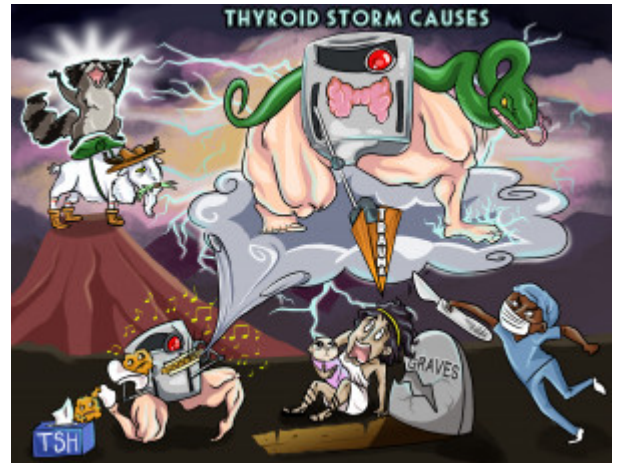


Thyroid Storm Causes

Thyroid storm is a severe manifestation of hyperthyroidism that involves escalation of the clinical manifestations of hyperthyroidism to a life-threatening degree. It can be seen in any patient with hyperthyroidism from any cause, including Graves disease, hyperfunctioning thyroid tissue, TSH-secreting tumors, McCune Albright syndrome or excessive exogenous thyroid intake. It can occur for many reasons, but is often precipitated by a stimulus such as infection, surgery, trauma or childbirth.



PLAY PICMONIC

Pathophysiology Causes

Sepsis

Sepsis-snake

In patients with hyperthyroidism, severe infection is a common precipitating factor of thyroid storm. Suspect this in patients with high fever, leukocytosis, and other signs of infection.

Thyroid Trauma

Thyroid Trauma-spike

Trauma related to surgery or other causes (motor vehicle accident, etc.) causes an acute surge of stress hormones and may alter protein binding, acting as a precipitating factor to thyroid storm.

Surgery

Surgeon

Patients who are post-operative from thyroid or nonthyroidal surgery are at risk for the onset of thyroid storm. This may be due to physiological stress on the body, or a postoperative drop in binding protein levels, leading to a rapid rise in free hormone.

Childbirth

Childbirth

Pregnant women with a history of hyperthyroidism are at risk of thyroid storm precipitated by labor, infection, preeclampsia or cesarean section.

Grave's Disease

Broken Grave

Graves disease is an autoimmune disorder, and is the most common cause of hyperthyroidism. It can develop into thyroid storm without an additional stimulus if it is chronic and left untreated.

Excessive Thyroid Hormone Ingestion

Excessive Thigh-droid Harmonica Playing

A common cause of thyroid storm is excessive thyroid hormone ingestion. This can occur due to accidental or intended overdose, dose changes, polypharmacy or patient confusion.

TSH-secreting Tumors

TSH-tissue and Tumor-guy

TSH-producing pituitary adenomas secrete biologically active TSH, and may be a cause of thyroid storm. While they are a rare cause, they should be suspected in patients with a goiter and no extrathyroidal manifestations of thyroid disease.

Hyperfunctioning Goiter or Nodule

Hiker-goiter-goat

Toxic adenoma and toxic multinodular goiter both lead to hyperfunctioning thyroid tissue. Hyperplasia of thyroid follicular cells causes an increase of biologically active thyroid-secreting tissue, which acts autonomously of TSH.

McCune Albright Syndrome

Raccoon All-bright

Patients with McCune Albright syndrome have a somatic mutation that causes activation of adenylyl cyclase, and resultant continuous stimulation of endocrine functions. In some cases, this can lead to thyroid storm, especially in combination with other precipitating factors.