

THE HYPER ECHOIC OVOID MASS: A PREDICTOR OF VESICULAR MOLE AS EARLY AS 6TH WEEK OF GESTATION

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ABSTRACT

The introduction of high resolution Tran's vaginal ultrasound in routine obstetric practice has revolutionized diagnosis of early pregnancy and related clinical entities such as vesicular mole. The diagnostic accuracy is improved further by Doppler evaluation. At present vesicular mole is diagnosed at 8-9 weeks of gestation much earlier than clinical detection; usually beyond 14 -16 weeks of gestation. Here a rare but unique ultrasound finding that can predict the later development of vesicular mole; called hyperechoic ovoid mass has been described. It can appear at 6 weeks of gestation. This can later develop to a vesicular mole that can be diagnosed at 8 -9 weeks of pregnancy by ultrasound.

Key words: vesicular mole; hyperechoic ovoid mass; trophoblastic disease; Transvaginal ultrasonography.

INTRODUCTION

The Prevalence and incidence of vesicular mole is decreasing worldwide, thanks to increased nutritional states and widely accepted family planning programmes.^[1] But in Vietnam where there is a rising trend in the incidence of vesicular mole after 1955- 1975 war where there was extensive use of Agent Orange as a herbicide.^[2] Classically vesicular mole is diagnosed by the appearance of a characteristic honey comp pattern inside the uterine cavity at 8th to 9th week of gestation by transvaginal sonogram.^[3] Very often this heterogeneous hyper echoic central echo in an enlarged uterus with small cystic spaces cannot be distinguished from incomplete abortion or missed abortion.^[4]

This report describes an unusual finding of an ovoid hyper echoic mass within a well-defined gestational sac visualized by endosonogram at 5 weeks and 6 days of gestation associated with the subsequent development of a molar pregnancy. It may represent the earliest reported sonographic appearance of a molar pregnancy, as a previous earliest report was at 6 weeks and 5 days of gestation by Bronson et al in 1992.^[5]

CASE REPORT

Patient was a 24 year old woman had 2 abortions at 10 to 12 weeks of gestation,

last being 3 years ago. She used to get irregular periods with 5-6 days flow at 40 to 45 days of the cycle. Her BMI was 26, without any medical or surgical illnesses. She was sexually active and was attempting to conceive for the last 3 years.

On 13th day of the cycle her pelvic ultra-sonogram revealed normal size uterus with 7mm endometrium, and bilaterally active ovaries containing small atretic follicles arranged peripherally in a necklace pattern, none of them attains more than 8 to 10 mm with thick ovarian stroma, consistent with PCOD. Her serum FSH, TSH, Prolactin levels were within normal range. She had been given Metformin 850 mg bid, folic acid daily and letrozole 10 mg daily for 5 days. She was living with sexually active partner with normal seminal parameters. 13th day of the induced cycle USG revealed a normal size uterus with endometrial triple line pattern of 10.5 mm bright, with a follicle on right ovary 20 to 22 mm.

left ovary was quiescent. Cervical mucus was scanty but with 4 to 5 very active sperms after 6 hrs of contact. There was vaginitis. She was treated with Doxycycline 100 mg bd for 5 days and inj. Lupride 1 mg given in anticipation to proper follicular rupture, fertilization and implantation she was reported 38th day of her LMP with a positive urine pregnancy test. Trans vaginal scan revealed an ill-defined gestational sac of 9.6 mm with a corpus luteum right side

with moderate amount of free fluid in the pouch of Douglas (Figures 1 A and B). This picture aroused a strong suspicion of ectopic

pregnancy. But she was asymptomatic throughout the observation period.



Fig.1.A Transvaginal sonogram at 38th day of LMP shows a small ill-defined gestational sac 9.6 mm without any yolk sac, with moderate amount of free fluid in the pouch of Douglas.

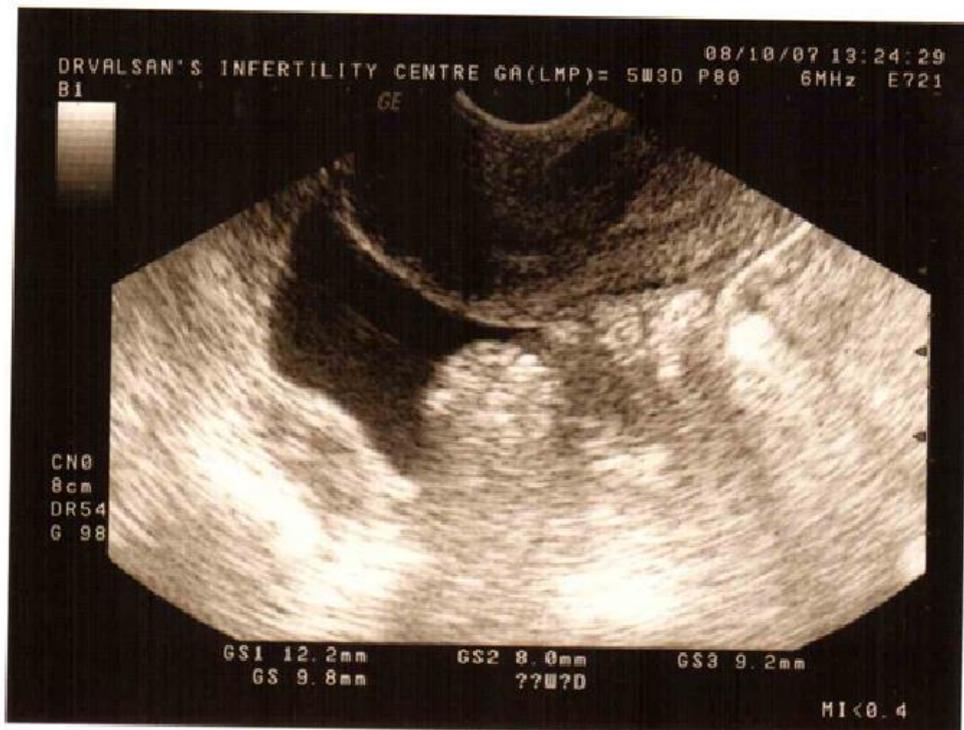


Fig.1-B. In same lady USG at 38 the day of LMP with an ill-defined gestational sac (as shown in Fig,1A) and moderate amount of fluid in Cul de sac suggestive of ectopic pregnancy

She was reported after 48 hrs with an advice to observe any abdominal cramps or vaginal bleeding. She was symptom free throughout. After 48hrs on 41st day of her LMP endosonogram was repeated (Figure 1.C). There was a well-defined gestational sac with bright echogenic rim of 16 mm. corresponds to 5 weeks 6 days of gestation.

But there was no yolk sac, fetal pole or fetal cardiac activity that is normally anticipated at this gestational age. Instead there was an unusual structure named hyperechoic ovoid mass 7x8 mm arising from the inner side of the gestation sac that invites our attention. Her Beta hCG at that time was 16,200 iu/l



Fig.1.C Endovaginal sonogram of the same patient (Fig 1- A and B) at 5 weeks 6 days of gestation shows a well-defined gestational sac, with a bright hyper echoic ovoid mass of .7x8 mm size .within the gestational sac. Fetal pole, Yolk sac and cardiac activity were absent. This solid nodule is considered to be a predictor of vesicular mole.

Since the patient was asymptomatic and no conclusion was derived from this finding she was asked to review after 2 weeks. She reported at 10th week gestation. USG was repeated at that time there was a central hyper echoic shadow with cystic spaces of variable size characteristic of vesicular mole (Figure 1.D). Suction evacuation done 10 - 11-2007 removed vesicles in plenty and

trophoblastic disease was confirmed on histopathological examination. Her Beta hCG was 63063 miu/ml and she was followed up regularly with weekly hCG. hCG regressed rapidly by 6th week after evacuation and she had normal menses at 6th week conceived later and delivered a normal male baby after 2years.

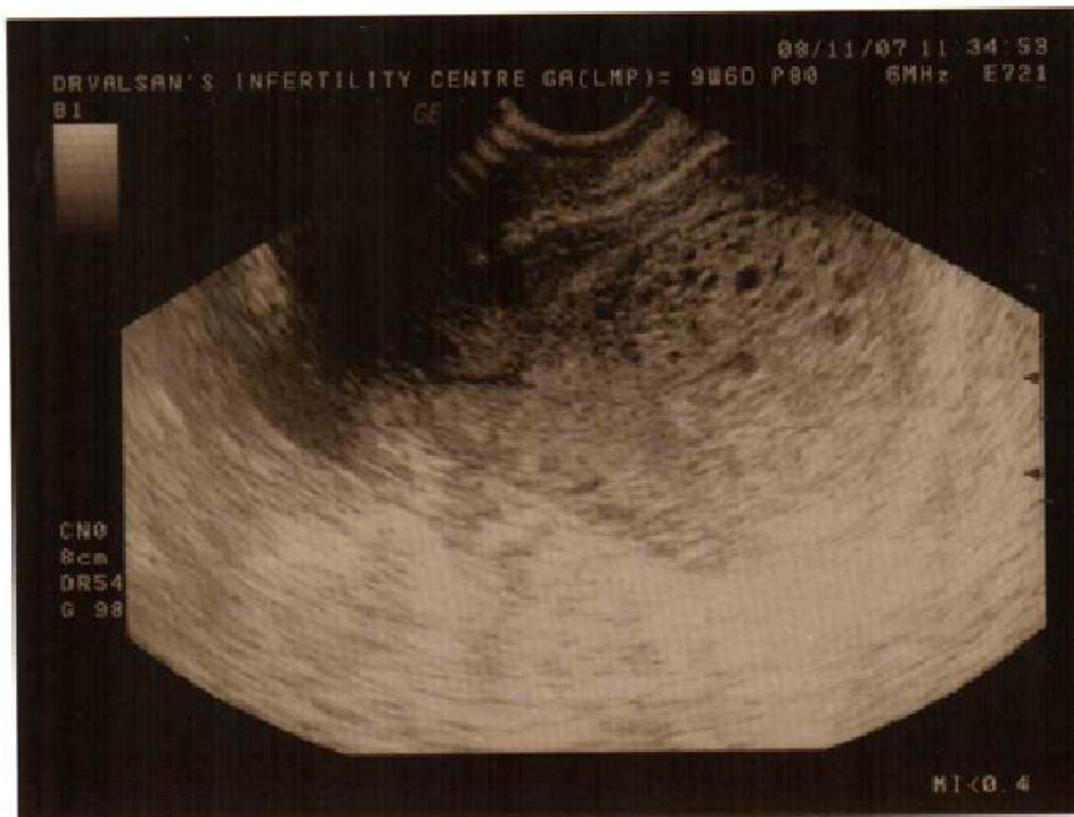


Fig .1 D: Sonogram at 10th week of gestation of the same patient shows no evidence of gestational sac or fetal pole but a central heterogeneous mass with multiple cystic spaces suggestive of vesicular mole.

DISCUSSION

Typically vesicular mole appear as “snow storm” - speckled, moth eaten or honey comb pattern, i.e. uterine cavity is occupied by a central heterogeneous mass with small cystic spaces.^[6] This finding may not be visible up to 9 weeks of gestational age by abdominal scan. However endosonogram provides better imaging resolution than abdominal scan make it possible to diagnose abnormal pregnancies early in gestation.^[7] The first definitive sonographic finding to suggest early pregnancy is visualization of the gestational sac with bright echogenic rim. Using vaginal transducers with frequencies of at least 5MHz the size threshold for the sac detection is 2-3 mm, corresponding to between 4 weeks and 1 day GA and 4 weeks and 3 days GA.^[8, 9] The yolk sac is the first anatomic structure identified within the gestational sac and visible initially by 5th week of pregnancy. It is spherical in shape with a well-defined echogenic periphery and a sonolucent center. Its diameter increases between 5 and

10 weeks GA to a maximal diameter of 4-6 mm.^[10] Visualization of yolk sac confirms intra uterine pregnancy as opposed to a pseudosac associated with ectopic pregnancy.^[11] Yolk sac that are abnormally increased or decreased in size, calcified, or double (vitelline duct cyst) are associated with antecedent or subsequent embryonic demise.^[12, 13] The identification of cardiac activity in an embryo with CRL of less than 5 mm at 6 weeks gestational age.^[14] When activity is obtained before 6 weeks it is relatively slow typically between 100-115 BPM there after it increases rapidly and by 8 weeks is between 144 -160.^[15] In the present case ectopic pregnancy was suspected at 38th day of LMP, because there was no definite gestational sac or yolk sac in the uterine cavity. There was moderate amount of free fluid in the pouch of Douglas. But later 41st day the whole picture changed. There was a well formed sac with no fetal pole, cardiac activity or yolk sac, rather an attractive homogenous bright hyper echoic ovoid mass 7x9 mm attached to gestational sac that invites our attention. This unusual

bright ovoid body later changed to vesicular mole. Therefore this bright echogenic ovoid mass was considered to be a predictor of vesicular mole. Further clinical monitoring showed that uterus contains a heterogeneous central mass with clearly vesicular features consistent with the molar pregnancy.

The role of hCG for the diagnosis of vesicular mole is questioned in the era of high resolution ultrasound. Once the HCG level is 1000Miu/mol intrauterine gestational sac should be identified by USG. If sac is not identified then there is high suspicion of ectopic gestation, for which repeat USG evaluation is mandatory. HCG estimation is useful in the follow up of vesicular mole or medical management of ectopic pregnancy.

In the above described clinical scenario following differential diagnosis also need to be considered.

1. **Calcified yolk sac:** The size of the yolk sac varies from 4-6 mm. It is an ovoid structure with sonolucent centre with bright margin. Very often the fetal pole with cardiac activity can be seen near to the yolk sac between 5-6 weeks of pregnancy. Large yolk sac is associated with aneuploidy or partial mole that very often leads to embryonic demise. Calcified yolk sac is associated with foetal demise. An expert sonologist can very often identify these variations and come to the diagnosis without much difficulty.
2. **Intrauterine blood:** Various names are given for this entity, subchorionic bleeding, perigestation bleed or implantation bleeding. It occurs at the junction between chorion frondosom and deciduas basalis. Depending on the site

size its complication varies. Fresh blood will be hyperechoic later old blood undergoes liquefaction and it become sonolucent with low -level echoes.

CONCLUSION

High resolution transvaginal transducers have revolutionized the early detection of pregnancy; they detect the pregnancy earlier than its detection by abdominal scan. So much so gestational sac appears by 5th week with its characteristic size shape and texture site of implantation and progressive enlargement as pregnancy advances. Any deviation from the growth pattern can predict embryonic demise. Likewise yolk sac appears between 5-6 weeks, its size, shape; consistency determines the outcome of pregnancy. Cardiac activity and crown rump length appears between 6 -7 weeks of pregnancy. There is progressive increase in the size of CRL and increase in the heart rate as pregnancy advances. Any deviation from the normal growth pattern can predict lethal Anueploidy conception leads to abortion. Hyperechoic ovoid mass is one such predictor that appears 6th week of pregnancy and later by 8th week develops to vesicular mole. The advantages of early diagnosis of hydatidiform mole in the first trimester are many. The pregnancy termination is accomplished by the simple and quick suction aspiration procedure. Blood loss is minimal. Complete emptying of uterus assured. Uterine injury and chance for uterine infection are obviated. Certain medical problems like ARDS are unknown among subjects undergoing early evacuation. The chance for later development of persistent trophoblastic disease is less. The follow up time can be reduced.

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