



# Medicine for Managers

Dr Paul Lambden BSc MB BS BDS FDSRCS MRCS LRCP DRCOG MHSM

## Cushing's Syndrome

**Cushing's Syndrome was first described by the American Neurosurgeon, Harvey Cushing (1869-1939) in 1932. He was a pioneer of brain surgery and developed many of the operating procedures in the treatment of brain disease. He first noted the development of abnormal areas of weight gain and stretch marks in some patients with disease of the pituitary gland (see below).**

Cushings Syndrome occurs when the body has too much of the hormone **cortisol**. It is a potentially serious condition if it is not diagnosed and treated.

- High blood pressure
- Headaches
- Osteoporosis

The excess cortisol may result in a variety of symptoms which include:

The condition may be accompanied by erectile dysfunction, diminished fertility and loss of libido.

- Weight gain associated with the deposition of fatty deposits around the waist and across the back. The classic locations are on the face ('moon face') and between the shoulders (buffalo hump).
- The development of **striae** (pronounced stry-ee) stretch marks which are purplish or pink in colour and which are commonly present on the abdomen, thighs, arms and breasts.
- Thin, fragile skin which bruises easily
- Increased infections
- Inflamed and florid acne
- Poor wound healing
- Fatigue and muscle weakness



Cushing's Syndrome is a direct result of excess cortisol, which has a number of actions:

- Involvement in blood pressure regulation
- Reduction of inflammation
- Response to inflammation
- Conversion of carbohydrates, and also fat and protein, into energy

Cushing's may occur because of excessive administration of corticosteroids (exogenous) or body overproduction of cortisol or ACTH (see below)

Corticosteroids have a variety of uses in the treatment of diseases. They may be given orally to treat such diseases as rheumatoid arthritis or asthma, and as part of the cocktail of drugs

used to prevent rejection of transplanted organs.

They may also be administered by injection for the management of joint disorders or back pain and topically for treating skin disorders.

Some asthma inhalers contain steroids. If used in high dosage over a long period of time, the symptoms of Cushing's Syndrome can develop.

The body may also produce too much cortisol itself, or too much ACTH which stimulates cortisol manufacture.

ACTH is Adreno-Cortico Trophic Hormone which normally acts as the regulator of cortisol and is produced in the pituitary gland (shown yellow in the diagram).

Simply, the pituitary gland samples the circulating blood to measure levels of cortisol. If it is too low, the pituitary increases its output of ACTH, which stimulates the adrenal glands to increase cortisol production.

If blood cortisol is too high, ACTH production is reduced and cortisol production declines.

The pituitary gland itself is located at the base of the brain.

A benign tumour of the pituitary gland, called a pituitary adenoma, may manufacture too much ACTH, causing the symptoms of Cushing's Syndrome.

This particular form of the syndrome is called Cushing's Disease. It is more common in women.

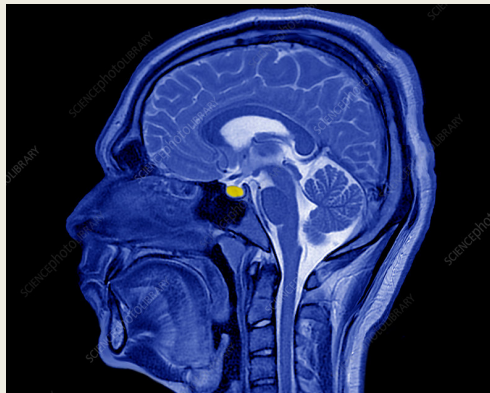
Sometimes ACTH-producing tumours can be found in other sites in the body, such as the thyroid, lungs or pancreas. Such tumours may be benign or malignant.

Sometimes disease of one or both adrenal glands can cause overproduction of cortisol, and may be the result of a benign adenoma.

Generally, the causes of Cushing's Syndrome can be treated with medication, surgery or radiotherapy.

If Cushing's Syndrome is not identified, complications are likely to develop:

- High blood pressure
- Weakness and loss of muscle strength
  - Osteoporosis and bone fractures
  - Infections.



The disorder generally responds to treatment resulting in recovery over a period of time. It is important to remember that an individual suspecting a Cushingoid reaction whilst taking long-term steroids, should NOT stop the steroids

abruptly but seek medical advice before any drug changes are made.

Figures vary for the incidence of Cushing's Syndrome. Most cases are due to administration of steroids for medical purposes. Estimates vary from 5-15 per million/year for the endogenous form, which is five times more common in women. Peak age is 25-40.

[paullambden@compuserve.com](mailto:paullambden@compuserve.com)