Surgical therapy of thyroid disorders

Thyroid surgery is performed for a variety of reasons. A nodule or lobe of the thyroid is sometimes removed for biopsy or for the presence of an autonomously function igadenoma causing hyperthyroidism. A large majority of the thyroid may be removed, a subtotal thyroidectomy, to treat the hyperthyroidism of Graves' disease, or to remove goitre that is unsightly or impinges on vital structures.

A complete thyroidectomy of the entire thyroid, including associated lymph nodes, is the preferred treatment for thyroid cancer. Removal of the bulk of the thyroid gland usually produces hypothyroidism, unless the person takes thyroid hormone replacement. Consequently, individuals who have undergone a total thyroidectomy are typically placed on thyroid hormone replacement for the remainder of their lives. Higher than normal doses are often administered to prevent recurrence.

If the thyroid gland must be removed surgically, care must be taken to avoid damage to adjacent structures, the parathyroid glands and the recurrent laryngeal nerve. Both are susceptible to accidental removal and/or injury during thyroid surgery. The parathyroid glands produce parathyroid hormone (PTH), a hormone needed to maintain adequate amounts of calcium in the blood. Removal results in hypoparathyroidism and a need for supplemental calcium and vitamin D each day. In the event the blood supply to any one of the parathyroid glands is endangered through surgery, the parathyroid gland(s) involved may be re-implanted in surrounding muscle tissue. The recurrent laryngeal nerves provide motor control for all external muscles of the larynx except for the cricothyroid muscle, which also runs along the posterior thyroid. Accidental laceration of either of the two or both recurrent laryngeal nerves may cause paralysis of the vocal cords and their associated muscles, changing the voice quality.