

Acromegaly

Acromegaly is caused by an excess of growth hormone. The most obvious signs of acromegaly arise from the overgrowth of bones in the face, hands and feet causing facial disfigurement, large hands and feet. However, the changes occur so slowly that they go unnoticed for a long time.

Acromegaly develops after the person has reached adulthood. In children the same condition causes extreme tall stature (gigantism). People aged between 30 and 50 years are most commonly affected. About 1,000 people in Australia are estimated to have acromegaly.

A non-cancerous (benign) tumour on the pituitary gland is the most common cause. The pituitary gland, located in the brain, makes a number of hormones including growth hormone. Growth hormone promotes growth in childhood and in the adult it controls metabolism, muscle and bone mass.

Excessive amounts of growth hormone stimulate the growth of all body tissues. This effect is mediated by a growth factor called IGF-I which is produced in the liver.

Symptoms

The symptoms and signs of acromegaly can include:

- Swelling of soft tissue in the hands and feet (onset signs)
- Enlarged bones in the skull, face, jaw, hands and feet
- Joint pains
- Pins and needles in the hands
- Headaches
- Gaps forming between the teeth, which may cause a 'bad bite'
- Barrel chest
- Enlarged heart (cardiomegaly)
- Thick and oily skin and strong body odour
- Growth of skin 'tags'
- Overgrowth of hair
- Husky voice
- Enlarged tongue and lips
- Snoring or drooling while asleep
- Heavy sweating (hyperhidrosis)
- Vision changes, such as loss of peripheral (side) vision.

Complications of acromegaly

Without medical treatment, acromegaly can cause a range of complications including:

- Regularly stop breathing or choke while asleep (sleep apnoea)
- Arthritis
- Carpal tunnel syndrome
- Diabetes
- High blood pressure (hypertension)
- Heart disease
- Premature death.

Causes

A pituitary tumour (adenoma) is the commonest cause of acromegaly. The adenoma secretes excessive amounts of growth hormone. This affects many tissues of the body including the bones and skin.

The adenoma slowly enlarges and may press against the surrounding tissue, causing headaches. If the nerves to the eyes are compressed, this can cause vision impairment.

The hormone imbalance usually causes disturbances in other hormonal systems. For example, too much growth hormone can cause diabetes which occurs in up to one quarter of people with the condition. Affected women can have menstrual cycle irregularities.

Progress of the condition depends on tumour size

The progression of acromegaly depends on the secretion activity and size of the tumour. In general, acromegaly progresses faster and more aggressively in people who develop a pituitary tumour early in adult life. The cause of pituitary tumours is unknown. Without a known cause, it is impossible to predict or prevent acromegaly.

Other causes

Certain tumours in other organs, such as the lungs or pancreas, can very rarely cause acromegaly. These tumours either make growth hormone or make a chemical called growth hormone-releasing hormone (GHRH) that prompts the pituitary gland to make growth hormone.

Diagnosis

Acromegaly is difficult to diagnose in its early stages because the physical changes occur over many years. Following a suspicion of acromegaly based on history and physical examination, blood tests are required for confirmation of diagnosis.

- An IGF-I (a growth factor produced in the liver) measurement is the most reliable diagnostic test.
- A measurement of growth hormone is of limited value as its concentration fluctuates in blood.
- Imaging of the pituitary gland by CT or MRI scans is performed to determine the size and location of the adenoma.

Treatment

Treatment reduces the swelling of the soft tissue in the face, hands and feet but cannot reverse the effects on the bones. Treatment is aimed at removing the pituitary tumour, or reducing its activity. Options may include:

- **Drugs** – somatostatin analogues (trade names Sandostatin and Lanreotide) are effective in inhibiting the growth hormone secretion from the tumour and can also reduce tumour size. They may be used as the first line of treatment or may be used to control residual disease after surgery. A new drug called pegvisomant is a valuable addition – it works by blocking the action of growth hormone.
- **Surgery** – offers the only chance of cure from complete removal of the tumour. Success is dependent on the size, location of the tumour and surgical skill. Surgery is usually performed through the person's nose.
- **Radiation therapy** – is usually offered to control residual disease after surgery.

The doctor may choose one or more treatments depending on the circumstances and indications.

Ongoing tests

A person with acromegaly should have regular medical tests to monitor the condition. Tests may include an annual medical check-up and blood tests to measure growth hormone status.

Where to get help

- **Your doctor**
- **Endocrinologist (doctor that specialises in hormone problems)**
- **Australian Pituitary Foundation, Tel. 1300 331 807**

Things to remember

- **Acromegaly is a condition caused by an excess of growth hormone, which causes the overgrowth of bones in the face, hands and feet.**
- **A tumour on the pituitary gland is the most common cause of acromegaly.**
- **Modern day treatments are very effective.**

This page has been produced in consultation with, and approved by:

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