How to Avoid Complications of Thyroid Surgery?

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(15 Minutes)

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History of Thyroidectomy

- Prior to 1850 about 70 thyroid operations were performed with a mortality rate of 41%
- Theodor Billroth (1829-1894) reported a 40% mortality rate in the mid 19th century and discontinued thyroid operations for a 10 year period.
- Robert Liston (1794-1843) from London, Johann Dieffenbach (1792-1847) from Berlin and Samuel Gross (1805-1884) strongly recommended against thyroidectomy.
- In 1850 the French Academy of Medicine condemned thyroid operations.

Theodore Kocher (1841-1917) demonstrated that thyroidectomy could be done safely and that the thyroid gland was essential for life: Eighteen percent of goiters recurred after enucleation or partial thyroidectomy (Welbourn RP The History of Endocrine Surgery 1990; P:44)

William Stewart Halsted (1852-1922) was a friend and student of Kocher and wrote “The extirpation of the thyroid gland for goiter typifies perhaps better than any other operation, the supreme triumph of the surgeon’s art.”
Proper Diagnosis

History: Symptoms: (local and systemic)
- family history, radiation?

Physical Examination: size, physical characteristics, nodes?

Ultrasound*: indicates size, number, complexity of nodules and suspicion for malignancy as well as nodal metastases

Blood tests: ** TSH and calcium

FNA: Cytology

*CT and MRI only indicated for fixed lesion, substernal masses and patients with hemoptysis

**Discontinue aspirin and other medications that increase risk of bleeding.

Placement and sizes of Incision

- A Kocher transverse – collar incision (first introduced by Jules Boeckel of Strasbourg in 1880) should be placed on a normal skin line (Venus Line) at the level of the cricoid cartilage.

Placement of incision: Thyroid and Parathyroid glands

The initial incision in a thyroidectomy is made 1 cm below the cricoid cartilage and follows normal skin lines. A sterile marking pen is used to mark the midline of the neck, the level of the incision, and the lateral borders of the incision. A 2-0 silk tie is pressed against the neck to mark the incision site itself.

Complications of Thyroidectomy

- Hypoparathyroidism
- Permanent hoarseness with recurrent laryngeal nerve dysfunction
- Bleeding requiring return to operating room
- Infection
- Seroma
- Injury to external laryngeal nerve (voice fatigue and inability to sing high notes)
- Other: DVT, myocardial infection, bilateral vocal cord paralysis.
How Should Patients with Thyroid Cancer be Treated?

- Extent of thyroidectomy
- Extent of lymph node dissection
Thyroid Cancer Operation

- Total or Near Total Thyroidectomy
- Therapeutic central and or lateral neck dissection for ultrasound and/or intraoperatively identified nodes (Not enough information currently available to recommend prophylactic central neck dissection).

Post-operative Care

- Low Fowler position
- Avoid coughing and emesis
- Neck measurement

Conclusion

An accurate diagnosis and pre and intraoperative evaluation with meticulous technique should keep thyroid surgery safe.