CONDITION

Sertoli-leydig cell tumor

A Sertoli-Leydig cell tumor is a rare ovarian growth that can produce male-type hormones and is usually treated with surgery.

WHAT IT IS
Rare ovarian sex cord-stromal tumor

BODY SYSTEM
Ovaries and reproductive system

MAIN SYMPTOMS
Irregular periods, excess facial hair, acne, lower voice

WHAT CAUSES IT
Usually unknown; some linked to inherited DICER1 changes

HOW IT IS DIAGNOSED
Surgical removal and examination under a microscope

MAIN TREATMENT
Surgery, sometimes followed by chemotherapy

CAN IT BE CURED?
Sometimes - early localized tumors are often removed completely

IS IT AN EMERGENCY?
Sometimes - sudden severe pelvic pain or heavy bleeding

LONG-TERM OUTLOOK
Often favorable when found early; advanced disease is harder to treat

Overview

A Sertoli-Leydig cell tumor is a rare type of ovarian tumor. It begins in the ovary's sex cord and stromal cells, which help support egg cells and make hormones.

The tumor contains cells that resemble Sertoli and Leydig cells, which are normally associated with the testes. This does not mean that someone with the tumor has testes or has changed sex.

Some Sertoli-Leydig cell tumors make unusually high amounts of androgens. Androgens, including testosterone, are often called "male hormones," but everyone naturally has them. High levels can cause facial hair growth, acne, missed periods, a lower voice, or other changes known as virilization.

Not every tumor produces hormones. Some are found because they cause pelvic pain or swelling, while others are discovered during an examination or scan for another reason.

These tumors can occur at any age but are more often diagnosed in children, teenagers, and younger adults than many other ovarian tumors. Most involve one ovary. Some are cancerous and can spread, but many are found while still limited to the ovary.

Symptoms

Symptoms depend on whether the tumor produces hormones and how large it becomes. They may develop over several months.

Signs of increased androgen levels can include:

Some changes, such as acne and irregular periods, have many more common causes. Having one of these symptoms does not mean that you have an ovarian tumor. A new combination of symptoms, especially if they progress quickly, deserves medical assessment.

A tumor that does not produce noticeable hormones may cause lower abdominal or pelvic pain, a feeling of pressure, bloating, or an increase in abdominal size. A large tumor may press on the bladder or bowel, causing frequent urination or constipation.

Less commonly, abnormal vaginal bleeding can occur. Some tumors cause no clear symptoms.

- Periods becoming irregular or stopping
- New or rapidly increasing facial or body hair
- Acne or oily skin
- Scalp hair thinning
- A deeper voice
- Increased muscle definition
- Enlargement of the clitoris

Causes and risk factors

In most cases, it is not clear why a Sertoli-Leydig cell tumor develops. Lifestyle, diet, sexual activity, and contraceptive use have not been shown to cause it.

Some tumors are associated with a change in a gene called DICER1 . This gene helps cells control how other genes are used. A harmful DICER1 change may occur only within the tumor, meaning it is not inherited. In other people, the change is present throughout the body and can

be passed through a family.

An inherited DICER1 change can increase the risk of several uncommon tumors, including tumors affecting the ovaries, lungs, kidneys, thyroid, or brain. Most people with a DICER1 change do not develop every associated condition.

Because of this connection, someone diagnosed with a Sertoli-Leydig cell tumor may be offered genetic counseling and testing. A genetic counselor can explain what testing can and cannot show, as well as what a result could mean for biological relatives.

Diagnosis

Assessment usually begins with a discussion of symptoms, menstrual changes, and family medical history. A pelvic or abdominal examination may identify swelling or a mass, although smaller tumors may not be felt.

Blood tests may measure testosterone and other hormones. If testosterone is high, additional tests can help determine whether it is coming from an ovary or another source, such as an adrenal gland. Blood tests may also check general health and possible tumor markers, although no single blood test confirms this tumor.

An ultrasound is commonly used to examine the ovaries. It can show the size and appearance of a mass and whether it contains solid areas, fluid-filled areas, or both. MRI or CT scans may provide more detail or look for signs that the tumor has spread.

The diagnosis is confirmed by removing the tumor and examining its cells under a microscope. A specialist pathologist determines whether it is a Sertoli-Leydig cell tumor and describes features such as:

The tumor is also assigned a stage. Stage I means it is limited to the ovary or ovaries. Higher stages indicate spread within the pelvis, abdomen, lymph nodes, or more distant areas. The stage and microscopic features guide treatment and help estimate the chance of recurrence.

Because this tumor is uncommon, review by a pathologist experienced in ovarian sex cord-stromal tumors may be useful.

- How mature or abnormal the cells appear, called differentiation
- Whether unusual tissue types are present, called heterologous elements
- Whether the tumor has a retiform, or network-like, pattern
- Whether the tumor has ruptured or spread outside the ovary

Treatment and management

Surgery is the main treatment. The operation usually removes the affected ovary and its fallopian tube. The surgeon also checks the abdomen and pelvis for evidence of spread and may take fluid or tissue samples for staging.

For a tumor confined to one ovary, it may be possible to leave the other ovary and the uterus in place. This is called fertility-sparing surgery because pregnancy may remain possible. Whether it is suitable depends on the tumor's stage, appearance, and other individual factors.

More extensive surgery may be appropriate if the tumor has spread, involves both ovaries, or occurs after menopause. The aim is to remove as much visible tumor as safely possible.

Surgery alone may be enough for an early-stage tumor with favorable microscopic features. Chemotherapy may be discussed for tumors that have spread or have features linked to a higher risk of recurrence, such as poor differentiation or certain unusual tissue elements. Treatment commonly uses a combination of chemotherapy medicines, but the most suitable approach is decided by a specialist team.

Evidence is limited because Sertoli-Leydig cell tumors are rare. Recommendations may therefore be based on small studies, tumor registries, and experience with related ovarian tumors. A clinical trial may be an option for advanced or recurrent tumors.

After treatment, follow-up may include examinations, imaging, and blood tests. If testosterone or another marker was high before surgery, repeating that test can help monitor the response and look for recurrence.

Complications

A cancerous tumor can grow into nearby tissue or spread elsewhere in the abdomen. Spread to more distant parts of the body is less common but can occur, particularly with advanced or poorly differentiated tumors.

The tumor may return after treatment. Recurrence risk is influenced by its stage, whether it ruptured, how abnormal the cells appeared, and whether all visible tumor could be removed.

A large ovarian tumor can occasionally twist the ovary and its blood supply. This is called ovarian torsion and causes sudden, severe pelvic pain, often with nausea or vomiting. A tumor can also rupture and cause pain or internal bleeding.

Hormone-related changes often improve after the tumor is removed. Periods may restart, and acne or excess hair may lessen gradually. Some changes, particularly a deeper voice or clitoral enlargement, may not fully reverse.

Removing one ovary does not usually cause menopause if the remaining ovary works normally. Removing both ovaries causes immediate menopause and loss of natural fertility. Chemotherapy may also affect fertility, depending on the medicines used and the person's age.

Prevention

There is no proven way to prevent a Sertoli-Leydig cell tumor. It is not known to result from everyday behaviors, so it should not be viewed as something a person caused.

An inherited DICER1 change also cannot be prevented. If one is found, genetic counseling can help relatives understand whether testing is appropriate. Surveillance may help detect certain DICER1-associated tumors earlier, but it cannot guarantee that a tumor will be prevented.

Living with it and what to expect

Many Sertoli-Leydig cell tumors are diagnosed while limited to one ovary. When an early tumor can be completely removed, long-term control is often possible. Tumors that have spread or have aggressive microscopic features are harder to treat and may require chemotherapy or further surgery.

Follow-up is usually closer during the first few years because many recurrences occur during that period. Longer-term monitoring may still be advised. Your follow-up plan may include symptom reviews, physical examinations, hormone blood tests, and imaging based on the original tumor.

If one ovary and the uterus remain, periods and ovulation may return after treatment. Many people can still become pregnant, although fertility cannot be guaranteed. A fertility specialist can discuss egg or embryo freezing when treatment could affect both ovaries or when chemotherapy is being considered.

Physical changes caused by excess androgens may take time to settle. Hair growth can be managed with usual cosmetic or dermatology treatments after the tumor has been addressed. Persistent voice changes may benefit from assessment by a voice therapist.

Genetic testing can bring uncertainty about personal and family health. Genetic counseling can help put the result into context and explain any suggested screening without assuming that another tumor will develop.

When to get medical help

Arrange a routine medical appointment if you develop new or rapidly progressing facial hair, acne, scalp hair loss, a lower voice, missed periods, persistent bloating, or ongoing pelvic discomfort. These symptoms usually have causes other than a Sertoli-Leydig cell tumor, but they should be assessed.

Contact your treatment team promptly after treatment if previous hormone-related symptoms return or you develop persistent abdominal swelling, pelvic pain, unexplained weight loss, or a new lump.

Seek urgent medical care for sudden severe pelvic or abdominal pain, especially with nausea or vomiting. This can occur if an ovary twists or a tumor ruptures.

Seek emergency help for heavy bleeding with fainting, severe weakness, difficulty breathing, chest pain, confusion, or rapidly worsening pain.

Common questions

Is a Sertoli-Leydig cell tumor cancer?

Some are cancerous, while others behave in a less aggressive way. The stage, degree of differentiation, and other microscopic features help estimate its behavior. Even when the tumor appears confined to an ovary, follow-up remains important.

Can a Sertoli-Leydig cell tumor be cured?

A tumor found early and completely removed may be cured with surgery. Cure is less certain if it has spread, ruptured, or returned. Additional treatment may still control advanced or recurrent disease.

Does it cause high testosterone?

It can. Many of these tumors produce testosterone or other androgens, but some do not. High testosterone can lead to missed periods, facial hair, acne, scalp hair loss, and voice changes.

Can I get pregnant after treatment?

Pregnancy may remain possible if the uterus and one working ovary are preserved. Fertility can also be affected by age, chemotherapy, previous fertility problems, or the need to remove both ovaries.

Is it inherited?

Most cases are not clearly inherited. However, some are connected to an inherited DICER1 gene change. Genetic counseling and testing can determine whether this may apply to you and

whether relatives could benefit from information or testing.

Can the tumor come back?

Yes, recurrence is possible, particularly when the original tumor had spread or had higher-risk microscopic features. Follow-up visits and, when useful, hormone tests or scans are intended to detect concerning changes.

Sources

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