

PARATHYROID GLAND-2 DISORDERS

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HORMONAL DYSFUNCTIONS:

Hypersecretion

- Rare; usually results from parathyroid gland tumor
- Calcium leached from bones; bones soften and deform
- Mineral salts are replaced by fibrous connective tissue
- Ex., osteitis cystica fibrosa = fragile bones, fracture spontaneously
- Depressed nervous system □ weakness of skeletal muscles and abnormal reflexes
- Formation of kidney stones due to excess salts precipitating in the kidney tubules
- Deposition of calcium deposits in soft tissues of the

HORMONAL DYSFUNCTIONS

Hyoparathyroidism

- Results from parathyroid gland trauma or removal during thyroid surgery
- Can also be caused by an extended deficiency of dietary magnesium (function parathyroidism)
- Excitability of neurons and tetany
- Loss of sensation, muscle twitches, and convulsions
- Can progress to respiratory paralysis and death

HYPERPARATHYROIDISM

- Over activity of one or more of the parathyroid glands.
- Incidence-
 - Greatest numbers after 60 years
 - Females > males (2:1)

DISORDER

Hyperparathyroidism

- Hyperparathyroidism, which is caused by overproduction of parathyroid hormone by the parathyroid glands, is characterized by bone decalcification and the development of renal calculi (kidney stones) containing calcium.

PATHOPHYSIOLOGY

Pathophysiology

- Normal function of PTH is to increase bone reabsorption, thereby maintaining proper balance of calcium and phosphorus ions in the blood
- Excessive circulating PTH leads to bone damage, hypercalcemia, and kidney damage

HYPERPARATHYROIDISM

- **HYPERPARATHYROIDISM**

- It is a disorder caused by overactivity of one more of the parathyroid gland resulting in overproduction of parathormones. Over production of parathormone is characterized by bone decalcification and development of renal calculi. [kidney stones] containing calcium.



INCIDENCE

INCIDENCE

- It occurs 2-4 times more often in women than in men and most common in people between 60-70 years of age.
- The disorder is rare in children younger than 15 yrs. of age but incidence increases tenfold between the ages of 15 to 65 years.



TYPES OF HYPERPARATHYROIDISM

TYPES

- There are three main types of hyperparathyroidism.
- **Primary hyperparathyroidism** means the underlying problem starts in the parathyroid glands. Secondary and tertiary hyperparathyroidism means that another disease in the body has caused the parathyroid glands to be overactive.
- In **secondary hyperparathyroidism**, there is a signal to the gland to produce more parathyroid hormone (for example, a low vitamin D level).
- In **tertiary hyperparathyroidism**, the glands continue to over-secrete parathyroid hormone even though the signal is gone. These conditions may be seen in kidney disease.



CAUSES

CAUSES

- In the majority of cases the cause of hyperparathyroidism is not known. In most people, hyperparathyroidism occurs sporadically.
- In some cases, however, there can be a genetic basis for developing the disorder. A rare inherited syndrome called familial multiple endocrine neoplasia type 1 is associated with hyperparathyroidism.
- In some cases, all four of the parathyroid glands are somewhat enlarged and secrete excessive amounts of hormones. This is referred to as hyperplasia.



SYMPTOMS

CLINICAL MANIFESTATION

- Excessive calcium may cause high blood pressure or hypertension. Symptoms are often described as "moans, stones, groans, and bones".

- **Moans (gastrointestinal conditions)**

- Constipation
- Nausea and vomiting
- Decreased appetite
- Abdominal pain
- Peptic ulcer disease
- Frequent heartburn

- **Stones (kidney-related conditions)**

- Kidney stones

- **Groans (psychological conditions)**

- Confusion
- Dementia
- Memory loss
- Depression
- Personality changes

- **Bones (bone pain and bone-related conditions)**

- Bone aches and pains
- Fractures
- Curving of the spine and loss of height
- Flank pain
- Frequent urination



HYPOPARATHYROIDISM

HYPOPARATHYROIDISM

- Hypoparathyroidism is an uncommon condition in which body secretes abnormally low levels of parathyroid hormone (PTH). PTH is key to regulating and maintaining a balance of body's levels of two minerals calcium and phosphorus.
- The low production of PTH in hypoparathyroidism leads to abnormally low calcium levels in blood and bones and to an increase of phosphorus in blood.



SYMPTOMS

CLINICAL MANIFESTATIONS

- Tingling or burning (paraesthesia) in fingertips, toes and lips
- Muscle aches or cramps in legs, feet, abdomen or face
- Twitching or spasms of muscles, particularly around mouth, but also in your hands, arms and throat
- Fatigue or weakness
- Painful menstruation
- Patchy hair loss
- Dry, coarse skin
- Brittle nails
- Depression or anxiety



DISORDER

Hypoparathyroidism

- Deficiency of PTH due to hyposecretion of Parathyroid glands
- Serum calcium levels are abnormally low, serum phosphate levels are abnormally high and tetany may develop.
- Incidence-
 - Women are more prone than men
 - Incidence related to thyroid surgery

DISORDER

Hypoparathyroidism- Assessment

- **Chronic Hypoparathyroidism**

Lethargy, weakness, fatigue

Thin , patchy hair

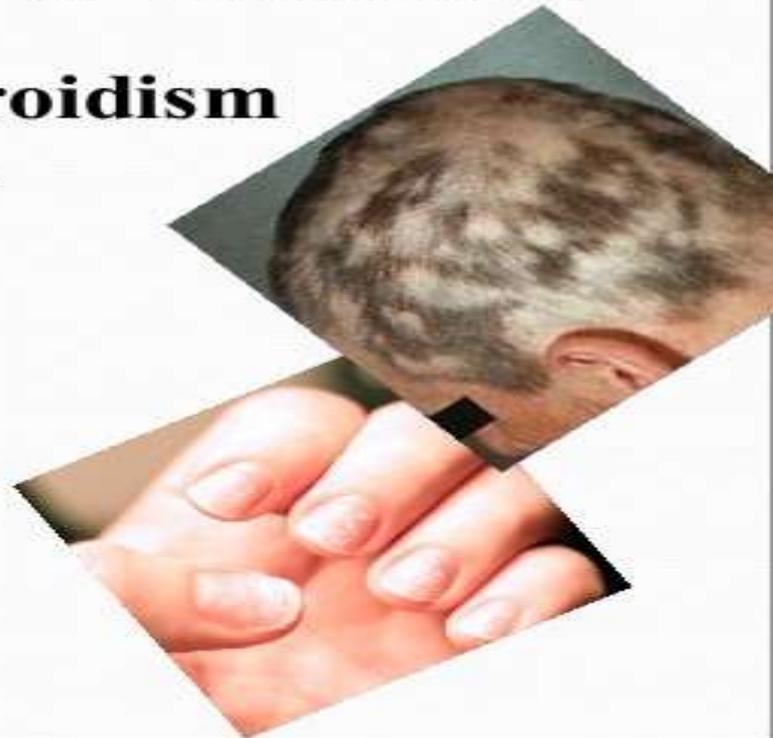
Brittle nails

Dry scaly skin

Personality changes

Cataracts

Permanent Brain Damage



THANKS