Keloid

Keloid is an overgrowth of scar tissue that develops around a wound. The cause is not known but it's more common in people who have darker skins. Various treatments are available. People prone to develop keloid should avoid piercings, tattoos and unnecessary surgery.

What is keloid?

Keloid is an overgrowth of the scar tissue that develops around a wound, usually after the wound has healed. A keloid scar is sometimes confused with a hypertrophic scar. However, keloid usually grows beyond the borders of the original wound whereas in a hypertrophic scar the tissue stays within the wound border.

When first coined in 1806, the original term was 'chéloïde', taken from the Greek word 'chele' which means crab's claw. This refers to the way the keloid grows sideways into the normal skin.

What causes keloid?

The exact cause is not known. It can develop after acne spots and boils, body piercings, burns, lacerations and surgical wounds. Infection increases the risk. There seems to be a problem with cells called fibroblasts which are responsible for the production of scar tissue (collagen). It is not know whether there is something wrong with the fibroblasts themselves or whether there is a problem with the chemicals which control their activity. Hormones, problems with the immune system and genetic factors have all been suspected of being involved. 'Genetic' means that the condition is passed on through families by special codes called genes. Each cell of your body contains chromosomes which are made up of many genes.

Who gets keloid?

Keloid scars are more common in people with darker skins, especially African-American races. The peak age is 10-30 years and keloids are less common at the extremes of age. Studies of African people have shown that 6-16 out of a hundred develop keloid. Half of people with keloid will have other members of the family who have also developed keloids.

What are the symptoms of keloid?

Keloid typically starts to develop about three months after the original skin damage although it can take up to a year. The first thing you will probably notice is that rubbery scar tissue starts growing beyond the borders of the original damage. It may become tender, itchy, painful or produce a burning sensation. Sometimes keloid develops without any apparent skin injury, although most people can identify a cause. The common areas are the breastbone, shoulder, earlobe and cheek. Keloid growing over a joint can restrict movement. In time, the original red colour changes to brown or becomes pale.

Growth continues for a few weeks to a few months. The growth is usually slow but occasionally there is rapid enlargement over a few months. Once they stop growing most keloid scars remain the same size or get smaller.
How is keloid diagnosed?
It is diagnosed by the medical history and the appearance of the skin.

What is the treatment for keloid?
A keloid scar may shrink over time but rarely disappears completely. You may feel you can live with a small scar which is tucked out of sight. However, if you are concerned about its appearance, several treatments are available. No treatment is one hundred percent effective and you may be offered a combination of methods.

Treatment options include:

**Steroids**
Most keloids respond to injection of a steroid called triamcinolone into the scar. Injections are given every 2-6 weeks until improvement is seen. Occasionally, injections can cause a network of surface veins to develop (telangiectasias), or lightening or thinning of the surrounding skin. Another method is to use steroid-impregnated tape which is applied to the scar for 12 hours a day.

**Pressure and/or airtight (occlusive) dressings**
A dressing which applies pressure and/or prevents air from coming into contact with the scar is used. The dressing must be used for 12-24 hours a day for many weeks. Preparations used are silicone as a gel or impregnated sheet, or polyurethane self-adhesive patches. Other products are available. For keloids on the earlobes (usually arising from piercings) compression earrings are recommended. They are usually used once the original keloid has been removed by surgery and have to be worn 24 hours a day.

**Surgery**
Removing the keloid scar by surgery can result in an even bigger scar, so you may be offered additional treatments such as steroid injections, occlusive or pressure dressings or radiotherapy. Careful surgical techniques, using as few stitches (sutures) as possible when closing the wound, help to reduce the risk of further keloid formation.

**Radiotherapy**
This has the risk of causing cancers and should be reserved for difficult cases in areas well away from internal organs (eg, the arm or leg but not the stomach or chest). Implanting tiny pieces of radioactive material or ‘seeds’ into the wound area (brachytherapy) after surgery for keloid is sometimes used.

**Cryotherapy**
Cryotherapy is the use of a probe to freeze tissue. It has been used alone or in combination with other treatments, especially steroid injections. In the early stage it may stop keloid from growing. It can cause pale areas at the site of treatment. Intrallesional cryotherapy uses a probe to freeze keloid tissue from the inside and this method is being explored.

**Laser treatment**
Lasers are often used to treat keloid. Pulsed dye lasers and Nd:YAG lasers are types reported to give the best results whilst having few side-effects. However, more research is needed to find out which types of lasers are most effective and how best to use them. Pulsed dye lasers are less effective on dark skin. In some cases, redness is reduced but not the size of the keloid. Carbon dioxide lasers are often used after steroid injections for hard to treat keloids on the back.

**Interferon therapy**
Interferon alfa is an antiviral medicine. It has been found to improve the effect of steroid injections but does not work very well on its own.
Cytotoxic medicines
These are medicines which slow down tissue growth and are usually used as anti-cancer treatments. Two types commonly used for keloid scars are 5-fluorouracil and bleomycin. They are injected into the scar and may be used alone or in combination with other treatments. You may get pain in the scar, pale areas and breakdown of the skin as side-effects of this treatment.

Retinoids
Usually used in acne, these have shown some improvement when applied to the surface of the keloid or injected into it. Doctors do not usually consider them as a first choice because they may not work as well as other treatments.

Can keloid be prevented?
If you are in an at-risk group or have already had a keloid you should avoid body piercing and tattoos. You should also steer clear of unnecessary operations such as cosmetic surgery, especially in those areas of the body where keloid is prone to develop. If you get acne, you should make sure it is treated effectively at an early stage so the spots do not scar. If you are identified as being at risk of keloid and need an operation, your surgeon may offer you dressings, steroid injections or other treatments to reduce the risk of keloid developing.

Further reading & references

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