

# Ectopic Pregnancy with Unusual Location - Diagnosis of Early Angular Ectopic Pregnancy: A Rare Case

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**Abstract:** Angular pregnancy is a rare type of ectopic pregnancy with diagnostic and therapeutic dilemmas in which the gestational sac is implanted in the lateral angle of the uterine cavity. It should be distinguished from interstitial pregnancy. Timely intervention can preserve fertility and prevent life-threatening complications. We report a rare case of angular ectopic pregnancy which was initially thought to be interstitial pregnancy and diagnosis confirmed by magnetic resonance imaging (MRI). This is the first report on usage of mifepristone in angular pregnancy. Through this case, we emphasize the benefit of accurate early diagnosis and medical management in angular pregnancy.

**Keywords:** angular pregnancy, ectopic pregnancy, cornual pregnancy, interstitial pregnancy, mifepristone.

## 1. Introduction

Angular pregnancy is a rare condition in which the gestational sac is implanted in the lateral angle of the uterine cavity medial to the uterotubal junction. INTERSTITIAL PREGNANCY sometimes is mistakenly referred to as CORNUAL PREGNANCY and is frequently confused with ANGULAR PREGNANCY. A strict distinction among these three conditions is clinically important because their findings, management and outcomes are different. It is a potentially life-threatening condition, may present as rupture uterus, placenta accreta, placental abruption, retained placenta, postpartum endometritis etc. and has impact on the future fertility.<sup>1,2,3,4,5</sup> There are several reports on angular pregnancies, however, due to a lack of clinical understanding, angular pregnancy does not appear to be recognized as a clinical entity and many cases are likely to go undiagnosed. As it is more difficult to determine the exact site of implantation as the gestational sac grows in size, early diagnosis of angular pregnancy is very important.

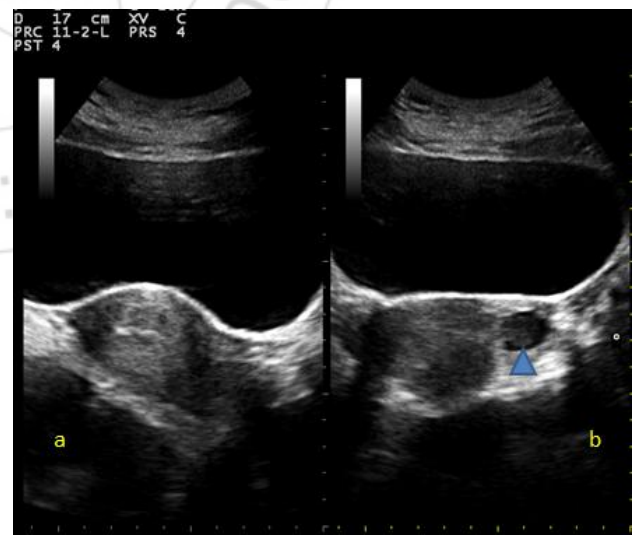
## 2. Case Description

A 21-year-old primigravida with 2 months of amenorrhoea was referred as interstitial ectopic pregnancy. She presented with c/o intermittent lower abdominal cramps instable condition. There was no history of bleeding P/V or vomiting or giddiness or syncope. Clinically abdomen was soft and on vaginal examination uterus was bulky, a firm mass of 5×4cm was felt through left fornix, continuous with uterus. There was no cervical motion tenderness.

Ultrasonography (USG) revealed an empty uterine cavity, endometrial thickness (ET) of 15mm. Eccentric single live gestational sac (GS) located at the left cornual end with crown-rump length of 13mm, corresponding to 7-8 weeks. The myometrial mantle above the sac was thin and measured 4mm (figure 1). Reported as unruptured interstitial ectopic pregnancy. As the diagnosis was inconclusive we proceeded

with MRI and was confirmed as angular pregnancy (figure 2).

Medical termination was started with 600mg of mifepristone under continuous strict monitoring. In the mean time we had planned to consider diagnostic laparoscopy combined with suction evacuation of pregnancy as the next step. Within 48 hours she reported passage of clots and expulsion of products. Follow-up USG reported absent GS and ET 5mm. Serum  $\beta$ HCG dropped down to 148 IU/L and was < 2 IU/L 2 weeks later. The patient was followed up, she presented with spontaneous intrauterine conception after eight months.



**Figure 1:** [a] sagittal midsection of the uterus showing normal endometrial cavity. [b] Transverse gray-scale US image of the uterus shows eccentric GS (arrow head) with thin myometrial mantle



**Figure 2:** T2 weighted coronal section MRI showing the GS in the left lateral wall portion of fundus of uterus [arrow head] with thin myometrium surrounding it. Note the insertion of the round ligament lateral to the sac [arrow]

### 3. Discussion

The Angular pregnancy is distinct from the cornual and interstitial pregnancy. Angular pregnancy is a rare condition in which the gestational sac is implanted in the lateral angle of the uterine cavity medial to the uterotubal junction. Though it is actually an intrauterine pregnancy, angular pregnancy is potentially dangerous.<sup>1,2,3,4,5</sup> Clinical course of Angular pregnancy is very variable. Most cases are asymptomatic, some cases present with abdominal pain and vaginal bleeding. They may end in catastrophic complications if timely diagnosis is not made (table 1). Because of the undetermined sequelae of such pregnancies termination may be a wise approach to preserve the future fertility.

**Table 1:** Outcome of angular pregnancy<sup>1,2,3,4,5,6</sup>

Outcome	ratio	%
Spontaneous abortion	1/2	35-
Uterine rupture ( II trimester)	1/3	20-35%
Live birth	1/4	15-25%
MMR (2times higher than tubal ectopic)	1/1000	0.14 %

Sonographically, a GS surrounded by an incomplete or asymmetric endo-myometrial mantle (EMM) is highly indicative of an angular pregnancy. A suggestive but nonspecific sign is an eccentrically located gestational sac.<sup>7,8</sup> Anatomically the angular pregnancy is implanted medial to the round ligament.<sup>1</sup> These findings are similar to those in the case described above (table 2).

It is anecdotally reported that 3D ultrasound and MRI can give more accurate information about the exact position of the GS and thus help to differentiate between angular and interstitial pregnancies.<sup>7,8,9</sup> Although higher in cost, MRI is most accurate in the diagnosis of an early ectopic pregnancy than other imaging modalities. This makes MRI most appropriate for evaluation of cases which ultrasound scans have been inconclusive.

**Table 2:** USG/MRI differences between interstitial & angular pregnancy

USG/MRI feature	Angular Pregnancy	Interstitial Pregnancy
Uterine cavity	Empty	Empty
Endo myometrial mantle (EMM)	Thin, complete EMM around GS	Thin, incomplete EMM around GS
Round ligament attachment (most specific sign in MRI)	lateral to GS	Medial to GS
Interstitial line sign	Absent	Present

Diagnostic laparoscopy combined with dilatation and curettage in angular pregnancies as therapeutic strategy has been described in reports by Tarim et al<sup>6</sup> and Elhalwagy et al.<sup>7</sup> There are several studies on usage of methotrexate and methotrexate in combination with mifepristone in conservative management of ectopic pregnancy including angular ectopic pregnancy.<sup>10,11,12</sup> According to these studies combination of oral mifepristone and methotrexate resulted in higher success rate overall than methotrexate alone<sup>10,11</sup>, whereas another study showed that 37 of 38 patients with ectopic pregnancy were successfully treated with mifepristone alone.<sup>12</sup> This is the first report on usage of mifepristone in angular ectopic pregnancy.

### 4. Conclusion

By this case report we emphasise that high index of suspicion and early definitive diagnosis of angular pregnancy can prevent catastrophic complications and conserve fertility. There is a definitive role of medical management in angular ectopic pregnancy which needs further studies.

### 5. Future Scope

A keen effort at the early definitive distinctive diagnosis of angular ectopic pregnancy can improve the success rate of medical management and can totally abate surgical approach in termination of angular pregnancy.

### References

- [1] Jansen RPS, Elliot PM. Angular intrauterine pregnancy. *ObstetGynecol*1981;58: 167-175.
- [2] Ji Young Kwon, Seong Jin Hwang, Jae Eun Shin, Won Sik Yoon, Jong ChulShin . Two cases of angular pregnancy complicated by preterm labor and placental abruption at mid-pregnancy. *J. Obstet. Gynaecol*2011;Res.Vol. 37, No. 7: 958-962.
- [3] Triolo O, Mancuso A, De Vivo A, Falcone S. Term angular pregnancy with placenta accreta. A case report. *ClinExpObstetGynecol*2004; 31: 147-148.
- [4] Deckers EA, Stamm CA, Naake VL, Dunn TS, McFee JG. Hysterotomy for retained placenta in a term angular pregnancy. A case report. *J Reprod Med* 2000; 45: 153-155.
- [5] Baldawa PS, Chaudhari HK. Angular ectopic pregnancy presenting as rupture of lateral wall of uterus. *J Hum ReprodSci*.jan- jun2008;1(1): 33-34.

- [6] Tarim, E., Ulasan, S., Kilicdag, E., Yildirim, T., Bagis, T. and Kuscu, E. Angular pregnancy. J of Obstet and Gynaecol Research, 2004;30: 377–379.
- [7] H. Elhalwagy, P. Sinha. Role of 3D ultrasound in the diagnosis of rare case of angular pregnancy. Internet J of Gynecol and Obstet 2009; Vol 11, No. 2: DOI:10.5580/26d3.
- [8] Jafri SZ, Loginsky SJ, Bouffard JA, et al. Sonographic detection of interstitial pregnancy. JC U 1987;15:253-257.
- [9] M. Filhastre, H. Dechaud, A. Lesnik, and P. Taourel. Interstitial pregnancy: role of MRI. European Radiology 2005; vol. 15, no.1: 93–95.
- [10] Perdu M, Camus E, Rozenberg P, Goffinet F, Chastang C, Philippe HJ, et al. Treating ectopic pregnancy with the combination of mifepristone and methotrexate: a phase II nonrandomized study. Am J Obstet Gynecol. 1998;179:640–643
- [11] Rozenberg P, Chevret S, Camus E, de Tayrac R, Garbin O, de Poncheville L, et al. Medical treatment of ectopic pregnancies: a randomized clinical trial comparing methotrexate-mifepristone and methotrexate-placebo. Hum Reprod. 2003;18:1802–1808.
- [12] Zhang W, Wang L. Mifepristone in treating ectopic pregnancy. Chin Med J (Engl). 1999;112:376–378.

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