CONDITION

Paroxysmal supraventricular tachycardia

Paroxysmal supraventricular tachycardia causes sudden episodes of an unusually fast heartbeat

WHAT IT IS
Sudden fast heart rhythm starting above the lower chambers

BODY SYSTEM
Heart and circulation

MAIN SYMPTOMS
Racing heartbeat, dizziness, breathlessness, chest discomfort

WHAT CAUSES IT
An abnormal electrical circuit in the heart

HOW IT IS DIAGNOSED
ECG during an episode or ambulatory heart monitoring

MAIN TREATMENT
Vagal manoeuvres, medicines, or catheter ablation

CAN IT BE CURED?
Sometimes - ablation can eliminate the electrical circuit

IS IT AN EMERGENCY?
Sometimes - with fainting, chest pain, or severe breathlessness

LONG-TERM OUTLOOK
Usually manageable, with many people living normally

Overview

Paroxysmal supraventricular tachycardia, or PSVT, is a type of unusually fast heart rhythm. "Paroxysmal" means that episodes begin and end suddenly. "Supraventricular" means that the rhythm starts above the heart's lower pumping chambers, called the ventricles.

During an episode, the heart often beats very quickly and regularly. It may feel as though it changes from normal speed to racing in a single beat. An episode can last seconds, minutes, or sometimes hours before stopping.

The heartbeat is controlled by electrical signals. In PSVT, a signal may repeatedly travel around an extra or unusually arranged electrical pathway. This creates a loop that makes the upper parts of the heart activate rapidly.

Several rhythms can cause PSVT. The most common involve the heart's electrical junction, called the atrioventricular or AV node. These include AV nodal re-entrant tachycardia and AV re-entrant tachycardia. A less common cause is a rapid rhythm arising from a small area in an upper chamber.

PSVT can occur in people without structural heart disease. Although episodes may be uncomfortable or frightening, the condition is often manageable. Assessment still matters because other rhythm problems can cause similar symptoms, and treatment choices depend on the rhythm involved.

Symptoms

A PSVT episode usually starts abruptly. You may be able to remember the exact moment your heart began racing. It often ends just as suddenly.

Symptoms may include:

Some people mainly notice a pulse in the neck. This can happen when the upper and lower heart chambers contract at almost the same time.

Symptoms differ between people and between episodes. A person may have brief, mild events for years, while another may have longer episodes that interfere with daily activities. Fainting is less common and needs prompt medical assessment.

A fast heartbeat can also result from exercise, fever, dehydration, anaemia, an overactive thyroid, medication, or another abnormal rhythm. Symptoms alone cannot confirm PSVT.

- A rapid, regular, pounding heartbeat
- Fluttering or pounding in the chest or neck
- Light-headedness or dizziness
- Shortness of breath
- Chest pressure or discomfort
- Weakness, sweating, or nausea
- Anxiety during the episode
- Fainting or nearly fainting

Causes and risk factors

PSVT usually results from an electrical circuit that allows a signal to circle repeatedly through the heart. The heart muscle itself may otherwise be healthy.

In AV nodal re-entrant tachycardia, there are two electrical routes through or near the AV node. A carefully timed early heartbeat can start a repeating loop between them.

In AV re-entrant tachycardia, the loop uses an additional electrical connection between the upper and lower chambers. This is sometimes called an accessory pathway. Wolff-Parkinson-White syndrome is one condition involving an accessory pathway, although not everyone with PSVT has this syndrome.

These electrical arrangements are often present from birth, but PSVT is not usually inherited in a simple or predictable way. It may not cause symptoms until adolescence or adulthood.

An episode may start without a clear reason. Possible triggers include:

These factors can trigger an episode in someone who already has the electrical circuit. They do not necessarily create the underlying condition.

PSVT can affect people of different ages. It may also occur during pregnancy, when changes in blood volume, hormones, and heart rate can make rhythm episodes more likely. Previous heart surgery and some congenital heart conditions can also affect the heart's electrical pathways.

- Physical exertion or lack of sleep
- Emotional stress
- Alcohol
- Caffeine or other stimulants like methylphenidate or lisdexamfetamine
- Nicotine
- Some cold medicines or recreational drugs
- An early extra heartbeat

Diagnosis

An electrocardiogram, or ECG, records the heart's electrical activity. An ECG taken during symptoms can show whether the rhythm is PSVT and may help identify its type.

Because episodes come and go, a standard ECG between episodes may be normal. Longer monitoring may be needed. Options include a portable monitor worn continuously for a day or more, an event monitor used over a longer period, or a small implanted monitor for infrequent unexplained symptoms.

Recording when symptoms start, how long they last, and what you were doing can help match

your experience to the monitor results. A smartwatch or personal ECG device may capture useful information, but its recording should be reviewed rather than used to make the diagnosis by itself.

Other tests may include blood tests for thyroid problems, anaemia, or changes in body salts. An echocardiogram uses ultrasound to examine the heart's structure and pumping function. These tests do not usually confirm PSVT, but they may identify related problems or other causes of a fast heartbeat.

An electrophysiology study may be considered when the diagnosis remains uncertain or catheter treatment is planned. During this procedure, thin wires passed through a blood vessel record electrical signals from inside the heart. The study can locate the pathway responsible for the rhythm.

Treatment and management

Treatment depends on how often episodes happen, how long they last, their effect on your life, and the exact rhythm involved. Rare, brief episodes without concerning symptoms may only need observation and a plan for what to do if one occurs.

Certain physical actions called vagal manoeuvres can slow electrical conduction through the AV node. One example is bearing down in a controlled way, similar to straining during a bowel movement. A healthcare professional can show you an appropriate technique and explain when to use it.

Do not press or massage the arteries in your neck yourself. This is not a suitable home manoeuvre because it can cause harm in some people.

If an episode continues, treatment in a medical setting may include a fast-acting medicine such as adenosine. It briefly interrupts conduction through the AV node and can stop common forms of PSVT. The effects are short-lived, but people may briefly experience flushing, chest pressure, or a strange sensation.

Other medicines that slow the heart or affect its rhythm may be used when appropriate. If the circulation becomes unstable, synchronized electrical cardioversion can quickly restore a normal rhythm. This delivers a controlled electrical shock timed to the heartbeat.

For repeated episodes, longer-term options include medicines such as beta blockers or certain calcium-channel blockers. The choice must account for the type of rhythm, other medical conditions, pregnancy, and possible side effects.

Catheter ablation can offer a lasting solution for many people. During the procedure, a specialist guides catheters into the heart, identifies the abnormal circuit, and treats a very

small area with heat or freezing energy. The aim is to interrupt the circuit while preserving normal electrical conduction. As with any invasive procedure, ablation has risks, which should be discussed alongside its expected benefits.

Complications

Most PSVT episodes do not damage the heart. Complications are more likely when the rate is very fast, episodes last a long time, or another heart condition is present.

Possible complications include fainting and injury from a fall. A prolonged rhythm can also lower blood pressure or worsen chest pain, breathlessness, or heart failure in someone with underlying heart disease.

Frequent or nearly continuous tachycardia can occasionally weaken the heart muscle. This is called tachycardia-induced cardiomyopathy. Heart function may improve when the abnormal rhythm is controlled.

PSVT can also affect quality of life. Unpredictable episodes may lead to worry about driving, exercising, working, travelling, or being alone. A clear action plan and effective treatment can reduce this burden.

Prevention

The electrical pathway that causes PSVT usually cannot be prevented through lifestyle changes. It may have been present since birth, even if symptoms appeared much later.

You may be able to reduce episodes by noticing and avoiding personal triggers. Keeping a record of sleep, stress, alcohol, caffeine, medicines, and episode timing can help reveal a pattern. Not everyone has an identifiable trigger, and avoiding every possible trigger is neither necessary nor guaranteed to stop PSVT.

Check labels on stimulant-containing cold remedies or supplements, particularly if you have noticed a connection with palpitations. Do not stop prescribed medicine without medical advice.

Catheter ablation is the main treatment intended to remove the underlying electrical circuit rather than only prevent individual episodes.

Living with it and what to expect

PSVT often follows a stop-and-start course over months or years. Some people have only occasional brief episodes. Others notice that episodes become more frequent, longer, or harder to stop. The pattern can also remain stable or improve for long periods.

Between episodes, the heart rhythm and everyday activities may be completely normal. Many people can work, travel, exercise, and have children. Restrictions are not automatically needed, but fainting or severe symptoms may affect activities such as driving or working at height until the cause is assessed and controlled.

It can help to keep an episode record. Note the start and finish time, pulse if available, symptoms, possible triggers, and what helped. Bring rhythm recordings from a wearable device to appointments when possible.

Routine follow-up is appropriate if episodes are becoming more frequent, lasting longer, disrupting sleep or daily life, or no longer responding to the approach you were taught. Follow-up is also important if medicines cause side effects or you want to discuss ablation.

Treatment can often reduce or eliminate episodes, but no individual course can be promised. If ablation successfully interrupts the circuit, some people have no further PSVT. Others may need repeat assessment because symptoms return or another rhythm is responsible.

When to get medical help

Arrange a routine medical appointment if you have repeated episodes of a fast heartbeat, even if they stop on their own. Assessment is also appropriate for a first unexplained episode, especially if you have heart disease, are pregnant, or have a family history of sudden cardiac death.

Seek prompt medical advice if an episode lasts longer than usual, will not stop with the method you were taught, or is accompanied by increasing weakness or breathlessness.

Call emergency services if a rapid heartbeat occurs with:

Do not drive yourself for emergency care. If severe symptoms occur, sit or lie down to reduce the chance of injury while help is arranged.

- Fainting or inability to stay awake
- Severe or persistent chest pain
- Severe trouble breathing
- New confusion, weakness, or difficulty speaking
- Signs of shock, such as cold clammy skin or marked collapse

Common questions

Is PSVT dangerous?

PSVT is often not life-threatening, especially in an otherwise healthy heart. However, a very fast or prolonged episode can lower blood pressure and cause fainting, chest pain, or severe breathlessness. Those symptoms require urgent or emergency assessment.

How can I stop a PSVT episode?

A healthcare professional may teach you a vagal manoeuvre, such as a controlled bearing-down technique. If this does not work or symptoms are concerning, medical treatment may be needed. Do not massage your neck or take extra medicine unless you have been specifically instructed to do so.

Can PSVT be cured permanently?

Catheter ablation can eliminate the abnormal circuit in many people and is considered a potentially curative treatment. Whether it is suitable depends on the rhythm type, symptom burden, personal preference, and procedure risks.

Is PSVT the same as a panic attack?

No. Both can cause a racing heart, breathlessness, and anxiety, but PSVT is an abnormal electrical rhythm. Anxiety may follow the sudden heartbeat rather than cause it. An ECG recorded during symptoms helps tell the difference.

Can I exercise if I have PSVT?

Many people with PSVT can exercise. If exertion triggers episodes, or if you develop fainting, chest pain, or marked breathlessness, stop and seek medical assessment before returning to strenuous activity. Advice may differ when another heart condition is present.

Is PSVT the same as SVT?

SVT is a broad term for fast rhythms starting above the ventricles. PSVT describes SVT episodes that begin and end suddenly. Clinicians may use the terms interchangeably when discussing common re-entrant rhythms.

Sources

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