

Revised
3-97

SURGICAL ASPECTS OF THYROID

History: The thyroid gland has drawn the attention of many famous surgeons for several hundred years, but the modern era of thyroid surgery began with Dr. Theodore Kocher, Professor of Surgery at the University of Borne, Switzerland in 1872.

Some three major innovations were necessary before thyroidectomy became technically feasible with reasonable safety.

- (1) The discovery of anesthesia by Morten, Wells, and Long in the 1840's,
- (2) the discovery of antiseptics and its corollary aseptic practices by Lister in the 1860's, and
- (3) the development of surgical forceps and hemostats in several German clinics in the same decade.

Armed with these resources, Kocher was able to develop anatomical thyroidectomy operations which are practiced with only minor changes some 120 years later.

The embryology of the thyroid has some clinical implications. The thyroid originates from the ectoderm on the floor of the pharynx and migrates into its adult position. The origin of the anlage persists in the adult at the proximal end as the foramen caecum at the base of the tongue and at the distal end as the pyramidal lobe of the thyroid. Occasionally a fibrous tract ^{or duct} persists connecting these two ~~parts~~. This structure ^{is called} the thyroglossal duct. Occasionally cystic lesions of this thyroglossal duct may occur ~~along the tract~~. They are mid-line and move on deglutition because the tract passes through and is attached to the hyoid bone. Such ~~traps~~ should be excised to prevent infection & for cosmetic reasons. Rarely the thyroid anlage does not reach its normal location, but is arrested during its descent. In this situation the thyroid

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develops as a mid-line ectopic gland. If assumed to be thyroglossal duct cyst and excised, hypothyroidism is produced. It is, therefore, wise to aspirate such masses to ascertain that they are cystic. If fluid is not obtained, a thyroid scan is indicated prior to excision.

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Mid

I will not cover physiology or the determination of thyroid function since it has been thoroughly covered by Endocrinology. However, knowledge of the thyroid hormone structure, its deposition within the gland, its ^{responsiveness to} production by thyroid stimulating hormone (TSH) and its mobilization by thyroid releasing hormone is essential. Thyroid function measurements are now quite reliable and easily obtained. Determination of Tri-iodotyrosine (T₃) and thyroxine (T₄), along with thyroid stimulating hormone (TSH) are the most useful. Thyroid scans are useful to assess the functional capacity of thyroid masses.

There are many classifications of thyroid diseases. My personal preference is the simple description related to physical examination.

Goiter is an ancient term used to denote any enlarged thyroid. It is convenient to think of goiter as toxic or nontoxic, and as diffuse or nodular. Nodular glands may be either multinodular or contain single or solitary nodules.

Thus, any thyroid may be described as:

SLIDE I

TABLE 1

- 1) Diffuse toxic goiter