

## Partial Hydatidiform Mole

Partial Hydatidiform Mole is a type of gestational trophoblastic disease. In this disease, the haploid egg is fertilized by two separate sperms resulting in a triploid embryonic/fetal karyotype. Hydropic chorionic villi are a characteristic feature on histology as well as ultrasound. Partial moles often present with vaginal bleeding in a pregnant mother. Diagnostic workup includes increased beta hCG levels and the presence of fetal structures. Dilation and curettage as well as methotrexate are key management strategies.



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### Characteristics

#### Gestational Trophoblastic Disease

##### [Pregnant Trophy-blast Diseased](#)

Gestational trophoblastic disease (GTD) is a constellation of conditions that arises from abnormal fertilization processes. Examples include complete hydatidiform mole, partial hydatidiform mole, and choriocarcinoma.

#### Dual Fertilization of Haploid Egg

##### [2 Sperms Attacking Hat-plaid Egg](#)

A partial mole involves fertilization of an egg containing a haploid set of chromosomes being fertilized by two sperms, with each containing their own haploid set of chromosomes.

#### Triploid Fetal Karyotypes

##### [Triple Fetuses with Karyotype-typewriter](#)

The fertilization process leads to the development of triploid fetal/embryonic karyotypes e.g. 69,XXX, 69,XXY, and 69XYY.

#### Hydropic Chorionic Villi

##### [Water Oreo Village](#)

Partial mole involves focal hydropic degeneration of chorionic villi. At the same time there is proliferation of cytotrophoblasts and syncytiotrophoblasts, which leads to embryonic death. Hydropic degeneration involves the accumulation of  $H_2O$  in cells in response to injury. The impaired Na/K ATPase decreases ATP production (due to hypoxia), which leads to Na accumulation in the cell with water entering the cell. The chorionic villi are a collection of structures that arise from the chorionic plate (formed by cytotrophoblasts and syncytiotrophoblasts). These structures project into the intervillous space to establish the placental-maternal interface.

### Presentation

#### Vaginal Bleeding

##### [Vagina-violets Bleeding](#)

Symptoms of a partial mole are less severe than in a complete mole. Nevertheless, vaginal bleeding and pelvic tenderness in a reproductive age woman can raise suspicion.

## Diagnosis

### Increased Beta hCG

#### Up-arrow Pregnant Beta-fish

There are elevated levels of beta-hCG with a partial mole. However, the placenta does not secrete as much compared to a complete mole. This can lead to amenorrhea and vaginal bleeding. But due to lower beta-hCG levels, there is no enlargement of the uterus and no symptoms related to hCG overstimulation (e.g. hyperthyroidism). On IHC staining, a partial mole is p57 positive because the cells contain maternal genetic material in addition to paternal (p57 is maternal in origin).

### Fetal Structures

#### Fetus Structure

During ultrasound or uterine evacuation, fetal structures may be evident because the embryo can reach a considerable developmental stage in amniotic fluid before clinical findings are noticed.

## Considerations

### Dilation and Curettage (D&C)

#### Dyed-dilation at Cervix with Carrot-trap

Partial moles have a <5% risk of becoming invasive. A complete evacuation of the uterine cavity is the mainstay of treatment. This involves a uterine evacuation by dilation and suction curettage (i.e. surgically removing tissue by scraping or scooping).

### Methotrexate

#### Moth-T-Rex-ate

After the uterine evacuation, beta hCG levels will need to be monitored to ensure premalignant cells have been removed. This usually occurs for 8-12 weeks with 3 weeks of consecutive undetectable amounts. If unresolved (i.e. beta-hCG does not decrease) then chemotherapy can be started. The chemotherapy treatment depends on the risk score (< 6 is low; >6 high). If low risk then a single chemotherapy agent can be used (e.g. methotrexate or actinomycin D). If methotrexate is provided then this is often given with folinic acid on alternating days to prevent medullary toxicity.