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## Cutaneous polyarteritis nodosa

Cutaneous polyarteritis nodosa (PAN) is a rare form of [vasculitis](#) (inflammation of blood vessels) that involves small and medium-sized arteries of the dermis and subcutaneous tissue i.e. the deeper layers of the skin. It is sometimes called periarteritis nodosa.

Although identical skin lesions are common in systemic PAN, cutaneous PAN should be considered a separate disease and distinguished from systemic PAN as the clinical course and management of these conditions differ from each other. PAN is a vasculitis that causes destructive inflammation of medium-sized muscular arteries of multiple systems including the liver, kidney, heart, lung, gastrointestinal tract, musculoskeletal and nervous systems. Systemic PAN is a potentially life-threatening form of vasculitis whereas cutaneous PAN usually runs a chronic but benign course.

### What is the cause of cutaneous PAN?

In many cases the cause is not known. However, in some cases it appears to be a hypersensitivity reaction to certain infections, particularly Group A [streptococcus](#), hepatitis B, Hepatitis C, Human Immunodeficiency virus, Parvovirus B19 (Fifth disease). There is an over-reaction of the immune system to the infection.

### What are the signs and symptoms of cutaneous PAN?

- Tender lumps appear under the skin. These usually measure between 4–15 mm in diameter.
- Infarcts in the skin present as purple or black patches or blood-filled blisters. They are dead areas of skin due to blocked blood vessels
- Blistering and ulceration may occur.
- Livedo reticularis can be seen as lesions radiate out in a "starburst" formation

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Lesions are most often found on the legs and feet. Other areas that may be affected include the arms, trunk, buttocks, and head and neck. They are most likely on pressure points such as the knees, back of the foot and lower leg.

In addition to the skin problems, patients may also have generalised symptoms such as malaise, fever, sore throat, and joint and muscle aches and pains. Neurological symptoms may also be present and include numbness, tingling, sensory disturbances, weakness, and absent reflexes.

## Diagnosis of cutaneous PAN

[Skin biopsy](#) of a typical lesion is often performed to make an accurate diagnosis of cutaneous PAN. A specimen showing panarteritis (inflammation of all blood vessels in the skin sample) is the only definitive proof of PAN.

Laboratory tests of blood samples are generally unhelpful in diagnosing or monitoring cutaneous PAN, as blood counts and chemistry are often normal. They are initially required to determine the cause of vasculitis or to exclude other organ involvement as occurs in systemic PAN.

## What is the treatment of cutaneous PAN?

Cutaneous PAN usually runs a chronic course lasting from months to years with exacerbations and remissions. Neurological symptoms and muscular aches and pains usually resolve over a matter of months whilst skin lesions take longer to heal.

Remissions may occur spontaneously or after treatment with [oral corticosteroids](#), cyclophosphamide or other immunosuppressive medications used to control the acute exacerbation and relieve pain. They can be stopped as symptoms become less severe or subside.

Non-steroidal anti-inflammatory drugs are also used and are suitable alternative first-line agents in patients when corticosteroids are contraindicated. Ulcerating skin lesions may be treated with bland topical preparations such as active manuka [honey](#) and covered with [special dressings](#) to improve healing. Occasionally skin grafts are advised but they may fail because of the damage to the blood vessels supplying nutrition to the skin.

If the PAN is caused by streptococcal infection, it is wise to remain on long term [penicillin](#) to prevent further attacks such as streptococcal tonsillitis or cellulitis.

Viral infections may sometimes respond to a course of an antiviral agent.

In a few cases, over time cutaneous PAN may progress to systemic PAN. Patients with cutaneous PAN should be followed-up regularly so that any signs of progress to the systemic form may be picked up early.

### Related information

#### References:

- Book: Textbook of Dermatology. Ed Rook A, Wilkinson DS, Ebling FJB, Champion RH, Burton JL. Fourth edition. Blackwell Scientific Publications.
- Khoo BP and Ng SK. Cutaneous Polyarteritis Nodosa: A Case Report and Literature Review. Ann Acad Med Singapore 1998; 27:868-72

#### On DermNet NZ:

- [Cutaneous vasculitis](#)
- [Skin signs of systemic disease](#)
- [Synthetic wound dressings](#)

#### Other websites:

emedicine, the online textbook

- [Polyarteritis nodosa](#)
- [Polyarteritis nodosa](#)

#### Books:

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DermNet does not provide an on-line consultation service.

If you have any concerns with your skin or its treatment, see a [dermatologist](#) for advice.

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