Surgical Treatment of Medullary Carcinoma of the Thyroid

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Surgical Indications

- Palpable thyroid nodule
- Family history of medullary carcinoma
- FNA suspicious or diagnostic
- Suspicious lymph nodes
- *Ret* proto-oncogene positive
Surgical Treatment

• Aggressive disease.
• Poorly responsive to Chemotherapy and Radiotherapy
• Surgical resection only cure
• Total Thyroidectomy
• Neck dissection
• Resection of all involved structures including trachea, esophagus, recurrent nerves, possibly carotid artery as necessary
Surgical Treatment

- Preoperative flexible laryngoscopy helpful
- CT with contrast helpful
- Identification and preservation of recurrent laryngeal nerves, parathyroid glands, superior laryngeal nerves
- Reimplantation of devascularized parathyroid glands
Total Thyroidectomy
Total Thyroidectomy

FIGURE 18–10
Total Thyroidectomy

Medial retraction of thyroid lobe

Inferior parathyroid gland

Superior parathyroid gland

Inferior thyroid artery

Recurrent laryngeal nerve

Lateral retraction of strap muscles
Total Thyroidectomy
Implantation

- Smallest parathyroid gland
- Muscle
Neck Dissection

Level VI –
Central Compartment

Levels II-V –
Functional Neck Dissection

VII –
Mediastinal tracheal nodes
Neck Dissection

• Incidence of positive lymph nodes
  – 1cm nodule is 11%
  – 2cm nodule is 60%
  – 4cm nodule above 80%

• All patients get central compartment dissection (Level VI)

• Most advocate at least unilateral level II-V

• Palpable nodal disease – Bilateral functional neck dissection (II-V) with central compartment (VI), Mediastinal dissection as indicated (VII)
Neck Dissection
Tracheal Resection
Tracheal Resection
Complications

• Hypoparathyroidism
  – 20% temporary
  – 5-10% permanent
  – Incidence increases with neck dissection.
• Recurrent Laryngeal nerve injury
  – Less than 1 percent.
• Superior Laryngeal nerve injury
  – Unknown incidence
  – Poor voice pitch
• Cranial nerve injury
  – Seen with neck dissection rarely.
Conclusion

- Medullary carcinoma is an aggressive disease
- Poorly responsive to non-surgical treatment
- Total thyroidectomy with neck dissection in all cases
- Sacrifice of involved structures as indicated.