestational sac within the myometrium (Figure 2). Three-D USG revealed a 3.8x3.3 mm gestational sac and a 2.0x0.4 mm sinus tract connecting the endometrial cavity with the gestational sac. The finding of a gestational sac within the myometrium distinct from the endometrial cavity suggested us an intramural ectopic pregnancy.

The patient was informed about the management alternatives, either medically or surgically, and of the possible

complications. She did not accept any of the treatment modalities. Quantitative β -hCG measurements were assessed two days apart when the successive levels were 16.3 mIU and 1.53 mIU. As her physical examinations, vital signs, hemoglobin and β -hCG values were all stable during her follow up, she was discharged one week after hospitalization. Before discharge, both 2-D and 3-D TVUSG assessments were repeated and both of the examinations revealed smaller and irregular shaped gestational sacs within the myometrium with degenerated fetal pole-like structures.

She was without any complaints 10 months after the diagnosis. Her latest β -hCG values have declined to normal and ultrasound examination has revealed no product of conception.

Discussion

Intramural ectopic pregnancy is among the rarest form of ectopic pregnancies. It was first described by Doederlien et al. in 1913 (2) and only 35 cases have been reported since in the literature (1-9).

Some etiological factors discussed have been based on previous cases and include prior uterine trauma, microscopic sinus tracts associated with adenomyosis, invasion of the uterine wall by placenta accreta and the subsequent growth of the fetus deep within the myometrium, or external migration and implantation of the ovum on the serosal surface of the uterus (3). In contrast to the previous reports, we could not identify any risk factor related to the obstetrical history of our patient.

Patients may remain asymptomatic till uterine perforation and massive hemorrhage develops. Common complaints are vaginal spotting, pelvic pain, and a prolonged menstrual period.



Figure 1. The 2-D ultrasonographic image of the gestational sac distinct from the endometrial cavity surrounded by the myometrium.

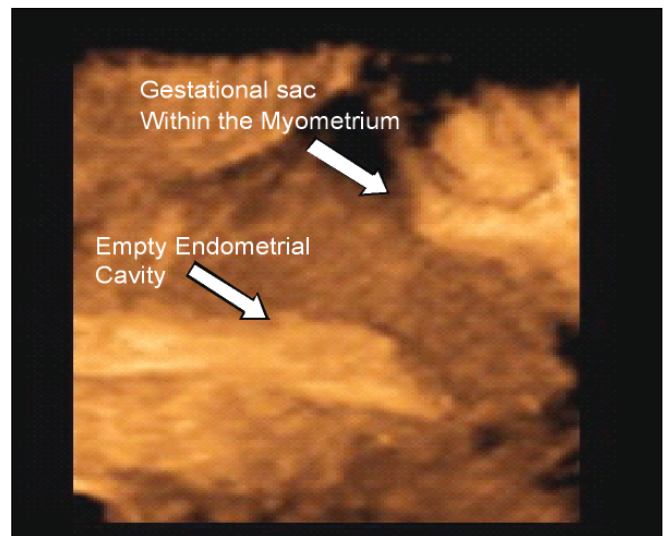


Figure 2. The 3-D TVUSG image of the gestational sac within the myometrium and the empty endometrial cavity.

Before rupture, diagnosis is usually suspected by ultrasonographic findings and confirmed by laparoscopy or laparotomy. Diagnosis is usually difficult both by 2-D and 3-D USGs after rupture as the findings are both non-specific and the situation is emergent. On 2-D ultrasound, a gestational sac completely surrounded by myometrium without any relation with the endometrium is the common finding of an intramural ectopic pregnancy. The use of 3-D TVUSG has been suggested in the literature (4-6) as it has several advantages, including more accurate diagnosis of location of gestational sac within the myometrium by multiple scan planes and providing better visualization of the endometrium and myometrium separately.

The diagnosis should be differentiated from cornual or interstitial ectopic pregnancy, pregnancy in a cystic intramural leiomyoma, sacculation, diverticulum or congenital uterine anomaly. Usually, the myometrium surrounding a cornual ectopic pregnancy is typically abnormally thin (<5 mm) (10). Also, establishing the presence of two endometrial lumina in patients with a bicornuate uterus may help to distinguish. In our case, we performed both 2-D and 3-D ultrasonographies in order to increase the accuracy. Three-D TVUSG revealed that gestational sac diagnosed with 2-D TVUSG was in the myometrium above the uterosacral ligament and below the uterine horn. This view has removed us away from the suspicion of a cornual pregnancy or an interstitial ectopic pregnancy. Sometimes surgery might be necessary to differentiate an intramural ectopic pregnancy from a tubal ectopic pregnancy.

Treatment modalities depend on the time of diagnosis (3,7). If the patient presents with uterine rupture, emergency hysterectomy is usually the treatment of choice. Especially if intramural ectopic pregnancy is diagnosed before rupture, conservative methods including laparoscopy, hysterectomy, injection of potassium chloride to the gestational sac or local or systemic methotrexate injection could be considered. Our patient was admitted before rupture. As our patient did not accept any intervention, we had to choose the expectant management. Its success allowed the possibility of continued fertility.

Prognosis is usually poor for fetuses in intramural pregnancies. Only one case in the literature has been reported when gestation continued without ruptures for 30 weeks resulting in neonatal survival after cesarean hysterectomy (11). Maternal mortality rate is about 2.5% when uterine rupture develops (12).

In conclusion, early detection of intramural ectopic pregnancy in the asymptomatic woman has special importance. Especially early management of patients with unruptured pregnancies would give these patients the chance to preserve their fertility. Both 2-D and 3-D TVUSG assessments would help to determine the probable localization of the gestational sac and choice of the optimal management strategy.

References

1. Ginsburg KA, Quereshi F, Thomas M et al. Intramural ectopic pregnancy implanting in adenomyosis. *Fertil Steril* 1989;51:354.
2. Lu HF, Sheu BC, Shih JC et al. Intramural ectopic pregnancy. *Acta Obstetrica et Gynecologica Scandinavica* 1997;76:886-9.
3. Hsieh YY, Chang CC, Tsai HD et al. Intramural pregnancy with negative β -hCG. *J Reprod Med* 1998;43:468-70.
4. Lawrence A, Jurkovic D. Three dimensional diagnosis of interstitial pregnancy. *Ultrasound Obstet Gynecol* 1999;14:292.
5. Harika G, Gabriel R, Carre-Pigeon F et al. Primary application of 3-dimensional ultrasonography to early diagnosis of ectopic pregnancy. *Eur J Obstet Gynecol Reprod Biol* 1995;60:117.
6. Lee GSR, Hur SY, Kwon I et al. Diagnosis of early intramural ectopic pregnancy. *J Clin Ultrasound* 2005;33:190-2.
7. Bernstein HB, Thrall MM, Clark WB. Expectant management of intramural ectopic pregnancy. *Obstet Gynecol* 2001;97:826-7.
8. Havutcu AE, Alvi SA, Priddy A, Louca O. Conservative surgical management of an intramyometrial ectopic pregnancy. *J Obstet and Gynecol* 1999;19:433-4.
9. Ko HS, Lee Y, Lee HJ et al. Sonographic and MR findings in 2 cases of intramural pregnancy treated conservatively. *J Clin Ultrasound* 2006;34:356-60.
10. Arthur C. Fleischer. *Sonography in Obstetrics and Gynecology. Principles and Practice.* 5th edition 1996:83-107.
11. Fait G, Goyert G, Sundareson A, Pickens A Jr. Intramural pregnancy with survival: Case history and discussion of etiological factors. *Obstet Gynecol* 1987;70:472-4.
12. Neiger R, Weldon K, Means N. Intramural pregnancy in a cesarean section scar: a case report. *J Reprod Med* 1998;43:999-1001.