

SONOGRAPHY OF THE PARTIAL MOLAR PREGNANCY

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ABSTRACT

A case of partial mole was presented in a 30-year-old female patient by an ultrasonographic examination. The study was performed intervally from 9 to 19 weeks-gestation. It showed thickening of the placenta with detectable small cysts at 19 weeks-gestation. Ovarian corpus lutein cysts was noted at 9 weeks-gestation. The growth of the fetus was retarded. Oligohydramnios was present.

INTRODUCTION

Gestational trophoblastic disease describes a spectrum of proliferative diseases of the trophoblast, from the benign hydatidiform mole to the more malignant and frequently metastatic choriocarcinoma (1). There are presently two different classification schema for gestational trophoblastic disease. The older, histopathologic scheme divides trophoblastic disease into hydatidiform mole (complete, partial, with coexistent fetus), invasive mole (chorioadenoma destruens) and choriocarcinoma (2). The clinical classification divides this disease into benign trophoblastic disease, malignant (non metastatic disease) and malignant (metastatic disease).

The role of sonography in gestational trophoblastic disease is greatest in establishing the diagnosis of hydatidiform mole (2). A characteristic sonographic appearance of hydropic villi occurs with most molar pregnancies. Sonography is considered an important adjunctive test to serial beta-hCG assays in malignant trophoblastic disease since the size of the tumor and the presence of distant metastases can be ascertained (3).

CASE REPORT

A 30-year-old female primigravida patient was 9 weeks pregnant at the time that left sided abdominal pain developed. Ultrasonography at 9 weeks pregnancy showed normal fetus with CRL 20 mm. and left ovarian cyst, size 3 cm. (Fig.1).

The second ultrasonographic examination was performed at 11 weeks-gestation, the growth of the fetus is normal with CRL 40 mm. The size of left ovarian cyst remained the same (Fig.2).

The patient developed hyperemesis gravidarum at 15 weeks gestation. The 3rd ultrasonography was performed at 17 weeks-gestation. It showed enlarged placenta, occupying two-thirds of the uterus, the fetal size was 14 weeks and the oligohydramnios was seen. The left ovarian cysts has increased size to 10 x 12 cm. (Fig.3) and multiloculated appearance was noted.

The patient had dyspnea and severe hypertension, two weeks later cardiomegaly with left ventricular enlargement was observed at plain radiograph of the chest (Fig.4). Portable

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Fig. 1A. Sonography at 9 weeks-pregnancy, the CRL of the fetus corresponded with the gestational age.



Fig. 1B. Sonography at 9 weeks-pregnancy showed at left ovarian cyst size 3 cm. and the cyst appeared uniloculated.



Fig. 2 Sonography at 11 weeks gestation, the fetus has grown up at a normal rate.

ultrasonographic examination at 19 weeks-gestation showed the viable 14 weeks size fetus. The placenta was markedly enlarged with presence of small cysts and the molar pregnancy was suggested (Fig.5). Doppler echocardiography showed a high output failure. The serum T3 was 278 mg% (80-200), T4 was 14.55 mg% (4.5-12.5) which was increased. The serum TSH was 0.03 mg% which was decreased. The hCG level was high (103,130 mIU/ml).

The curettage was performed and pathologic section of the placenta and the fetus was compatible with partial molar pregnancy and there was no obvious gross anomaly of the fetus. The vesicle placenta weighted 800 grams. The chromosome analysis was not performed.

DISCUSSION

Hydatidiform mole is characterized by marked edema and enlargement of the chorionic villi, which is the characteristic that allows sonography identification. This is accompanied by disappearance of the villous blood vessels and proliferation of trophoblast that line the villi (2). Although moles with an abundantly proliferative trophoblast have a greater likelihood of being malignant, it is not possible to accurately predict on the basis of histologic appearance the malignant potential of a given mole. Approximately 20 percent of complete moles are followed by malignant sequelae of invasive mole or choriocarcinoma. The histopathologic classification of hydatidiform mole has not proven to be an accurate prognostic indication to select the 20 percent of patients with a molar pregnancy who will subsequently develop malignant disease (2,5).

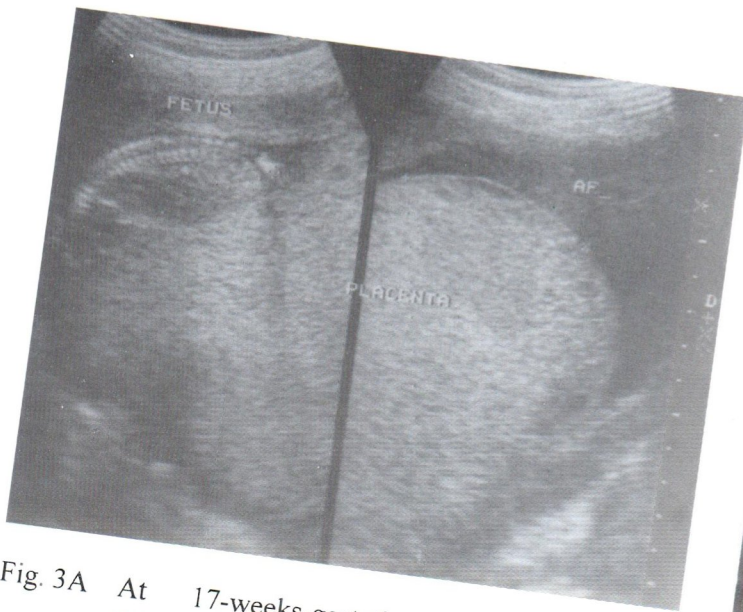


Fig. 3A At 17-weeks-gestation, ultrasonography revealed marked thickening of the placenta and the fetal size corresponded to only 14 weeks size.



Fig. 3B At 17 weeks gestation, the left ovary has increased in size, containing multiple lutein cysts.

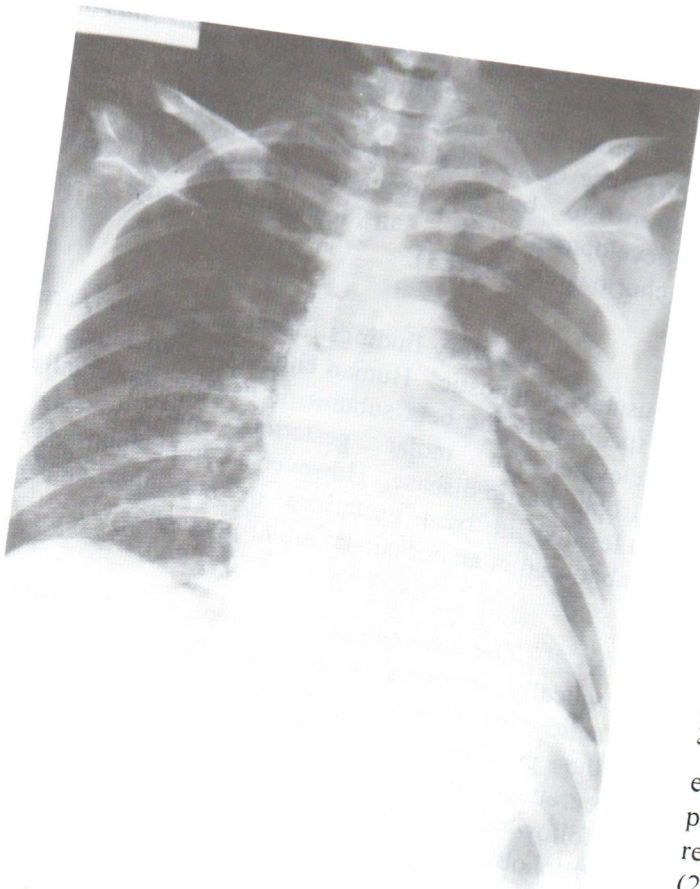


Fig. 4 Portable chest film at ICU, showed mild cardiomegaly and pulmonary congestion.

Hydatidiform mole results from the fertilization of an "empty egg"; that is, an ovum with no active chromosomal material (2,6). The chromosomes of the sperm, finding no chromosomal complement from the ovum, reduplicate themselves, resulting in a 46xx mole. There are no fetal parts or chorionic membrane associated with this situation, which is called a "complete mole" or "classic mole". Complete moles have varying degrees of trophoblastic proliferation and may be either benign or malignant. Malignant gestational trophoblastic disease may follow a mole or be associated with a spontaneous abortion, ectopic pregnancy, or full term pregnancy.

Some hydatidiform moles may contain a small complement of fetal structures such as a placenta with membranes. This is classified as a "partial mole". Such cases usually involve some edema of the villi but relatively little trophoblastic proliferation. Although malignancy has been reported, "partial moles" are almost always benign (2,7). The fetus in such cases usually has significant congenital anomalies and a triploid karyotype (8). Two chromosomes are of paternal origin and the third is of maternal origin (9). About two-thirds of triploid fetuses are xxy and one-third are xxx (10).

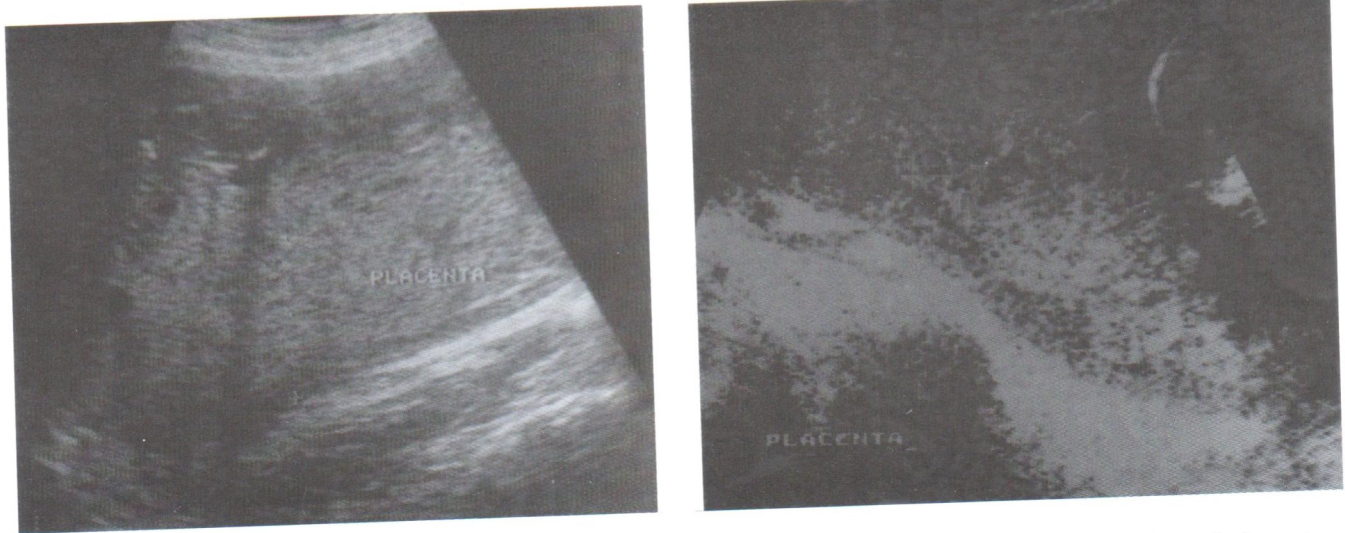


Fig. 5 Portable ultrasonography at 19 weeks-gestation showed multiple small cysts in the thickened placenta.

Morphologically similar, but much less common than the partial mole, a fetus can coexist with a complete mole. This disorder is thought to result from molar degeneration of one conceptus of an identical twin pregnancy, with the other conceptus developing into a fetus and placenta (11). In these patients, a fetus and normal placenta can usually be identified as opposed to a partial mole where a normal placenta is not present.

Hydropic degeneration of the placenta may have a similar sonographic appearance to a complete or partial mole but, histologically, is not associated with trophoblastic proliferation. The villi in hydropic degeneration of the placenta are swollen and edematous thus resembling abnormal trophoblastic tissue. Hydropic degeneration may be seen in 20 to 40 percent of placentae from abortuses (4).

Clinically, a molar pregnancy is first considered in the differential diagnosis of a patient who presents with severe preeclampsia prior to 24 weeks' gestation, a uterus that is too large for dates, and first trimester bleeding. Occasionally, the patient may notice grape-like vesicles passed per vaginum which are diagnostic of this condition (2). The bleeding may be so intense as to result in shock. The uterus is frequently too large for dates in patients with this condition. However, if significant expulsion of molar tissue has occurred prior to sonographic examination, the uterus may be normal size or even too small for dates.

Theca lutein cysts are frequently encountered in patients with a molar pregnancy. The actual incidence of these cysts with molar pregnancy described in reported series ranges from 18 to 37 percent (12,13). When compared to clinical examination, sonography can more accurately assess the presence or absence of these cysts (14). The presence or absence of theca lutein cysts does not seem to be an accurate predictor of later development of an invasive mole or choriocarcinoma (13).

Laboratory findings for molar gestations are usually diagnostic. Human chorionic gonadotropin, specifically the beta subunit, is usually abnormally elevated in molar gestations and invasive trophoblastic disease. However it can be spuriously elevated in twin gestations or not significantly abnormal in an occasional molar pregnancy (1).

The treatment of molar pregnancies typically involves suction curettage. A chest radiograph should be obtained in order to exclude the possibility of metastatic disease. After curettage, serial beta-hCGs are obtained in order to follow the activity and presence of remaining trophoblastic tissue. The serum level of this glycoprotein hormone should return to normal 10 to 12 weeks after evacuation (15). Although theca lutein cysts, if present prior to curettage, should regress with successful treatment of molar

pregnancy, the presence or absence of these cysts should not be taken as reliable indications of the presence or activity of residual disease (16). Sonography does have an important role in these patients in which the beta-hCG rises, since it can detect the presence or absence of intrauterine pregnancies, which may occur after curettage. Fetal heart tones may be absent in patients with molar gestations due to intrauterine fetal demise. Approximately 2 percent of molar gestations will have a coexistent fetus (17).

The sonographic appearance of a hydatidiform mole is quite distinctive (2). In most cases, a sonographic pattern arising from molar tissue consists of echogenic intrauterine tissue that is interspersed with numerous punctuate sonolucencies. Irregular sonolucent areas may occur secondary to internal hemorrhage or an area of unobliterated uterine lumen.

The sonographic appearance of a hydatidiform mole varies according to the gestational duration and the size of the hydropic villi (18). For instance, hydatidiform moles that occur from 8 to 12 weeks typically appear as homogeneously echogenic intraluminal tissue, since the villi at this stage have a maximum diameter of 2 mm. As the hydatidiform mole matures to 18 to 20 weeks, the vesicles have a maximum diameter of 10 mm, which is readily delineated on sonography (19).

As opposed to the complete mole, partial molar pregnancy, hydatidiform mole coexistent with fetus and hydropic degeneration of the placenta are associated with the presence of a fetus or fetal parts. Although it may be difficult to differentiate between a partial molar pregnancy and a complete mole with a coexistent fetus on the basis of sonography, these two entities can be differentiated from a complete mole when an identifiable fetus is present (11,19,20).

Hydropic degeneration of the placenta associated with incomplete or missed abortions is the most common condition that can simulate the appearance of a molar pregnancy. This is due to the sonographic similarity of a hydropic placenta with marked swelling of the villi to molar tissue. A fetus may or may not be present with hydropic degeneration of the placenta. Serum beta-hCG

levels are generally lower in hydropic degeneration than in partial or complete moles probably due to the reduced number of functioning trophoblasts (4).

Occasionally uterine leiomyoma, some ovarian tumors and patients with retained products of conception with hemorrhage can simulate the sonographic appearance of molar pregnancies (4,21,22).

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