CONDITION

Gestational trophoblastic disease

Gestational trophoblastic disease is a group of conditions caused by abnormal growth of placental cells after conception.

WHAT IT IS
Abnormal growth of pregnancy-related placental cells

BODY SYSTEM
Reproductive system

MAIN SYMPTOMS
Vaginal bleeding, severe nausea, pelvic pain, enlarged uterus

WHAT CAUSES IT
Abnormal fertilisation, rarely inherited

HOW IT IS DIAGNOSED
Ultrasound, hCG blood tests, and tissue examination

MAIN TREATMENT
Uterine evacuation, hCG monitoring, and chemotherapy when needed

CAN IT BE CURED?
Yes - most cases respond well to treatment

IS IT AN EMERGENCY?
Sometimes - heavy bleeding, fainting, chest pain, or breathlessness

LONG-TERM OUTLOOK
Most people recover with fertility preserved

Overview

Gestational trophoblastic disease, often shortened to GTD, is a group of uncommon conditions linked to pregnancy. It begins in trophoblast cells, which normally help form the placenta.

Most GTD begins as a molar pregnancy, also called a hydatidiform mole. Abnormal tissue grows inside the uterus instead of a healthy placenta, and the pregnancy cannot develop normally.

A complete mole has abnormal placental tissue without a developing baby. A partial mole may contain some fetal tissue, but it cannot develop into a healthy pregnancy.

In some cases, abnormal cells remain after the pregnancy tissue has been removed. Continued growth is called gestational trophoblastic neoplasia, or GTN. GTN includes invasive mole,

choriocarcinoma, placental-site trophoblastic tumour and epithelioid trophoblastic tumour. Specialist treatment is often highly effective.

GTD requires follow-up even after you feel physically well. Blood tests for the pregnancy hormone human chorionic gonadotropin, known as hCG, can show whether abnormal cells remain.

Symptoms

GTD does not always cause clear symptoms. Some molar pregnancies are first noticed during an early ultrasound or after tissue from a miscarriage is examined.

Possible symptoms include:

High blood pressure and protein in the urine can occasionally develop unusually early in pregnancy. This is called early pre-eclampsia and may lead to testing for a molar pregnancy.

These symptoms can have many other causes. GTD cannot be identified without an ultrasound, blood tests and sometimes examination of pregnancy tissue.

GTN can develop after a molar pregnancy, miscarriage, ectopic pregnancy, abortion or full-term pregnancy. Depending on where abnormal cells are growing, symptoms may include ongoing vaginal bleeding, abdominal pain, coughing, breathlessness or severe headaches. Some people have no symptoms and are diagnosed through hCG monitoring.

- Vaginal bleeding during or after pregnancy
- Severe or persistent nausea and vomiting
- Pelvic discomfort, pressure or swelling
- A uterus that is larger or smaller than expected
- Passage of fluid-filled, grape-like sacs from the vagina
- Symptoms of an overactive thyroid, such as shaking or a racing heartbeat

Causes and risk factors

GTD usually begins because of an error when an egg is fertilised, creating an abnormal set of chromosomes.

In most complete molar pregnancies, an egg without working maternal chromosomes is fertilised. Genetic material from the sperm is then copied, or the egg is fertilised by two sperm. In a partial mole, an egg is usually fertilised by two sperm, producing too many chromosomes.

This fertilisation error is generally random. It is not caused by exercise, sex, stress, contraception or something you ate.

Factors linked with a higher chance of molar pregnancy include having had one before and becoming pregnant at the younger or older ends of the reproductive age range. Having a risk factor does not mean GTD will occur.

Very rarely, repeated molar pregnancies are linked to inherited gene changes, including changes in NLRP7 or KHDC3L. A specialist may discuss genetic assessment if molar pregnancies recur.

Diagnosis

An ultrasound may show abnormal tissue in the uterus, often with fluid-filled spaces. A complete mole may have no embryo or fetus. A partial mole can be harder to recognise because it may resemble an early pregnancy loss.

A blood test measures hCG. This hormone normally rises during pregnancy, but it can be unusually high in GTD. A single result cannot usually confirm the condition because hCG levels also change in healthy pregnancies and after pregnancy loss.

When pregnancy tissue is removed, a laboratory examines it under a microscope. This is called histopathology and helps confirm a molar pregnancy. Further testing may distinguish complete and partial moles.

After a molar pregnancy, regular blood or urine hCG tests track whether the level returns to normal. A level that stops falling, starts rising or remains detectable can suggest GTN. The specialist team interprets the pattern rather than relying on one test.

If GTN is suspected, testing may include blood tests and imaging such as a pelvic ultrasound, chest X-ray, CT scan or MRI scan. These show where the condition is and help determine its risk category. GTN is classified using its location and clinical features that predict response to treatment.

Treatment and management

A molar pregnancy is usually removed from the uterus by suction evacuation. Tissue is gently removed through the cervix and sent for laboratory examination.

Medication to empty the uterus may be used in selected situations, although surgery is often preferred because it removes tissue promptly and provides a sample for diagnosis. A

hysterectomy, which removes the uterus, is rarely needed but may be considered in specific circumstances.

After treatment, hCG monitoring is essential. The schedule and length of follow-up depend on the type of mole, how quickly hCG becomes normal and the specialist centre's protocol.

If hCG does not return to normal, treatment for GTN may be needed. Lower-risk GTN is commonly treated with one chemotherapy medicine. Higher-risk disease generally requires a combination. Blood tests and scans are used to check the response.

Placental-site and epithelioid trophoblastic tumours may respond less well to standard chemotherapy. Surgery, often including hysterectomy, can therefore be more important. Decisions consider where the tumour is, whether it has spread and whether preserving fertility is possible.

You will usually be advised not to become pregnant during hCG follow-up. A new pregnancy raises hCG and makes results difficult to interpret. Your specialist team can explain when monitoring is complete and discuss suitable contraception.

Treatment may also include medicines for nausea, pain relief, blood transfusion for major blood loss and emotional support. People with GTN are usually managed through an experienced specialist centre.

Complications

A molar pregnancy can cause heavy bleeding, anaemia and, less commonly, thyroid problems or early pre-eclampsia. Rarely, abnormal tissue can grow through the uterine wall.

The main concern after a molar pregnancy is persistent GTN. Some forms can spread through the bloodstream, most often to the lungs. Choriocarcinoma can grow quickly but is often very sensitive to chemotherapy.

Chemotherapy can cause tiredness, nausea, mouth soreness, hair loss or changes in blood cell counts. Effects depend on the medicines used. Your treatment team will monitor for infection and other complications.

Pregnancy loss and cancer-related treatment can also affect emotional wellbeing, relationships and plans for another pregnancy. Grief may be complicated by repeated tests after the pregnancy has ended.

Prevention

Most GTD cannot be prevented because the fertilisation error happens by chance. There is no proven diet, supplement or behaviour that prevents a molar pregnancy.

If you have had GTD before, early contact with your maternity or specialist team during a future pregnancy allows timely ultrasound and hCG testing. This does not prevent recurrence but can identify problems early.

People with repeated molar pregnancies may be offered genetic assessment. If an inherited form is found, a fertility specialist can explain reproductive options.

Living with it and what to expect

Physical recovery after removal of a molar pregnancy may take days to weeks, but hCG follow-up lasts longer. You may continue to have appointments without symptoms. Keeping them helps confirm that no active cells remain.

Most people need no further treatment after a molar pregnancy. If GTN develops, treatment depends on its type, location and response. hCG often provides an early sign that treatment is working.

Periods may be irregular after the pregnancy ends or during chemotherapy. Fertility is usually preserved after uterine evacuation and many chemotherapy treatments. A hysterectomy prevents carrying a future pregnancy but does not always remove the ovaries or cause immediate menopause.

Once your specialist team confirms that follow-up is complete, future pregnancies are usually possible. An early ultrasound may be recommended. Pregnancy tissue or hCG may also be checked afterward according to the specialist centre's practice.

Emotional recovery may take longer than physical recovery. Anniversaries, follow-up tests and future pregnancies can bring back anxiety or grief. Specialist nurses, counselling services and pregnancy-loss support organisations may help.

Long-term outlook is very good for most molar pregnancies and common forms of GTN. Placental-site or epithelioid tumours, widespread disease and disease diagnosed long after pregnancy can be harder to treat. Your outlook depends on the exact type and stage.

When to get medical help

Contact your pregnancy care team promptly if you are pregnant and have vaginal bleeding, severe vomiting or pelvic pain. These symptoms often have causes other than GTD, but they

still need assessment.

During follow-up, contact your specialist team if bleeding returns, symptoms worsen or you think you may be pregnant. Tell them if you cannot attend an hCG test so another plan can be made.

Seek urgent medical help for:

Heavy bleeding with fainting, severe breathing difficulty, a seizure or loss of consciousness is an emergency. Call your local emergency number.

- Heavy bleeding, especially if you feel faint, weak or confused
- Severe or rapidly worsening abdominal or pelvic pain
- A new severe headache, weakness, seizure or loss of consciousness
- Coughing up blood, chest pain or sudden shortness of breath
- Fever or signs of infection while receiving chemotherapy

Common questions

Is gestational trophoblastic disease cancer?

Not always. A molar pregnancy is an abnormal pregnancy-related growth, not the same as invasive cancer. GTN includes conditions that can invade nearby tissue or spread elsewhere, so they are treated as tumours. Most respond very well to specialist treatment.

Can a molar pregnancy become a healthy baby?

No. A complete mole has no developing baby. A partial mole may contain fetal tissue, but the chromosome changes mean it cannot become a healthy pregnancy.

Will I need chemotherapy after a molar pregnancy?

Most people do not. Chemotherapy is considered when hCG does not fall normally, rises again or testing shows another form of GTN. Your hCG pattern and other test results guide this decision.

Can I get pregnant again afterward?

Many people can have a healthy pregnancy after follow-up is complete. You will usually be asked to avoid pregnancy while hCG is being monitored because pregnancy raises hCG. Discuss the timing of another pregnancy with your specialist team.

Can GTD happen after a normal birth or miscarriage?

Yes. GTN can rarely appear after a miscarriage, ectopic pregnancy, abortion or full-term

pregnancy. Unexplained ongoing bleeding after any pregnancy should be assessed.

Why do I still need blood tests when I feel well?

Small amounts of remaining trophoblastic tissue may not cause symptoms. hCG testing can detect continuing activity early and show whether treatment is needed.

Sources

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