CONDITION

Gumma

A gumma is a destructive lump caused by long-standing syphilis infection that can affect skin, bone, or internal organs.

WHAT IT IS
Destructive inflammatory lump caused by late syphilis

BODY SYSTEM
Skin, bones, brain, and internal organs

MAIN SYMPTOMS
Painless lump, skin ulcer, bone pain, organ-specific problems

WHAT CAUSES IT
Long-standing infection with Treponema pallidum bacteria

HOW IT IS DIAGNOSED
Syphilis blood tests, biopsy, and site-specific imaging

MAIN TREATMENT
Penicillin antibiotics and management of tissue damage

CAN IT BE CURED?
Yes - infection clears, damage may remain

IS IT AN EMERGENCY?
Sometimes - breathing trouble or new neurological symptoms

LONG-TERM OUTLOOK
Usually good after treatment; established damage may persist

Overview

A gumma is a slowly growing area of inflammation caused by late-stage syphilis. Syphilis is an infection caused by the bacterium Treponema pallidum . A gumma is a condition resulting from that infection, rather than a separate infectious disease.

Gummas usually develop years after untreated or inadequately treated syphilis. They are uncommon where testing and effective antibiotics like amoxicillin or doxycycline are readily available.

A gumma can form in the skin, bones, liver, brain, or almost any other organ. It may look like a firm lump or develop a soft, damaged centre. A skin gumma can eventually break open and form an ulcer.

Under a microscope, a gumma contains an organised collection of immune cells. This is called granulomatous inflammation. Tissue in its centre may die, which is known as necrosis.

Gummas matter because they can damage nearby tissue and may resemble cancer, tuberculosis, a fungal infection, or an inflammatory disorder. Testing is needed to identify the cause. Treatment can cure the syphilis infection and often allows the gumma to heal, although scarring or organ damage may remain.

Symptoms

Symptoms depend mainly on where the gumma forms and what structures it presses on or damages. A gumma often grows slowly and may initially cause little discomfort.

A skin gumma may appear as a firm, rubbery lump. It may soften, break down, and become a deep ulcer with raised edges. These lesions can occur anywhere but have historically been described on the face, scalp, trunk, and legs.

A gumma in a bone may cause deep, persistent pain, tenderness, swelling, or weakening of the affected bone. Pain can be worse at night.

Other symptoms can include:

These symptoms have many possible causes. A lump or ulcer does not by itself mean that you have a gumma or syphilis.

- Abdominal discomfort or abnormal liver tests from liver involvement
- Headache, seizures, weakness, or personality changes from brain involvement
- Trouble swallowing or breathing from a lesion near the throat or airway
- Pain, blockage, bleeding, or reduced function in the affected organ

Causes and risk factors

A gumma results from long-standing infection with Treponema pallidum . It is one possible feature of tertiary syphilis, the late stage of the infection.

The tissue damage appears to be caused largely by the immune system's prolonged reaction to the bacterium. Gummas usually contain very few bacteria, which can make the organism difficult to find in a tissue sample.

The main risk factor is syphilis that was never treated or was not treated with an effective, completed course of antibiotics. This may happen when an earlier infection caused no

noticeable symptoms, was mistaken for another condition, or was lost to follow-up.

Having had syphilis before does not provide immunity. A person can become infected again after successful treatment.

A gumma is not inherited. Syphilis can pass from a pregnant person to a fetus, but this is infection during pregnancy, not genetic inheritance.

Diagnosis

Diagnosis usually combines your medical and sexual history, an examination, blood tests, imaging, and a biopsy. No single finding is always enough because a gumma can resemble several other conditions.

Syphilis blood testing generally uses two types of test. A nontreponemal test, such as RPR or VDRL, helps estimate disease activity and is used during follow-up. A treponemal test checks for antibodies that are more specific to syphilis. Treponemal tests often remain positive for life, even after successful treatment.

A biopsy removes a small sample from the lump or ulcer. A laboratory examines it for granulomatous inflammation, central tissue damage, cancer cells, and signs of other infections. Special stains, immune-based tests, or molecular tests may be used to look for T. pallidum . A negative result does not always exclude a gumma because few bacteria may be present.

Imaging depends on the location. An X-ray, CT scan, or MRI may show the size of the lesion, bone damage, or pressure on nearby structures.

Because a gumma is a form of tertiary syphilis, assessment may also include:

Doctors may also test for cancer, tuberculosis, fungal infection, or inflammatory disease before confirming the diagnosis.

- A detailed neurological, eye, and hearing examination
- HIV testing, as recommended for anyone diagnosed with syphilis
- A lumbar puncture to test the fluid around the brain and spinal cord
- Tests of the affected organ's function

Treatment and management

Penicillin is the preferred antibiotic treatment for tertiary syphilis. The exact regimen depends on whether the brain, spinal cord, eyes, or ears are involved. Treatment is normally planned

with an infectious-disease or sexual-health specialist because gummas are uncommon and may affect important organs.

If tests show no nervous-system involvement, treatment usually follows the regimen for tertiary syphilis without neurosyphilis. Brain, eye, or ear involvement requires a treatment approach that reaches the nervous system effectively.

People with a penicillin allergy may need specialist assessment. In some situations, including pregnancy or nervous-system involvement, a supervised process called desensitisation may be used so that penicillin can be given safely. This temporarily reduces the risk of an allergic reaction.

During the first day after treatment, some people develop fever, chills, headache, or muscle aches. This is called a Jarisch-Herxheimer reaction. It is caused by the body's response to dying bacteria and is not the same as a penicillin allergy. Medical advice is still appropriate if symptoms are severe or there are signs of an allergic reaction, such as facial swelling or difficulty breathing.

Surgery is not the main treatment for the infection. It may be needed to obtain a biopsy, relieve pressure, remove badly damaged tissue, or repair structural damage.

Follow-up blood tests check how the infection responds. A clinician may also repeat imaging or examine the affected area to confirm that the gumma is shrinking or healing.

Complications

Untreated gummas can progressively damage the tissue around them. Possible complications include scarring, chronic ulcers, bone destruction, reduced organ function, or pressure on nearby nerves and blood vessels.

A brain gumma can cause seizures, weakness, problems with balance, or changes in thinking and behaviour. A lesion near the airway can interfere with breathing. Damage to the liver or another internal organ may remain even after the infection has been cured.

Treatment often stops further injury, but it cannot always reverse damage that has already occurred.

Prevention

Gummas can usually be prevented by finding and treating syphilis before it reaches the tertiary stage. There is no vaccine against syphilis.

Testing is important after a possible sexual exposure, when a partner has been diagnosed, or when symptoms of early syphilis appear. Early syphilis may cause a painless sore, a body rash, swollen lymph nodes, or no obvious symptoms.

Condoms and other barriers reduce the chance of sexual transmission, but they do not fully protect skin that is not covered. Completing treatment, attending follow-up testing, and ensuring that relevant sexual partners are notified and assessed help prevent untreated infection and reinfection.

Syphilis testing during pregnancy is important because treatment can prevent infection from passing to the fetus. The timing of testing is based on local maternity guidance and individual risk.

Living with it and what to expect

After effective antibiotic treatment, a gumma may gradually shrink or heal over weeks to months. Skin ulcers may close but leave a scar. Bone or organ lesions can take longer to settle, and some structural damage may be permanent.

Follow-up often continues for months or longer. RPR or VDRL levels are compared with earlier results to check the response. A treponemal blood test may remain positive indefinitely and does not, by itself, mean that treatment failed.

Your day-to-day outlook will be influenced by the gumma's location and how much damage was present before treatment. Someone with a skin lesion may need wound and scar care. A person with bone, brain, or internal-organ involvement may need rehabilitation, pain care, repeat imaging, or follow-up with the relevant specialist.

Many people can return to their usual activities after treatment and recovery. Ongoing limitations are more likely when the gumma damaged nerves, bone, or an important organ.

A treated infection does not protect against future syphilis. New exposure can cause reinfection, so further testing may be needed if your risks change.

When to get medical help

Arrange a routine medical or sexual-health appointment if you have a persistent unexplained lump, a skin ulcer that is not healing, ongoing bone pain, or concerns about past syphilis that may not have been treated. These problems usually are not emergencies, but they should be assessed rather than watched indefinitely.

Seek urgent same-day care for:

Call emergency services for trouble breathing, a seizure, fainting, severe confusion, sudden weakness on one side, or difficulty speaking. These symptoms can have several causes, but they require immediate assessment.

Signs of a severe allergic reaction after treatment-including facial or tongue swelling, widespread hives, wheezing, or breathing difficulty-also require emergency care.

- New vision loss, eye pain, or marked changes in vision
- Sudden hearing loss or severe new balance problems
- A rapidly worsening neurological symptom
- Increasing redness, drainage, or fever around an ulcer

Common questions

Is a gumma cancer?

No. A gumma is an inflammatory lesion caused by late syphilis. However, it can look like cancer on an examination or scan. A biopsy and other tests are often needed to tell them apart.

Is a gumma contagious?

A gumma itself usually contains very few syphilis bacteria. Sexual transmission is mainly associated with the earlier stages of syphilis, especially when infectious skin or mucous-membrane lesions are present. Testing is still important because the person's full stage and infection history must be assessed. Relevant partners may also need testing.

Can a gumma go away with antibiotics?

It often shrinks or heals after effective syphilis treatment. Antibiotics stop the infection, but they cannot always reverse scarring, bone loss, nerve injury, or organ damage that has already developed.

Where can gummas occur?

They can form in almost any tissue. The skin, bones, and liver are recognised sites. Gummas can also occur in the brain and other internal organs, although this is uncommon.

Does a gumma always mean tertiary syphilis?

A true syphilitic gumma is considered a manifestation of tertiary syphilis. Other infections and inflammatory conditions can produce lesions that look similar, so the name should not be applied without appropriate testing.

Can a gumma come back after treatment?

A treated lesion may persist if it has become scarred or structurally damaged. Active disease is less likely to return after effective treatment, but treatment failure and reinfection must be considered if symptoms recur or follow-up blood tests do not improve as expected.

Sources

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