

Parathyroid hyperplasia

Definition

Parathyroid hyperplasia is the enlargement of all 4 parathyroid glands. The parathyroid glands are located in the neck, near or attached to the back side of the thyroid gland.

Causes

The parathyroid glands help control calcium use and removal by the body. They do this by producing parathyroid hormone (PTH). PTH helps control calcium, phosphorus, and vitamin D levels in the blood and is important for healthy bones.

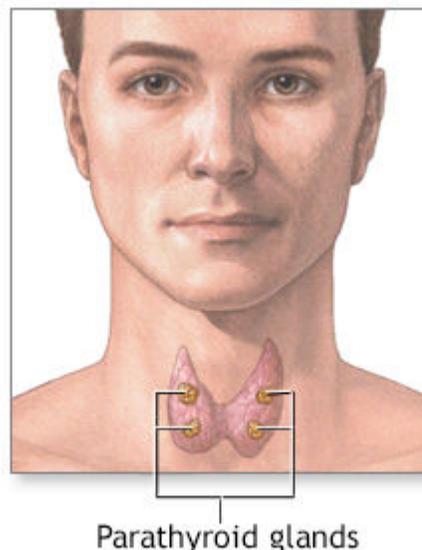
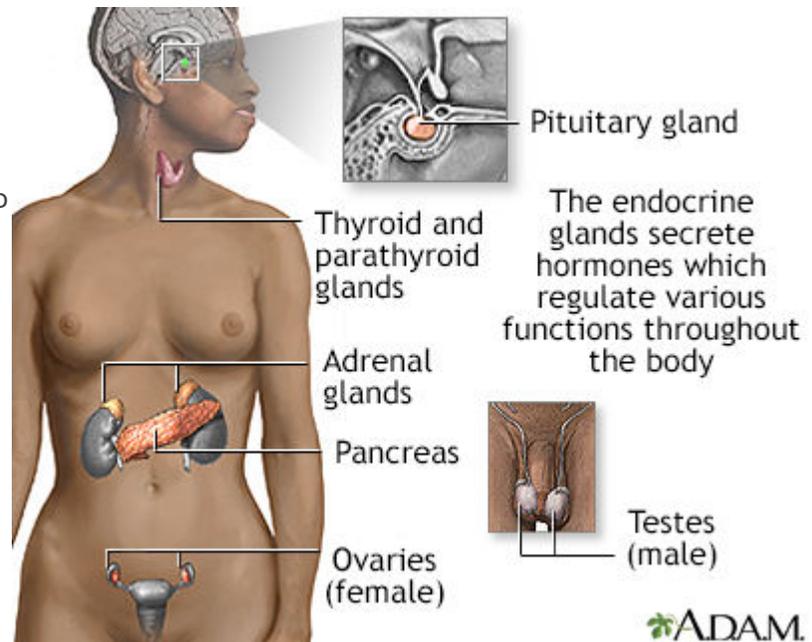
Parathyroid hyperplasia may occur in people without a family history of the disease, or as part of 3 inherited syndromes:

- Multiple endocrine neoplasia I (MEN I)
- MEN IIA
- Isolated familial hyperparathyroidism

In people with an inherited syndrome, a changed (mutated) gene is passed down through the family. You only need to get the gene from one parent to develop the condition.

- In MEN I, problems in the parathyroid glands occur, as well as tumors in the pituitary gland and pancreas.
- In MEN IIA, overactivity of the parathyroid glands occurs, along with tumors in the adrenal or thyroid gland.

Parathyroid hyperplasia that isn't part of an inherited syndrome is much more common. It occurs due to other medical conditions. The most common conditions that can cause parathyroid hyperplasia are chronic kidney disease and chronic vitamin D deficiency. In both cases, the parathyroid glands become enlarged because vitamin D and calcium levels are too low.



- Bone fractures or bone pain
- Constipation
- Lack of energy
- Muscle pain
- Nausea

Exams and Tests

Blood tests will be done to check levels of:

- Calcium
- Phosphorus
- Magnesium
- PTH
- Vitamin D
- Kidney function (Creatinine, BUN)

A 24-hour urine test may be done to determine how much calcium is being filtered out of the body into the urine.

Bone x-rays and a bone density test (DXA) can help detect fractures, bone loss, and bone softening. Ultrasound and CT scans may be done to view the parathyroid glands in the neck.

Treatment

If parathyroid hyperplasia is due to kidney disease or low vitamin D level and it is found early, your provider may recommend that you take vitamin D, vitamin D-like drugs, and other medicines.

Surgery is usually done when the parathyroid glands are producing too much PTH and causing symptoms. Usually 3 1/2 glands are removed. The remaining tissue may be implanted in the forearm or neck muscle. This allows easy access to the tissue if symptoms come back. This tissue is implanted to prevent the body from having too little PTH, which can result in low calcium levels (from hypoparathyroidism).

Outlook (Prognosis)

After surgery, high calcium level may persist or return. Surgery can sometimes cause hypoparathyroidism, which makes blood calcium level too low.

Possible Complications

Parathyroid hyperplasia can cause hyperparathyroidism, which leads to an increase in blood calcium level.

Complications include increased calcium in the kidneys, which can cause kidney stones, and osteitis fibrosa cystica (a softened, weak area in the bones).

Surgery can sometimes damage the nerves that control the vocal cords. This can affect the strength of your voice.

Complications may result from the other tumors that are part of the MEN syndromes.

- You have any symptoms of hypercalcemia
- You have a family history of a MEN syndrome

Prevention

If you have a family history of the MEN syndromes, you may want to have genetic screening to check for the defective gene. Those who have the defective gene may have routine screening tests to detect any early symptoms.

Alternative Names

Enlarged parathyroid glands; Osteoporosis - parathyroid hyperplasia; Bone thinning - parathyroid hyperplasia; Osteopenia - parathyroid hyperplasia; High calcium level - parathyroid hyperplasia; Chronic kidney disease - parathyroid hyperplasia; Kidney failure - parathyroid hyperplasia; Overactive parathyroid - parathyroid hyperplasia

Review Date: May 13, 2020.

Reviewed By: Brent Wisse, MD, board certified in Metabolism/Endocrinology, Seattle, WA. Also reviewed by David Zieve, MD, MHA, Medical Director, Brenda Conaway, Editorial Director, and the A.D.A.M. Editorial team.



ACCREDITED

Health Content
Provider
Expires 06/01/2022

A.D.A.M., Inc. is accredited by URAC, for Health Content Provider (www.uran.org). URAC's [accreditation program](#) is an independent audit to verify that A.D.A.M. follows rigorous standards of quality and accountability. A.D.A.M. is among the first to achieve this important distinction for online health information and services. Learn more about A.D.A.M.'s [editorial policy](#), [editorial process](#) and [privacy policy](#). A.D.A.M. is also a founding member of Hi-Ethics. This site complies with the HONcode standard for trustworthy health information: [verify here](#).

The information provided herein should not be used during any medical emergency or for the diagnosis or treatment of any medical condition. A licensed medical professional should be consulted for diagnosis and treatment of any and all medical conditions. Call 911 for all medical emergencies. Links to other sites are provided for information only -- they do not constitute endorsements of those other sites. © 1997-2022 A.D.A.M., Inc. Any duplication or distribution of the information contained herein is strictly prohibited.

