

## Surgical Aspects of the Thyroid Gland

**History:** Innovations necessary for successful thyroid surgery.

1. General Anesthesia. Asepsis
2. Surgical hemostats

**Father of thyroid surgery.** Theodore Kocher: 1872

### **Surgical Anatomy:**

1. Butterfly Gland
2. Protected by strap muscles
3. Two major arteries per lobe  
Superior thyroid artery: from external carotid.  
Inferior thyroid artery: from thyrocervical trunk.
4. Three major veins:  
Do not follow arteries.
5. Two nerves:  
Superior thyroid: intrinsic muscles of larynx  
Inferior thyroid (recurrent): Vocal cords

### **Thyroid Diseases:**

#### **Goiter**

Diffuse

Toxic

Non-toxic

Nodular

Toxic

Non-toxic

#### **Diffuse Toxic Goiter:**

**Etiology:** Autoimmune? Onset commonly associated with stress.

Symptoms resemble a state of catecholamine excess, and can be controlled by beta-blockade.

Disease in elderly may be phlegmatic.

Disease in child leads to behavioral changes and rapid growth.

**Treatment:** Antithyroid drugs

Radioactive Iodine

Surgery

**Diffuse non-toxic goiter:**

Acute Thyroiditis

Subacute Thyroiditis

Hashimoto's Thyroiditis

Ridel's Struma

Goitrogenic Goiter

These conditions do not ordinarily require surgery other than from mass effect or obstruction.

**Nodular toxic goiter:**

Hyperthyroidism produced by a thyroid nodule. Treated by surgical excision of nodule.

**Nodular nontoxic goiter:**

Very common. Most are colloid nodules (not true neoplasms) and of no consequence. Problem is distinguishing them from true tumors. Aspiration, cytology, needle biopsy, Iodine scans are useful.

Excision commonly necessary to clarify diagnosis or treat tumor.

**Thyroid Tumors:**

**Benign**

Embryonal adenoma

Fetal adenoma

Hurthle cell adenoma

Papillary adenoma

**Malignant**

Papillary adenocarcinoma

Follicular adenocarcinoma

Medullary adenocarcinoma

Anaplastic carcinoma

Benign tumors are treated by lobectomy. Malignant tumors are all treated by total thyroidectomy.