CONDITION

Mitchell disease

Mitchell disease is a rare condition that causes episodes of burning pain, warmth, and redness, usually in the feet or hands.

WHAT IT IS
Rare pain condition causing red, hot, burning skin

BODY SYSTEM
Skin, nerves, and blood circulation

MAIN SYMPTOMS
Burning pain, redness, warmth, swelling

WHAT CAUSES IT
Often unknown; sometimes inherited or linked to another condition

HOW IT IS DIAGNOSED
Clinical pattern; tests exclude mimics and identify causes

MAIN TREATMENT
Trigger control, safe cooling, medicines, and treating underlying conditions

CAN IT BE CURED?
Sometimes - treating an underlying cause can stop symptoms

IS IT AN EMERGENCY?
Sometimes - fever with spreading redness may signal serious infection

LONG-TERM OUTLOOK
Often long-term, with unpredictable flares and uneven treatment response

Overview

Mitchell disease is an older name for erythromelalgia . It is a rare pain condition in which an affected area becomes hot, red, and intensely painful. The feet are affected most often, but symptoms can occur in the hands, legs, arms, ears, or face.

Symptoms usually come in episodes called flares. Heat, exercise, standing, or tight footwear may bring on a flare. Cooling the area often helps, but extreme cooling can injure the skin.

The condition appears to involve abnormal communication between small nerves and blood vessels. These nerves normally help control pain, temperature, and blood flow near the skin. When they do not work normally, a person may feel burning pain while the skin becomes warm and flushed.

Mitchell disease may occur by itself. This is called primary erythromelalgia. It can also develop because of another medical condition or, less commonly, a medicine. This is called secondary erythromelalgia.

Symptoms can affect walking, sleep, school, work, and mental wellbeing. Getting the right diagnosis matters because some underlying causes are treatable.

Symptoms

The main symptom is burning pain with visible warmth and redness. A flare may begin as tingling, itching, or mild discomfort before becoming more painful.

Common features include:

Both sides of the body are often affected, but one foot or hand may be worse. Secondary erythromelalgia is sometimes limited to one side, particularly at first.

A flare may last from minutes to hours, and occasionally longer. Some people have symptoms only now and then. Others have daily or almost constant discomfort.

Common triggers include warm weather, heated rooms, exercise, standing, walking, tight shoes, thick bedding, stress, and alcohol. Triggers are not identical for everyone.

Between flares, the skin may look and feel normal. In more persistent cases, some redness, sensitivity, or swelling may remain.

- Burning, stinging, or throbbing pain
- Skin that looks red or darker than usual
- Noticeably increased skin temperature
- Swelling, sweating, or tenderness
- Symptoms that improve with gentle cooling or elevation

Causes and risk factors

The exact cause is often not found.

Some primary cases are linked to changes in a gene called SCN9A . This gene helps make sodium channels, which allow pain-sensing nerves to send electrical signals. Certain changes can make these nerves too easy to activate. The altered gene can run in families, although many people with primary erythromelalgia do not have an affected relative or an identified gene change.

Secondary erythromelalgia is associated with several other conditions. The strongest association is with certain bone marrow disorders that produce too many blood cells, including essential thrombocythaemia and polycythaemia vera. Symptoms can occasionally begin before the blood disorder is discovered.

Other reported associations include peripheral neuropathy, autoimmune disease, diabetes, and some neurological conditions. Certain medicines have also been linked to erythromelalgia-like symptoms. An association does not always prove that the condition or medicine caused the symptoms.

Mitchell disease can begin at any age. Inherited forms often start in childhood or adolescence, while secondary forms are more likely to appear in adults. It is not contagious and cannot spread from one person to another.

Diagnosis

There is no single test that confirms every case. Diagnosis is based mainly on the pattern of symptoms, the appearance and temperature of the skin during a flare, and the triggers that make symptoms better or worse.

Because the skin may look normal during an appointment, photographs taken during a flare can be useful. A record of triggers, duration, pain, and affected areas may also help show the pattern.

Blood tests commonly include a full blood count to check platelet and red blood cell levels. Additional tests may be used when symptoms suggest an autoimmune, metabolic, nerve, or bone marrow condition.

Genetic testing may be considered when symptoms began young, several relatives are affected, or an inherited form is strongly suspected. A negative genetic test does not rule out Mitchell disease.

Nerve tests or a skin biopsy may occasionally be used, but their findings are not specific enough to confirm the condition by themselves.

Other causes of a hot, red, painful limb need to be considered. These include skin infection, gout, a blood clot, complex regional pain syndrome, nerve damage, and circulation problems. A new symptom affecting only one limb should not automatically be assumed to be Mitchell disease.

Treatment and management

Treatment aims to reduce flares, control pain, protect the skin, and address any underlying cause. There is no single treatment that works for everyone, so medicines may need to be tried one at a time and reviewed carefully.

Trigger management can make symptoms easier to control. This may include choosing loose, breathable footwear, avoiding overheated rooms, pacing physical activity, and using lighter bedding. Complete avoidance of movement is not usually helpful because it can lead to weakness and reduced mobility.

Gentle cooling may provide relief. Options include a fan, a cool floor, a cool gel pack wrapped in cloth, or briefly exposing the area to cool air. Elevating an affected limb may reduce warmth and swelling.

Do not keep the skin in ice water or place ice directly on it. Repeated or prolonged cooling can cause cold injury, ulcers, infection, and damage from constantly wet skin. It may also lead to stronger rebound symptoms as the area warms again.

Medicines used for nerve pain may be considered. These include certain antiseizure medicines, antidepressants like sertraline or fluoxetine , or medicines that affect sodium channels. Local treatments applied to the skin, such as anaesthetic or capsaicin preparations, may help some people. Evidence is limited, and side effects often influence which option is suitable.

Aspirin can be particularly effective when erythromelalgia is caused by a platelet-related bone marrow disorder. It is not consistently effective for primary erythromelalgia and can cause serious side effects. Do not start aspirin without medical advice, especially for a child or teenager.

Treating an underlying condition or changing a suspected medicine may reduce secondary symptoms. A prescribed medicine should not be stopped without discussing it with the prescriber.

Care may involve dermatology, neurology, pain medicine, or haematology, which deals with blood conditions. Physiotherapy or occupational therapy can help maintain movement and find practical ways to manage school, work, footwear, and daily activities.

Complications

The condition itself does not usually damage major organs. However, repeated severe flares and unsafe cooling can lead to complications.

Skin may become cracked, waterlogged, ulcerated, or infected. Direct ice exposure can cause frostbite-like injury. Walking less because of pain may cause muscle weakness, joint stiffness, and loss of fitness.

Long-lasting pain can interfere with sleep, concentration, mood, relationships, and independence. Support for these effects is part of pain care and does not mean the symptoms are psychological.

If an underlying bone marrow disorder is present, it may carry its own risk of blood clots or bleeding. That risk comes from the blood disorder and needs separate monitoring.

Prevention

Mitchell disease usually cannot be prevented.

Inherited forms result from a gene change and are not caused by anything a parent did during pregnancy or childhood. Genetic counselling can explain inheritance and testing options when a disease-causing gene change is found in a family.

Secondary erythromelalgia cannot always be predicted. Finding and treating an associated condition may prevent symptoms from worsening or reduce future flares.

Once symptoms are present, recognising personal triggers and cooling safely may reduce their frequency or intensity. These steps manage the condition rather than prevent its underlying cause.

Living with it and what to expect

The course differs from person to person. Many people have a long-term pattern of flares separated by calmer periods. Symptoms may remain limited to the feet or hands, or gradually affect a wider area. The intensity can change over months and years.

Some secondary cases improve when the underlying condition is treated or a contributing medicine is changed. Primary and inherited forms are more likely to persist, although symptoms do not always worsen steadily. Treatment may provide meaningful relief even when it does not remove every flare.

A symptom diary can help identify patterns involving temperature, activity, footwear, food, alcohol, stress, sleep, and medicines. It can also show whether a treatment is making a useful difference.

Planning may involve access to a fan, flexible breaks, breathable shoes, or a cooler sleeping space. Keeping physically active within tolerable limits can reduce deconditioning. A physiotherapist can help when pain has made walking or exercise difficult.

Persistent pain can be exhausting. Pain-management programmes and psychological support

can teach coping and pacing skills alongside medical treatment. They are not substitutes for investigating physical symptoms.

When to get medical help

Arrange a routine appointment if you have repeated episodes of burning pain, warmth, and redness, particularly when they interfere with sleep, walking, work, or school. Medical review is also important if symptoms are new, mainly affect one side, or began after starting a medicine.

Seek prompt medical advice if:

Call emergency services for chest pain, severe difficulty breathing, fainting, confusion, or sudden weakness or speech difficulty. These are not typical flares and may indicate a separate emergency.

- The skin has developed a blister, ulcer, discharge, or increasing tenderness
- Redness is spreading or is accompanied by fever
- A limb suddenly becomes much more swollen or painful
- Symptoms change sharply from their usual pattern
- Cooling has caused numb, pale, hard, or damaged skin
- Pain is no longer manageable with the agreed plan

Common questions

Is Mitchell disease the same as erythromelalgia?

Yes. Mitchell disease is an older name for erythromelalgia. Most current medical information and clinical services use the term erythromelalgia.

Why do my feet become red and burning hot?

In Mitchell disease, small pain-sensing nerves and skin blood vessels do not regulate signals normally. This may cause burning pain and increased blood flow near the skin. However, infections, gout, blood clots, and other conditions can also cause a hot red foot, so new symptoms need assessment.

Does Mitchell disease go away?

It can improve, but it is often long-term. Secondary symptoms may settle when their underlying cause is treated. Primary or inherited forms often continue in a pattern of flares, although their frequency and severity may change.

How can I cool a flare safely?

Use moving cool air, a cool surface, or a wrapped cool pack for short periods. Keep the skin dry and check it regularly. Avoid direct ice, ice water, and prolonged soaking because these can damage skin without you noticing.

Is Mitchell disease inherited?

Some cases are inherited through changes in the SCN9A gene, but many are not. A family history, childhood onset, or similar symptoms in several relatives may lead to a discussion about genetic testing.

Will aspirin help?

Aspirin can work well when symptoms are linked to certain platelet-producing bone marrow disorders. It is much less reliable for other forms and may cause bleeding or other harm. It should only be used for this condition after medical assessment.

Sources

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