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Case Report

Pregnancy of unknown location (PUL): a case report and review of literature

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ABSTRACT

While most pregnancies are obviously within the uterus, Pregnancy of Unknown Location (PUL) is used to describe cases where, there is a positive pregnancy test but no sign of a pregnancy inside or outside the uterus, on transvaginal ultrasound or even at laparoscopy. We report a case of multigravida with history of disturbed tubal ectopic pregnancy in previous pregnancy presented with lower abdominal pain and spotting per vaginum following 6 weeks amenorrhoea. The patient was clinically stable with no evidence of intrauterine or extrauterine pregnancy in transvaginal sonography with serum beta human chorionic gonadotropin (beta-hCG) above discriminatory levels. Provisional diagnosis of Pregnancy of Unknown Location (PUL) was made and serial beta-hCG levels shows increasing levels. Endometrial curettage done with histopathology report showed product of conception following which there was a fall in serum beta-hCG. She was finally diagnosed as a case of silent miscarriage. Expectant management has been shown to be safe and effective in reducing the need for surgical intervention but does require close surveillance of patients who present with PUL.

Keywords: Pregnancy of unknown location, Serum beta-hCG, Discriminatory zone

INTRODUCTION

While Pregnancy of Unknown Location (PUL) is a diagnostic dilemma, equally its management has been also challenging. Expectant management is an option for clinically stable women with minimal symptoms and a pregnancy of unknown location.¹

The patients with PUL should be monitored with caution since there is always a possibility of ectopic pregnancy. The prevalence of ectopic pregnancy in PUL is 14-28%.²

We report this interesting case of PUL with high serum beta-hCG levels above the discriminatory level which final diagnosed as a case of silent miscarriage with unusual presentation.

CASE REPORT

We report a case of 26 year old G₆P₂L₂A₃ presented with lower abdominal pain and spotting per vaginum for one day following 6weeks of amenorrhoea. There was no history of bleeding per vaginum or passage of fleshy mass. Her 1st and 4th pregnancy were full term normal vaginal delivery with live baby and 2nd and 3rd pregnancy were first trimester spontaneous abortion with no history of dilation and curettage. In her 5th pregnancy she had disturbed right tubal ectopic pregnancy for which right partial salpingectomy done one and half year back. In the current pregnancy urine pregnancy test was weakly positive two days back. She was married for 7 years with no consanguinity with her husband. Her serum beta-hCG level was 1199 IU/L and Trans-Vaginal Scan (TVS) reported no evidence of intrauterine pregnancy, (Figure

1) endometrial thickness 13 mm with absence right adnexa and normal left fallopian tube with one clear cyst of size 1.5x1.5 cm in the left ovary. In colour Doppler no flow was seen around the cyst (Figure 2). The patient was admitted with a diagnosis of PUL and was then followed up with serial beta-hCG levels. A repeat beta-hCG level in 48hrs was 1665 IU/L. A repeat TVS revealed an endometrial thickness of 14 mm, no intrauterine sac, and normal left ovary with a clear cyst of size 1.5x1.5 cm. She was managed conservatively with monitoring of beta-hCG levels and ultrasound pelvis. The follow up TVS after a week showed no evidence of Intra-Uterine Pregnancy (IUP) and 16x15x15 mm cyst in the left ovary. The serum beta-hCG level was 1895 IU/L. The patient continued to remain stable without any symptoms. Endometrial curettage was done and histopathology reports revealed presence of chorionic villi. Her beta-hCG levels following the endometrial curettage dropped to 124 IU/L and became normal after one week. The final diagnosis was a silent miscarriage which had presented in this unusual way.

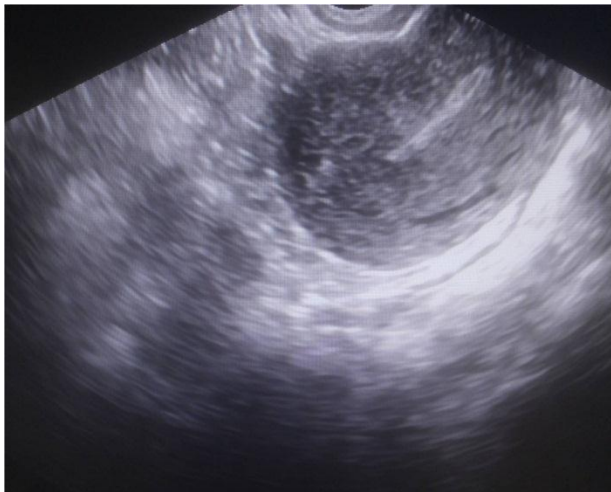


Figure 1: USG showing empty uterine cavity.



Figure 2: Colour Doppler showing no flow around the cyst.

DISCUSSION

When neither an intrauterine nor an extrauterine gestational sac is observed in transvaginal ultrasonography, defining a “Pregnancy of Unknown Location (PUL)”, the possibilities include an intrauterine pregnancy in which the gestational sac has not yet developed, collapsed, or completely aborted, and an ectopic pregnancy that is too small to be detected or has aborted. Overall, at least 25% of women with an ectopic pregnancy present first with a PUL, and 7-20% of women with that initial diagnosis prove ultimately to have an ectopic pregnancy.³ When Ultrasonography is inconclusive; serum beta-hCG concentration can be used for diagnosis. The concept of a “discriminatory zone”, the minimum serum beta-hCG concentration above which a gestational sac always should be detected in a viable intrauterine pregnancy, revolutionized the diagnostic approach to women with suspected ectopic pregnancy. In TVS the discriminatory zone ranges between 1500 and 3000 IU/L and it depends on the experience of the examiner, the type of instrument use, the symptoms of the woman, presence of uterine fibroids and multiple pregnancy.^{1,4-6} The threshold value of 2000 IU/L is given in the algorithm (Figure 3).⁷ Serum beta-hCG level should increase at least 66% every 2 days at concentration below 10,000 IU/L in viable intrauterine pregnancies.⁷ In women with normally increasing beta-hCG levels below the discriminatory value, Ultrasonography should be repeated when levels have risen above the discriminatory value. Women with rapidly decreasing beta-hCG concentration warrant only continued observation because the likelihood of ectopic pregnancy is low.⁸ Slowly declining or abnormally rising beta-hCG levels indicates a nonviable pregnancy that still may be ectopic or intrauterine, but virtually excludes the possibility of a viable intrauterine pregnancy. Uterine curettage and absence or presence of villi, can help to distinguish ectopic from nonviable intrauterine pregnancies, but still should be applied selectively. Uterine curettage can prevent misdiagnosis of ectopic pregnancy leading to unnecessary exposure to methotrexate in approximately 40% women, therefore it is recommended for women with nonviable PUL.⁹ A 20% or greater decrease in the postcurettage serum beta-hCG level within 12-24 hour suggests strongly that the patient had a nonviable intrauterine gestation that was removed.¹⁰ Conversely, a slower rate of decrease or an increase, strongly suggests an ectopic pregnancy. Serum progesterone levels greater than 20 ng/ml indicates a normal intrauterine pregnancy and value less than 5 ng/ml indicates a nonviable pregnancy, which may be either ectopic or intrauterine.¹¹ However, serum progesterone measurement generally add very little diagnostic evaluation of women suspected of having ectopic pregnancy because of wide variation and overlapping of levels in early normal intrauterine pregnancies and ectopic pregnancies.⁷ Women should be followed up until the final pregnancy outcome is known which includes: failing PUL, intra-uterine pregnancy,

ectopic pregnancy and persisting PUL. A conservative approach to PUL prevents inappropriate intervention in a viable intrauterine pregnancy. Although there is a risk of modest delay in diagnosis of ectopic pregnancy and a

small possibility of rupture, evidence from several studies indicates that a conservative diagnostic approach rarely compromise the care of women with PUL.⁷

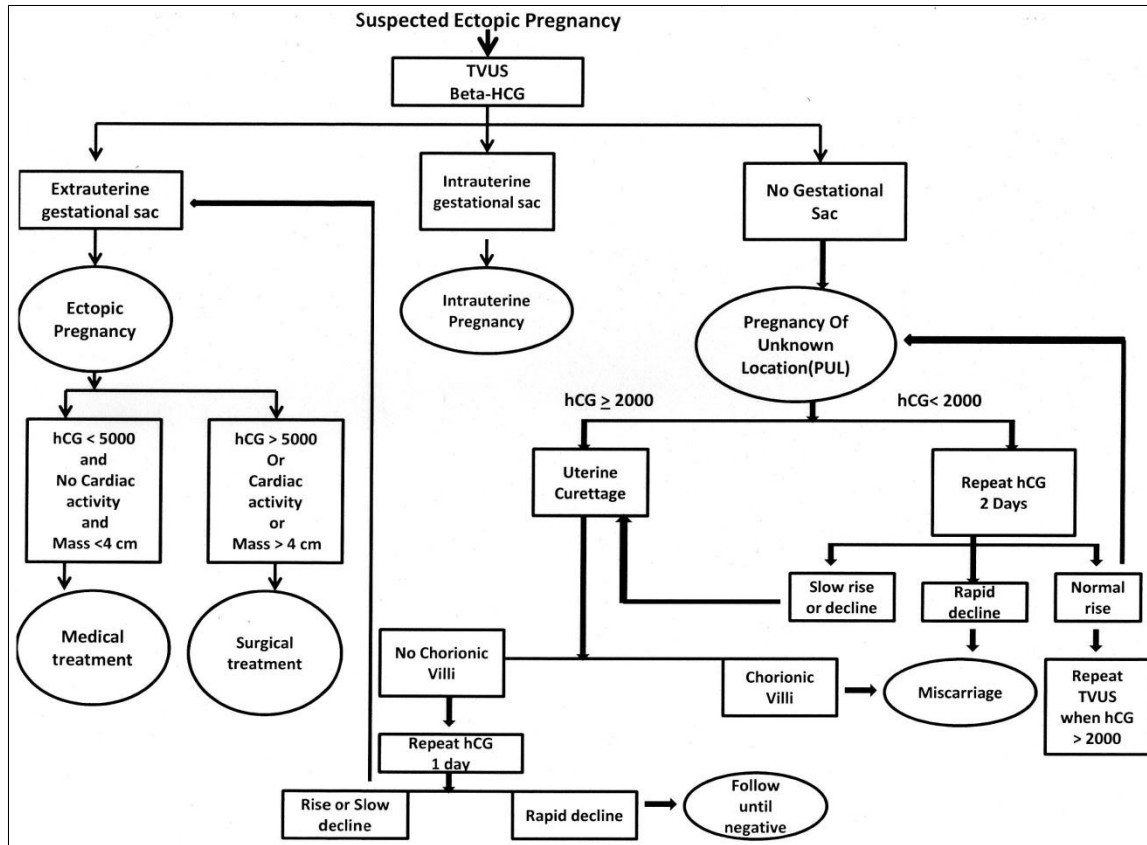


Figure 3: Algorithm showing management of PUL.

CONCLUSION

This case highlights the importance of cautious monitoring and timely intervention in case of PUL. Also proper counselling and clear information should be given to the women with PUL regarding the management, follow up and outcomes.

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