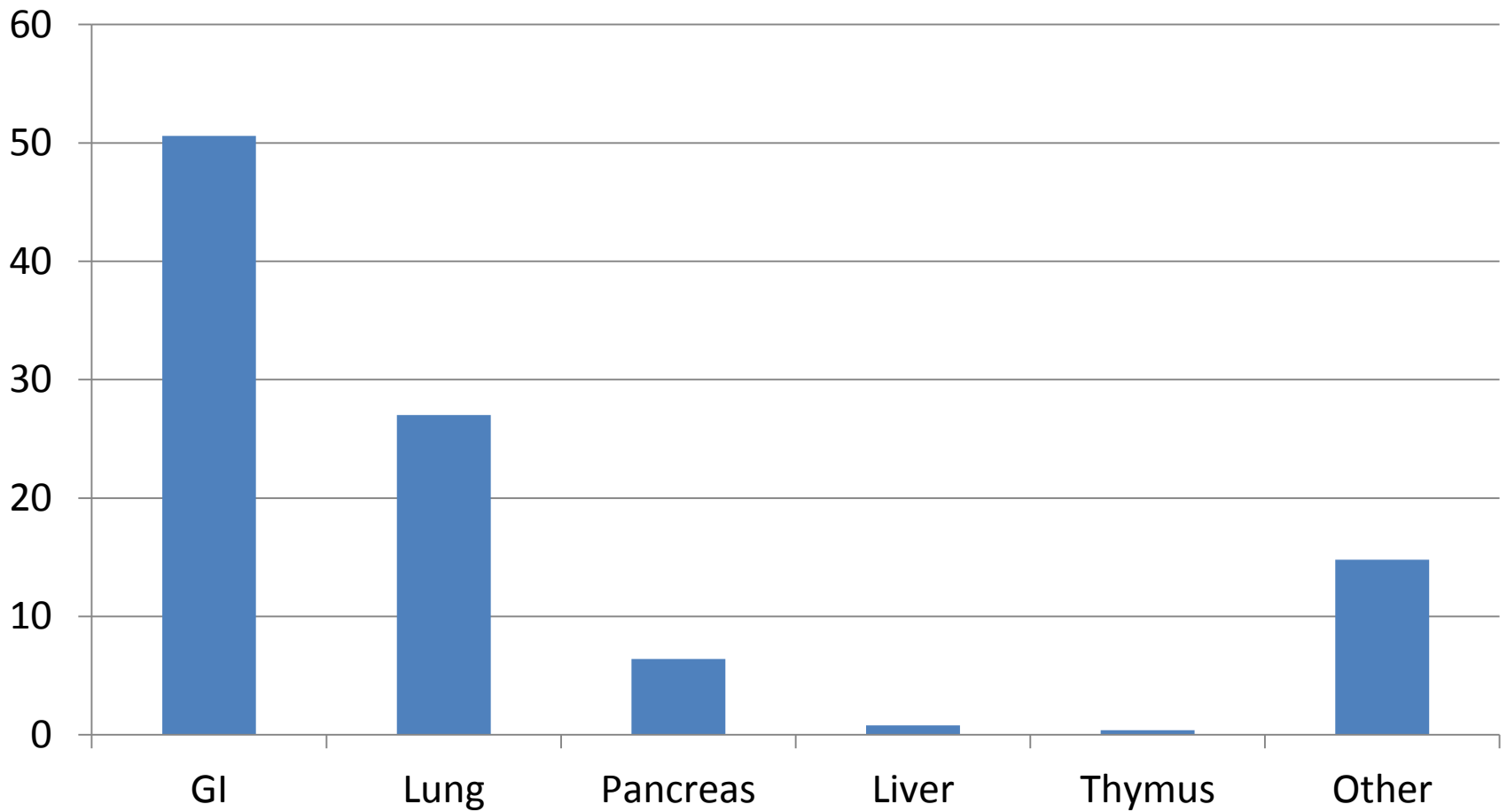


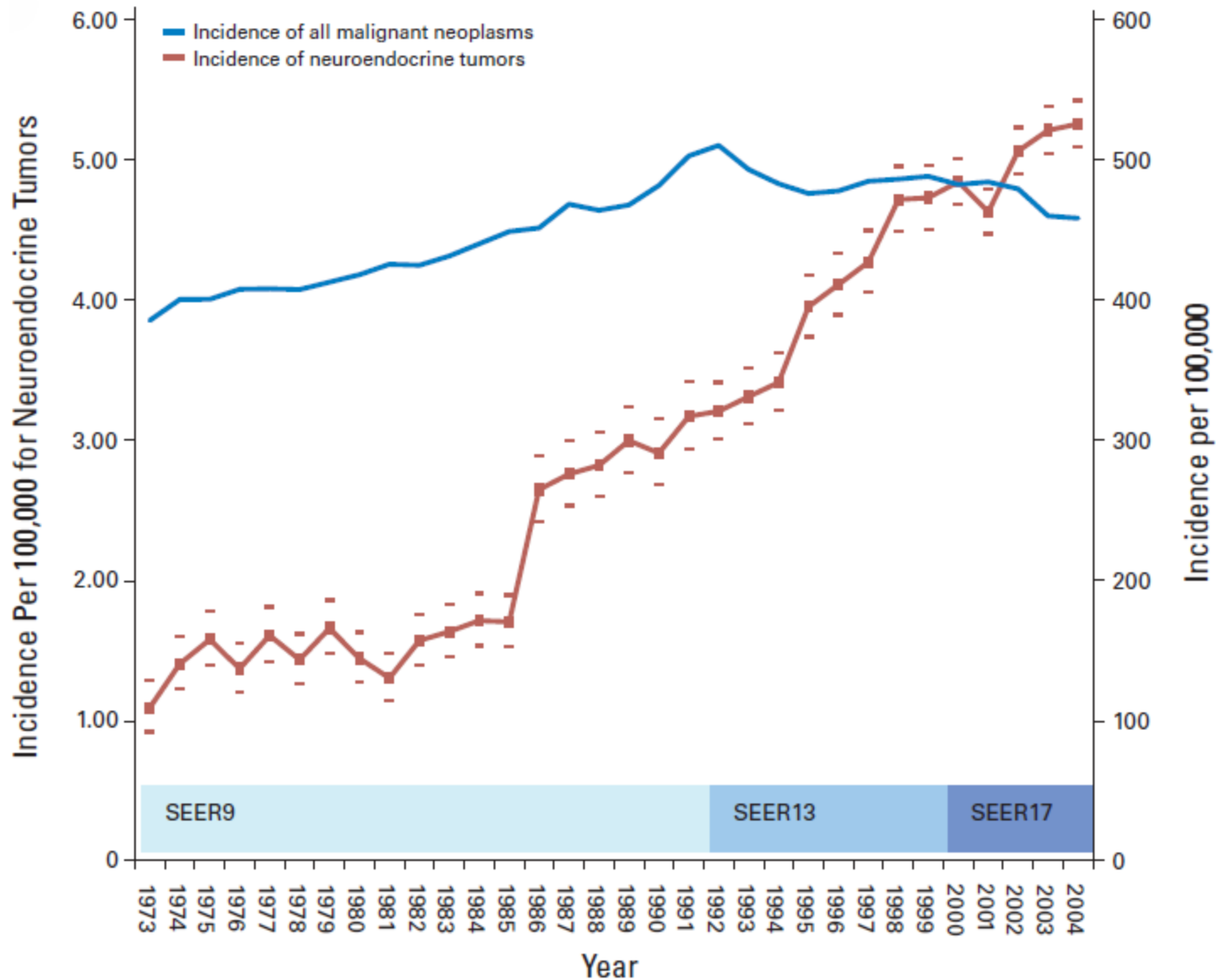
Surgical Management of Bronchopulmonary Carcinoid Tumors

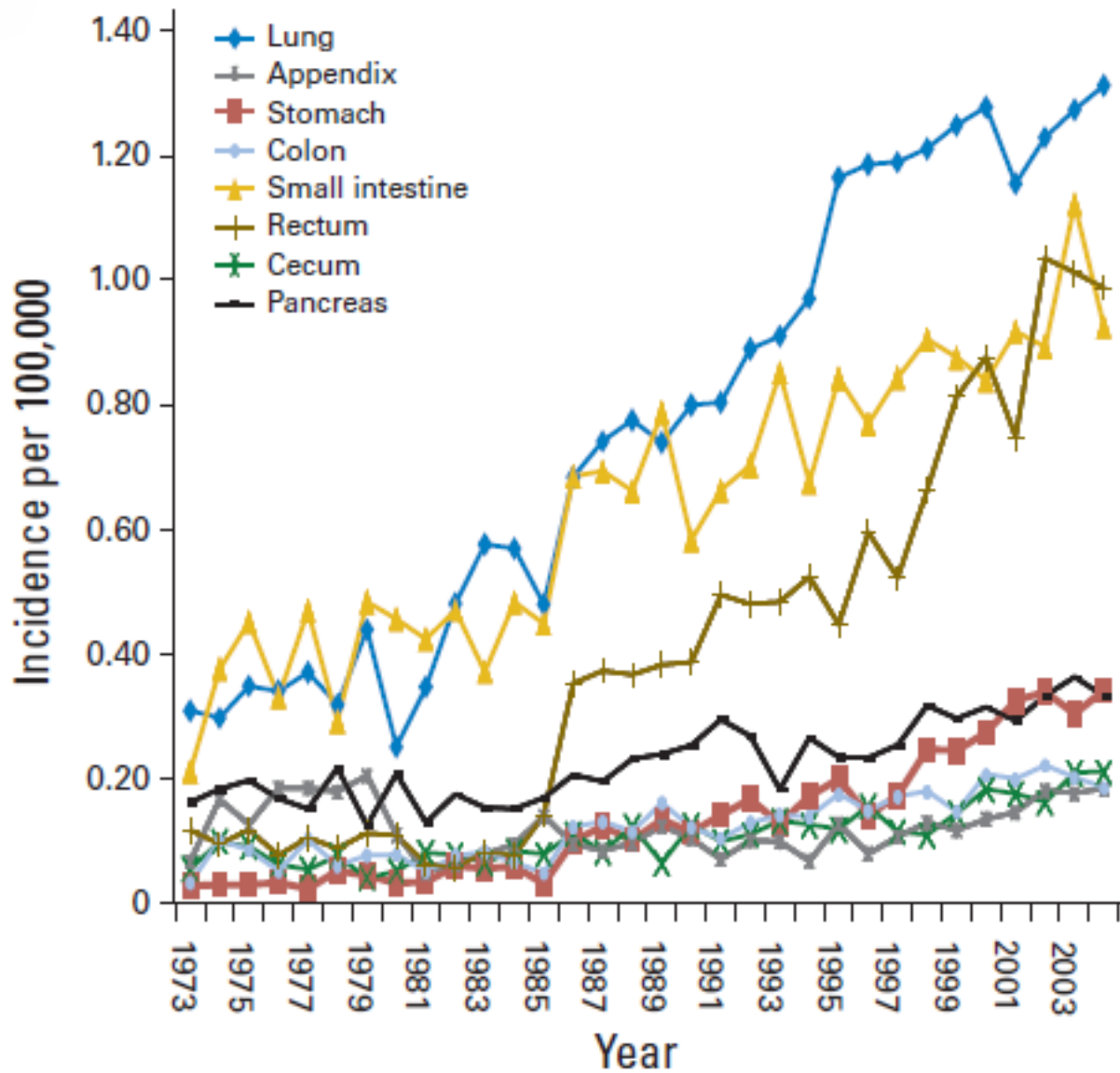
Mark K. Ferguson, MD
Department of Surgery
The University of Chicago



NET Distribution



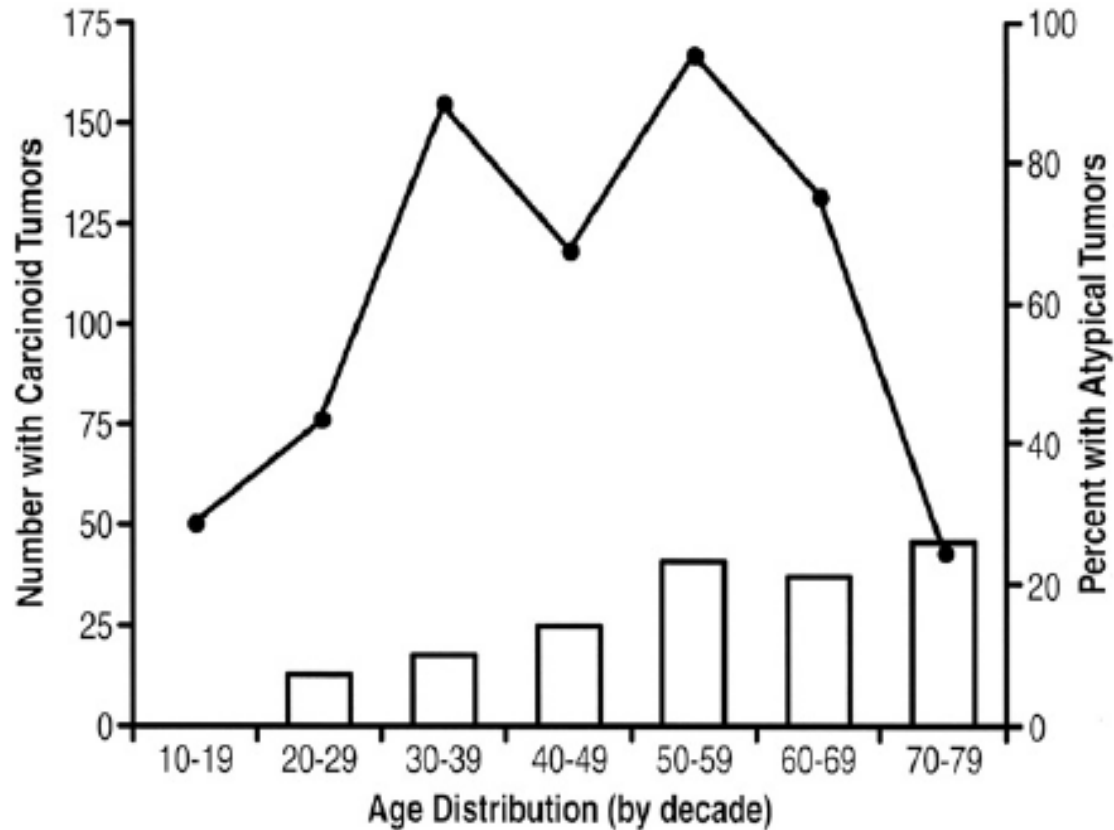




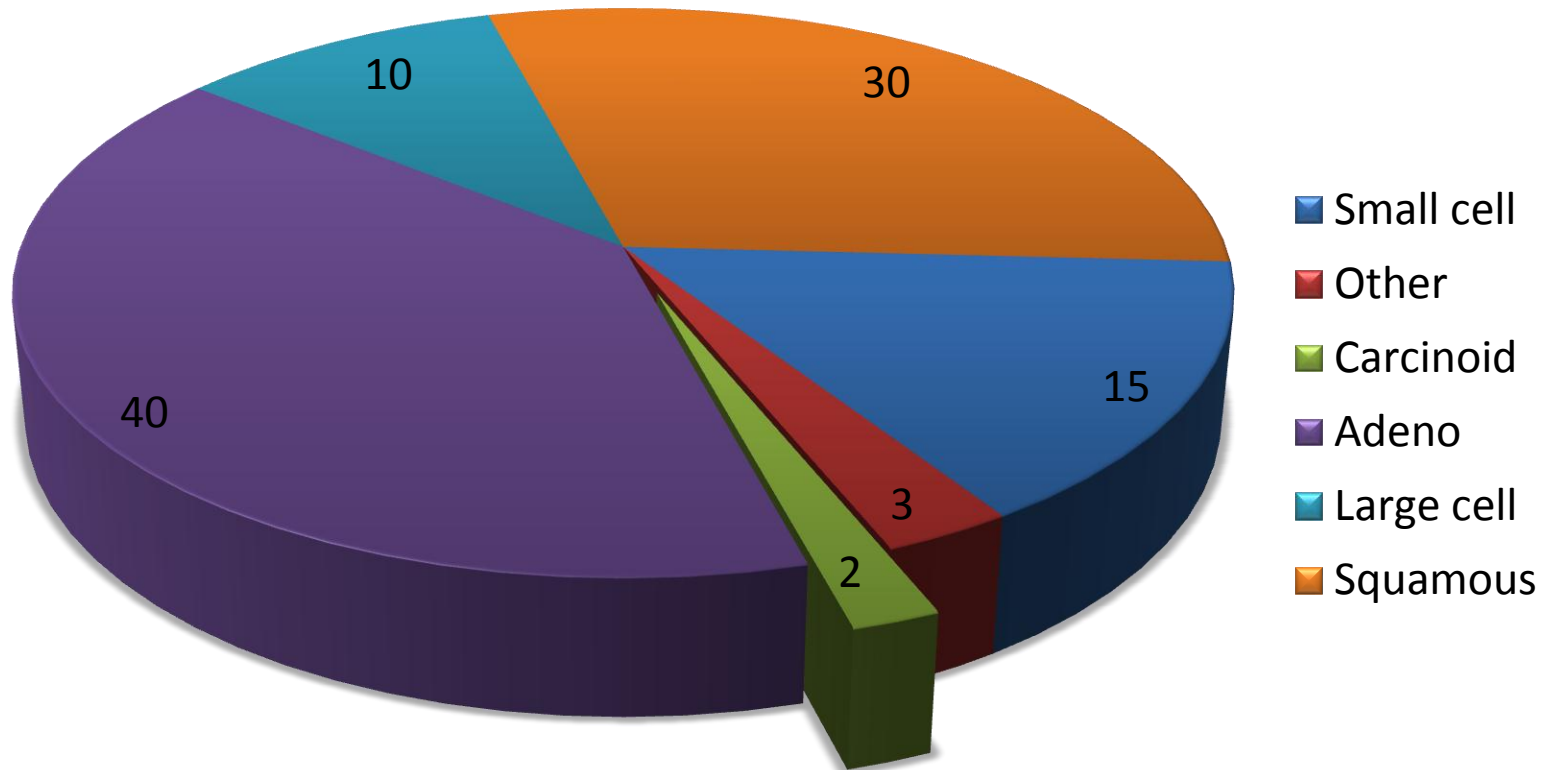
Incidence by Race and Gender



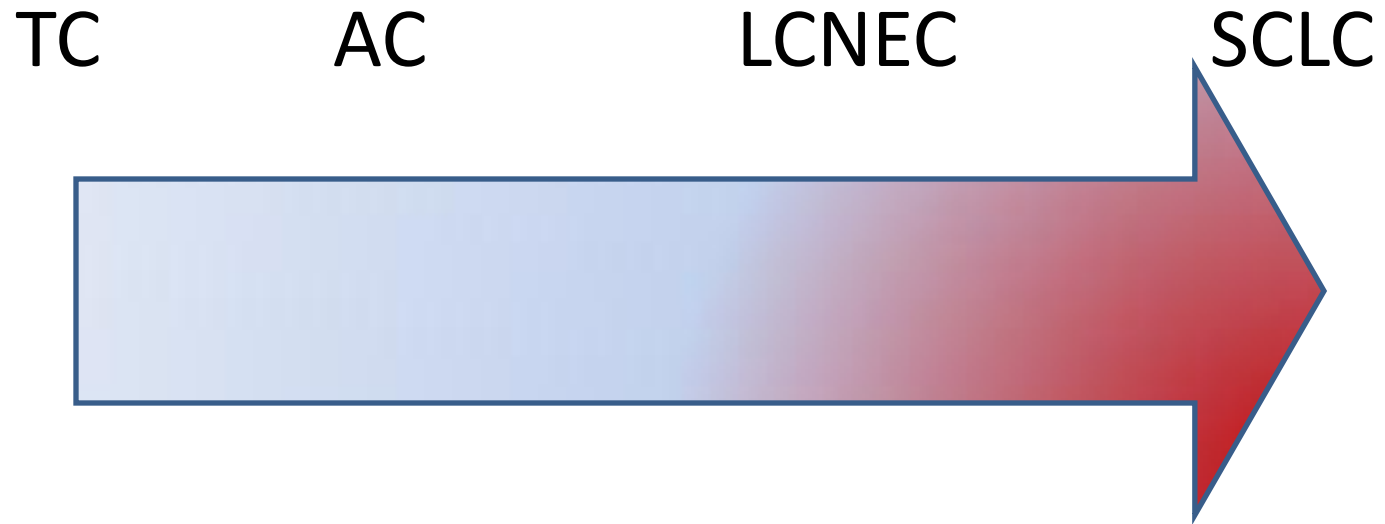
Pulmonary Carcinoid Frequency



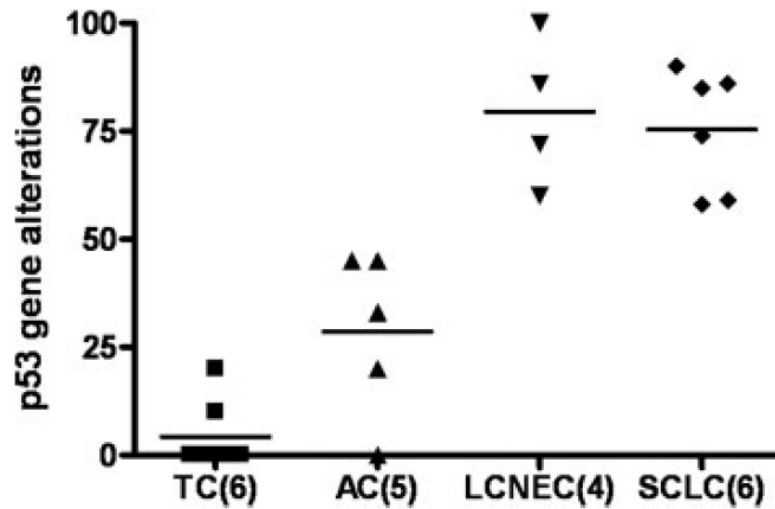
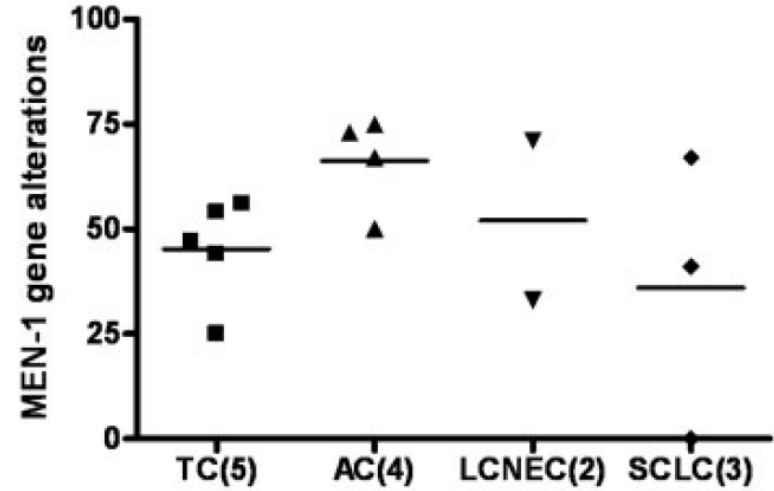
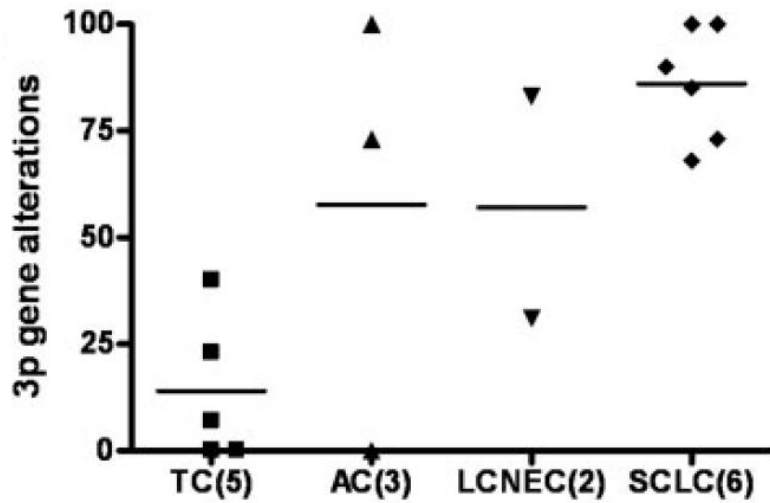
Lung Cancer Categories



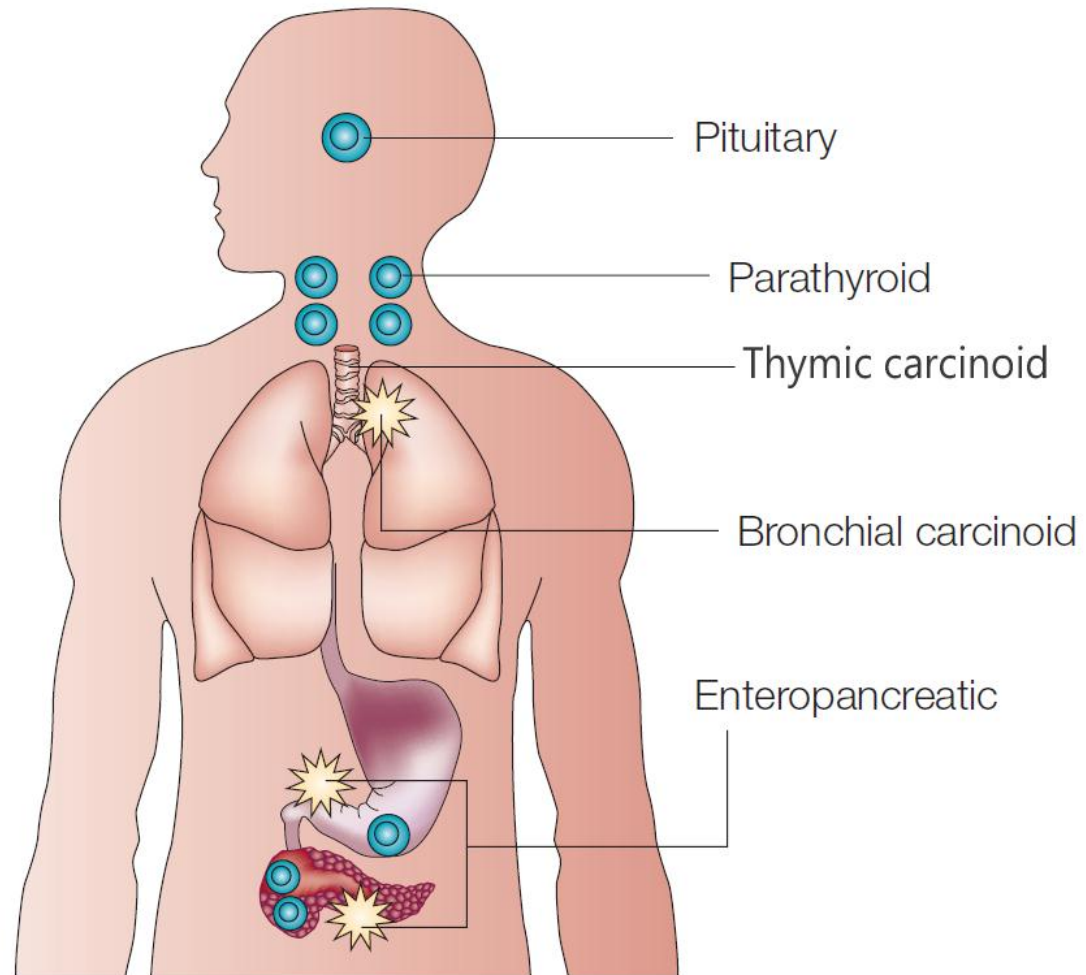
Bronchopulmonary NET



Genetic Abnormalities



MEN1

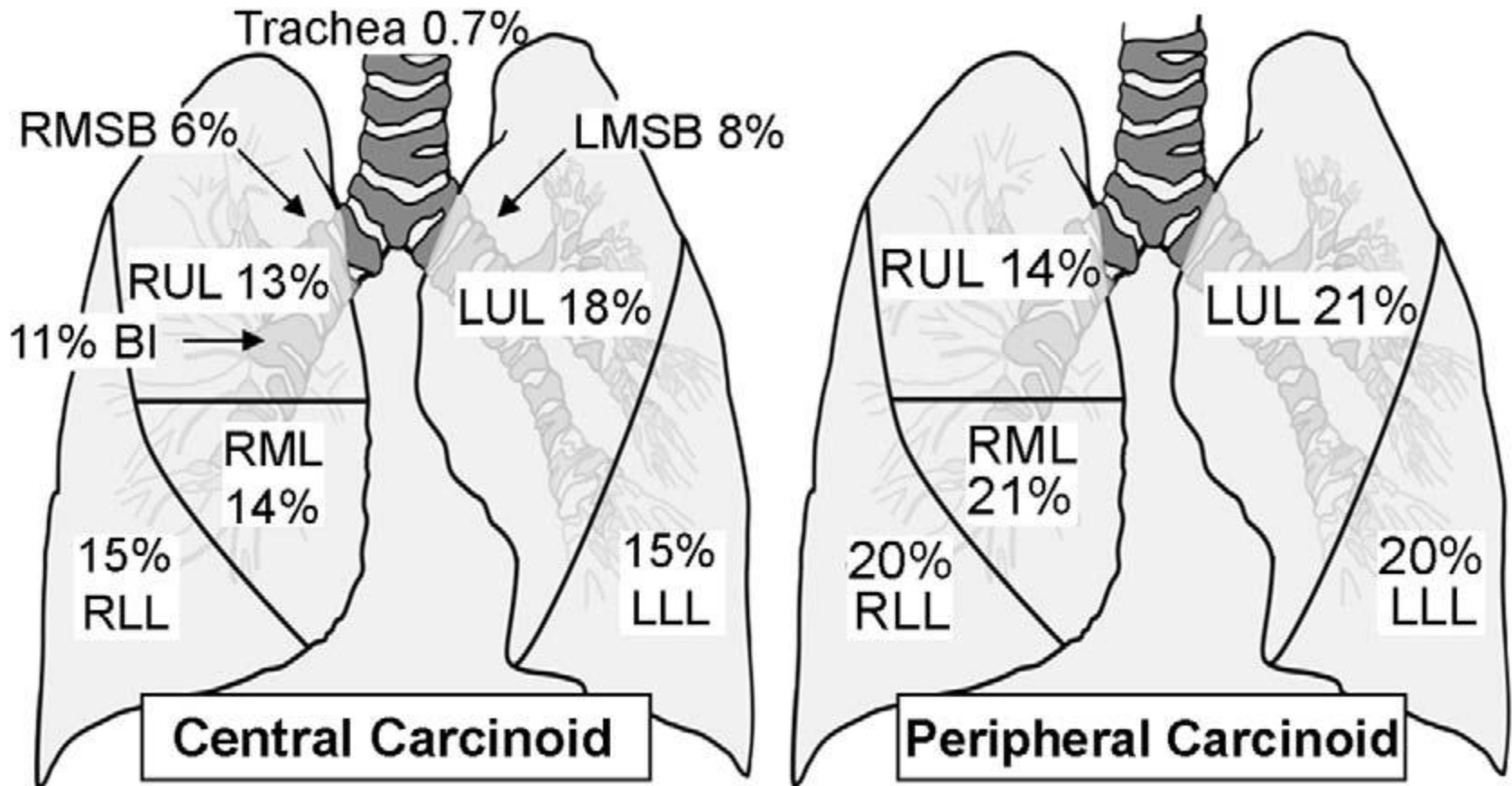


Features

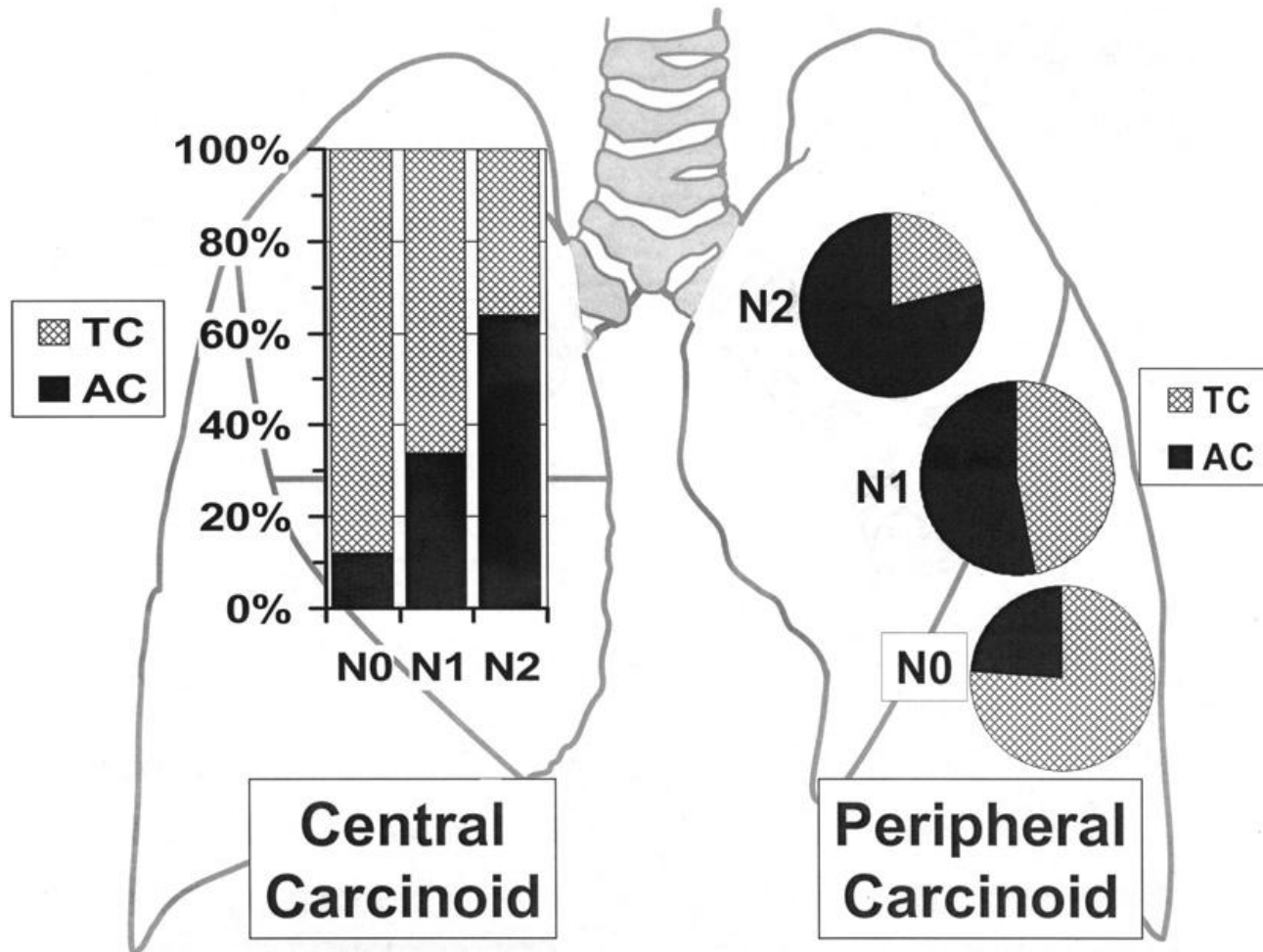
- 95% sporadic
- 5% associated with MEN1
- Carcinoid syndrome rare (<1%), almost always associated with metastatic disease
- Cushing syndrome in up to 5% of patients, more common in peripheral TC



Location



Nodal Status by Location

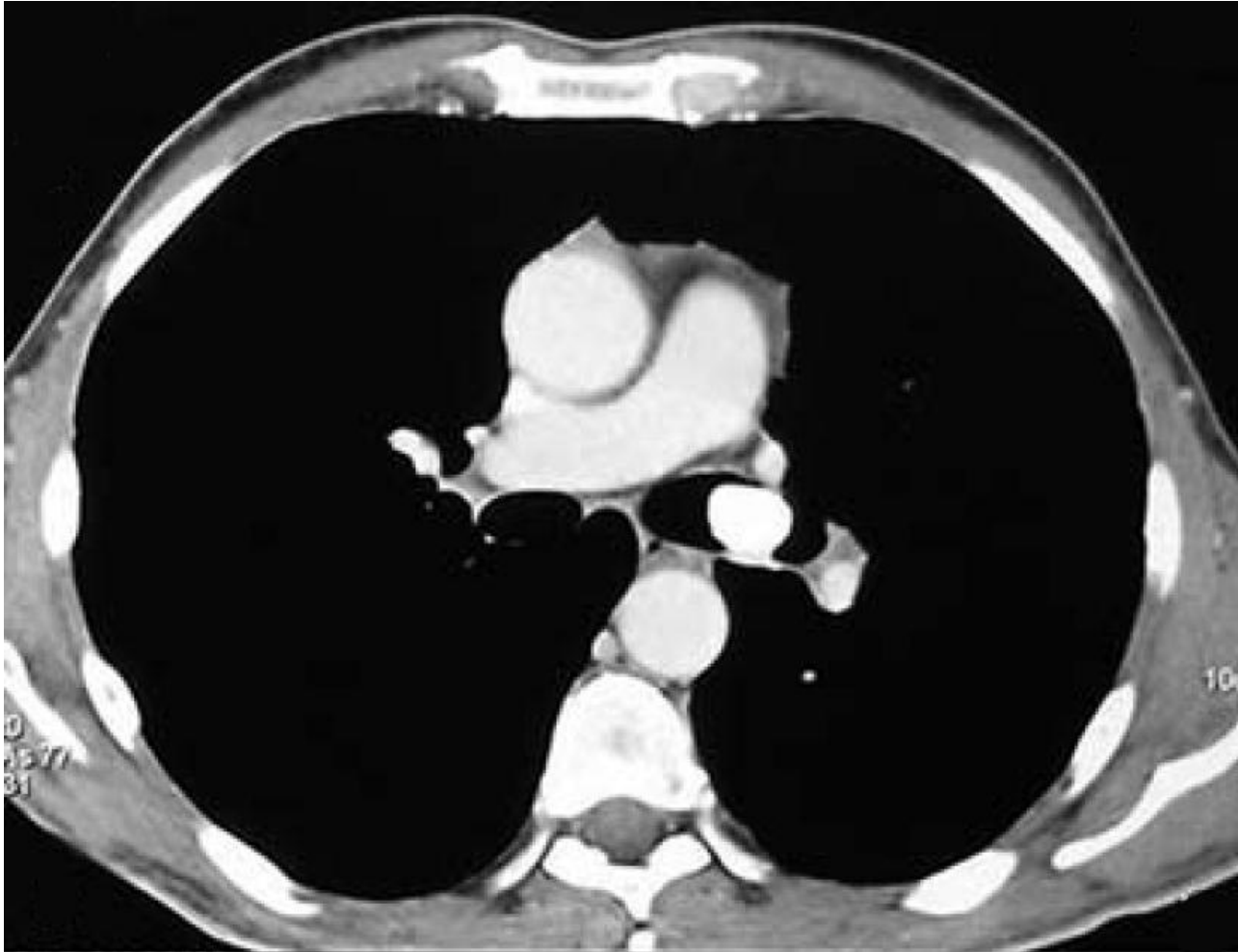


Diagnosis and Staging

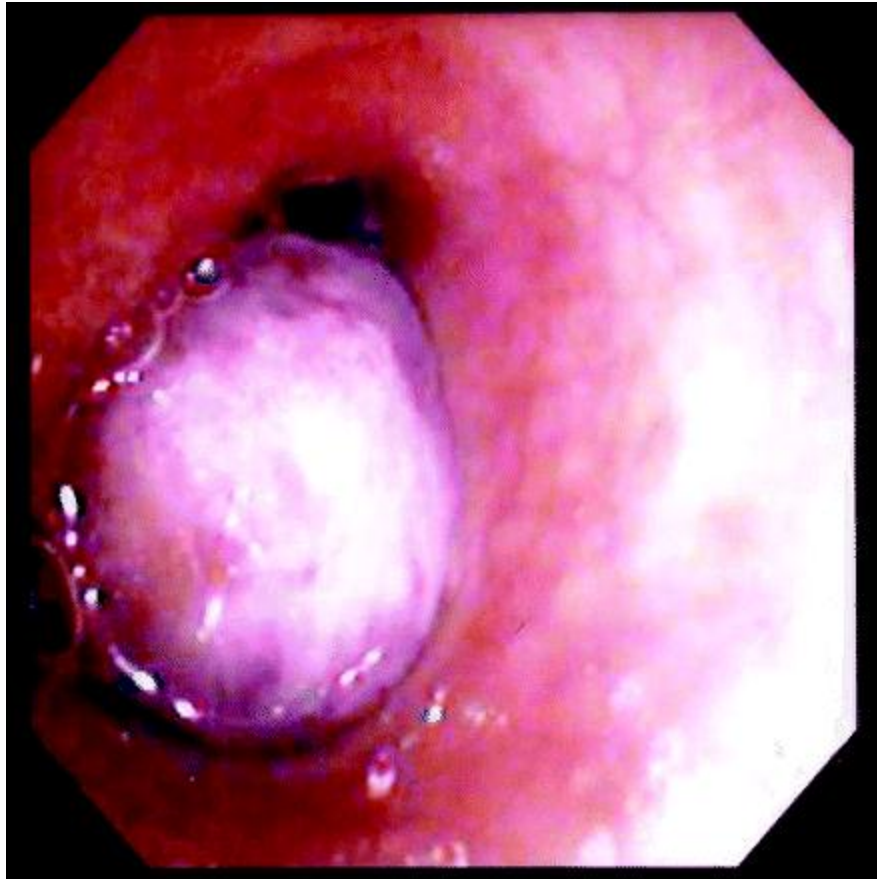
- Staging routinely includes CT and PET
- Octreoscan rarely used
- No screening for endocrine abnormalities in absence of symptoms
- Histologic diagnosis not necessary prior to resection



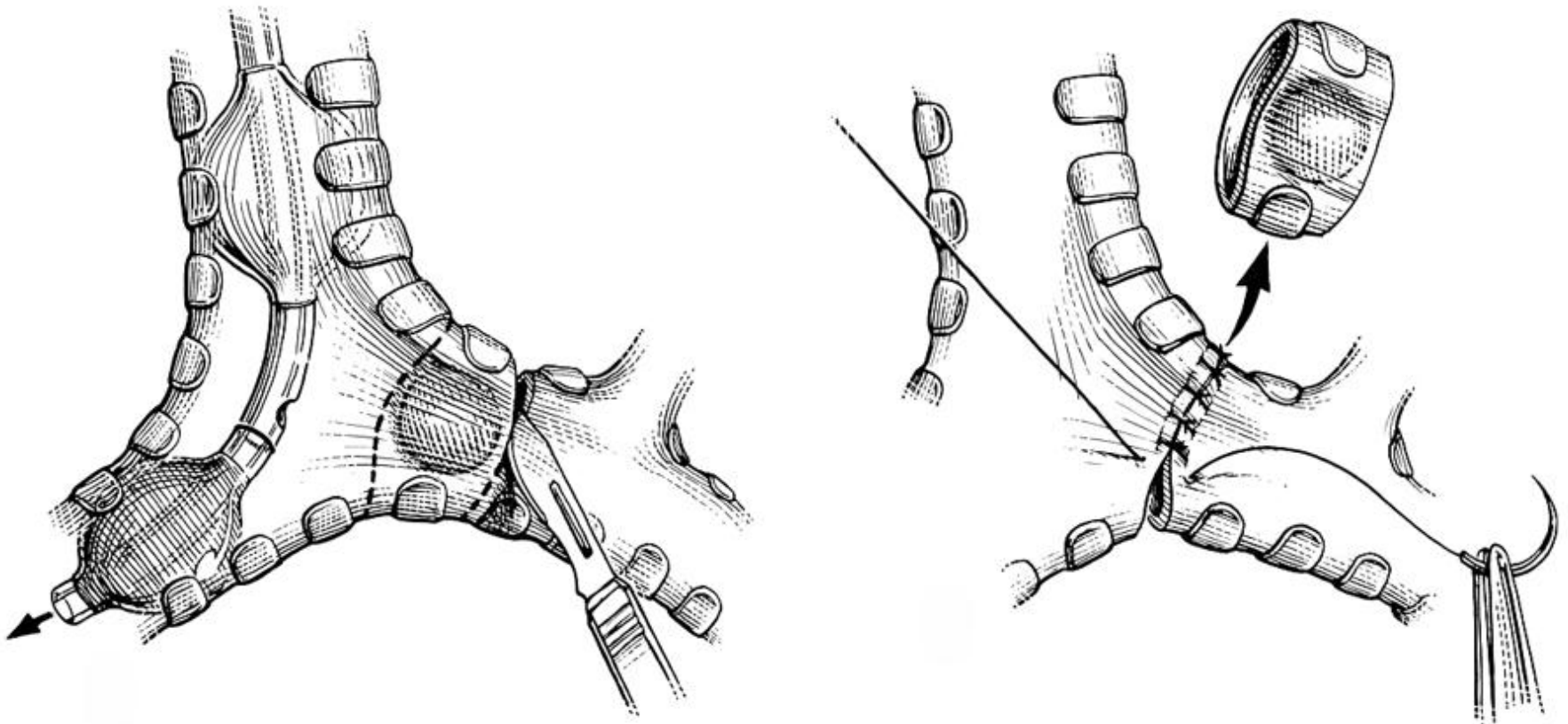
Central Bronchial Carcinoid



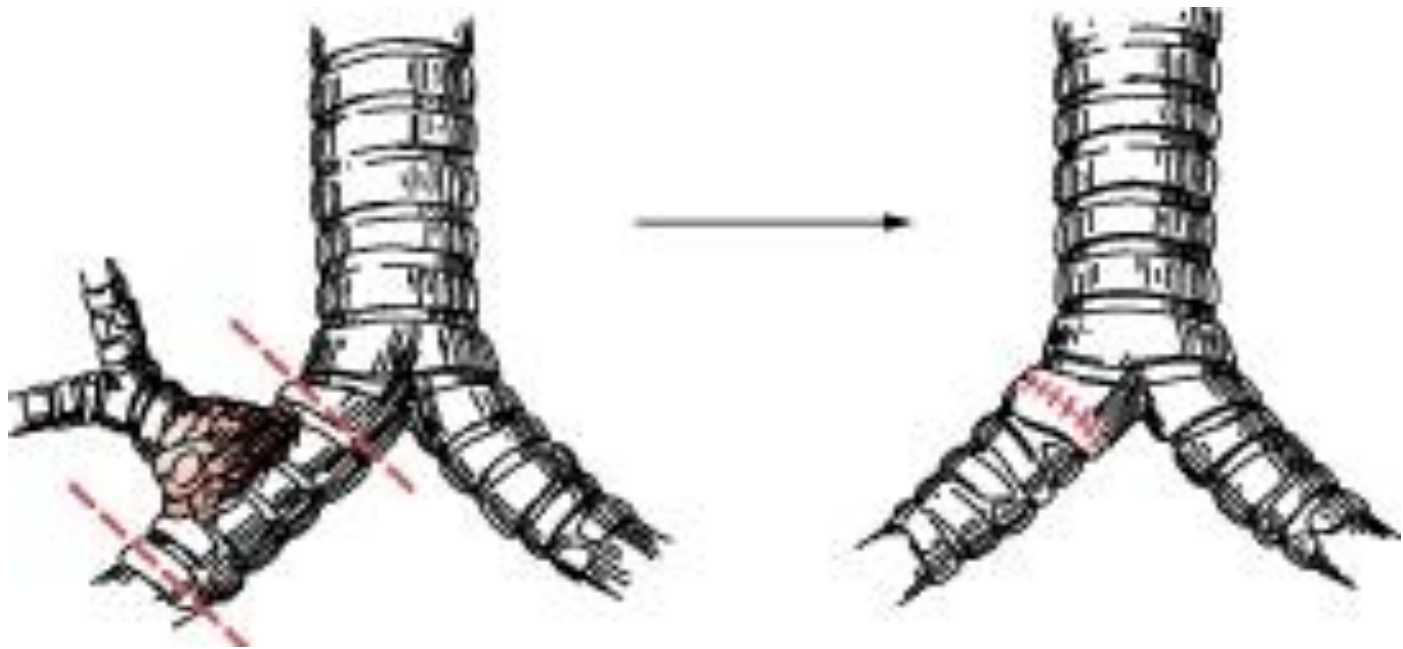
Bronchoscopic View



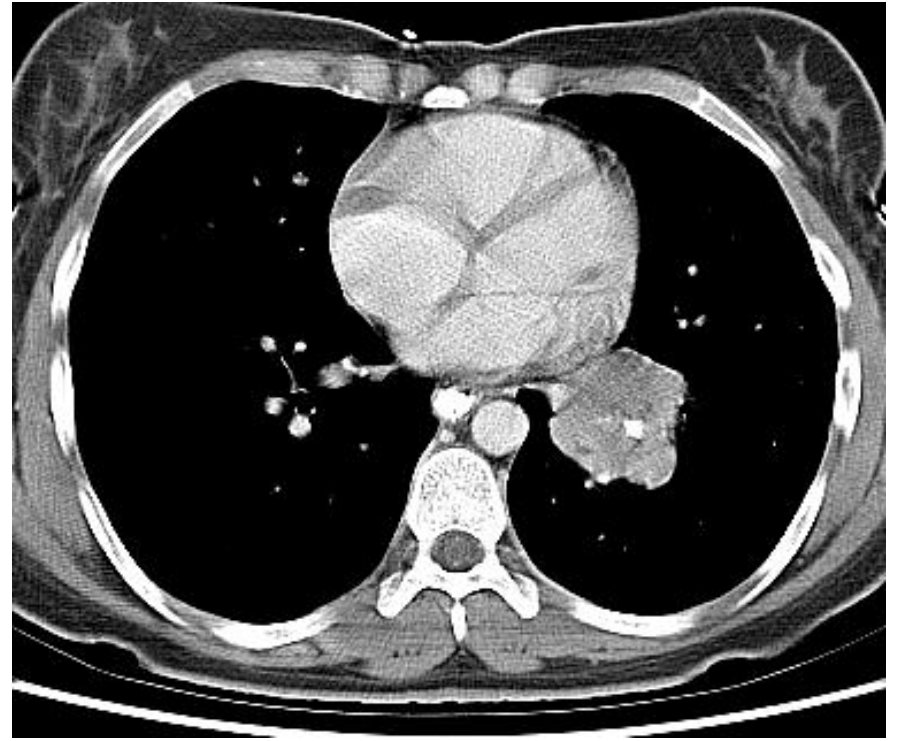
Sleeve Bronchoplasty



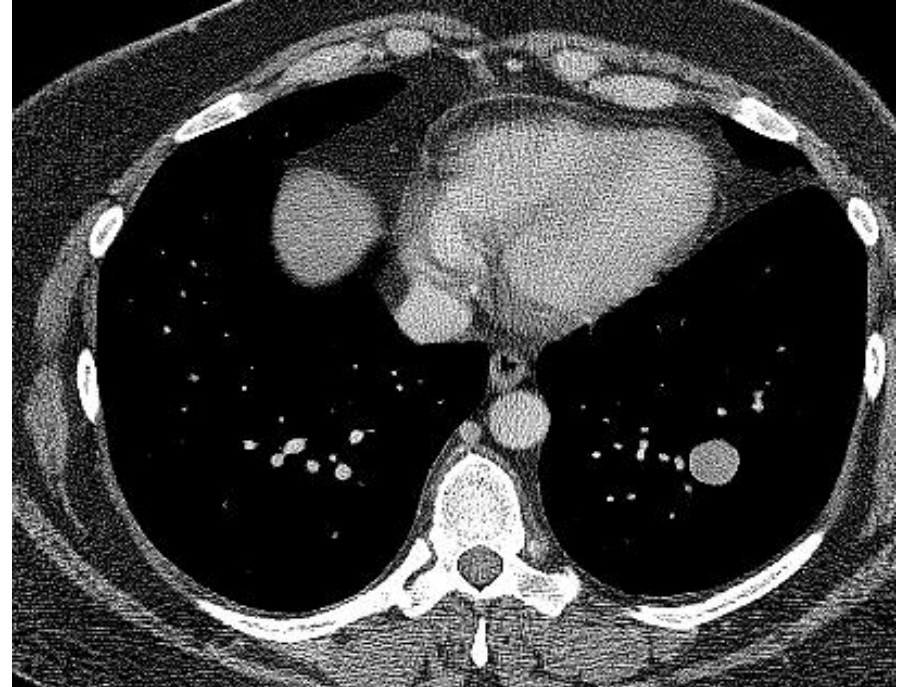
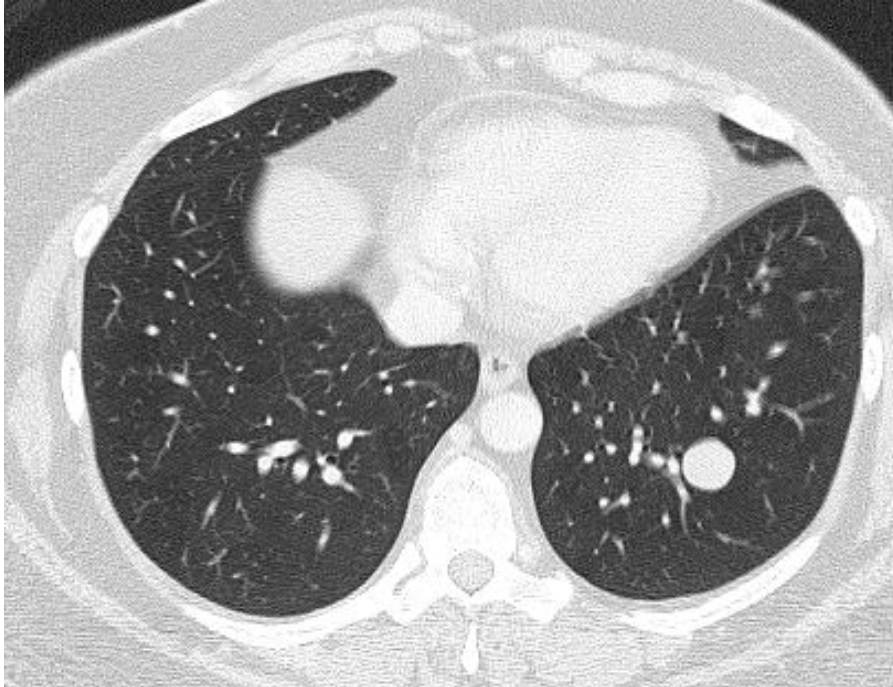
Sleeve Lobectomy



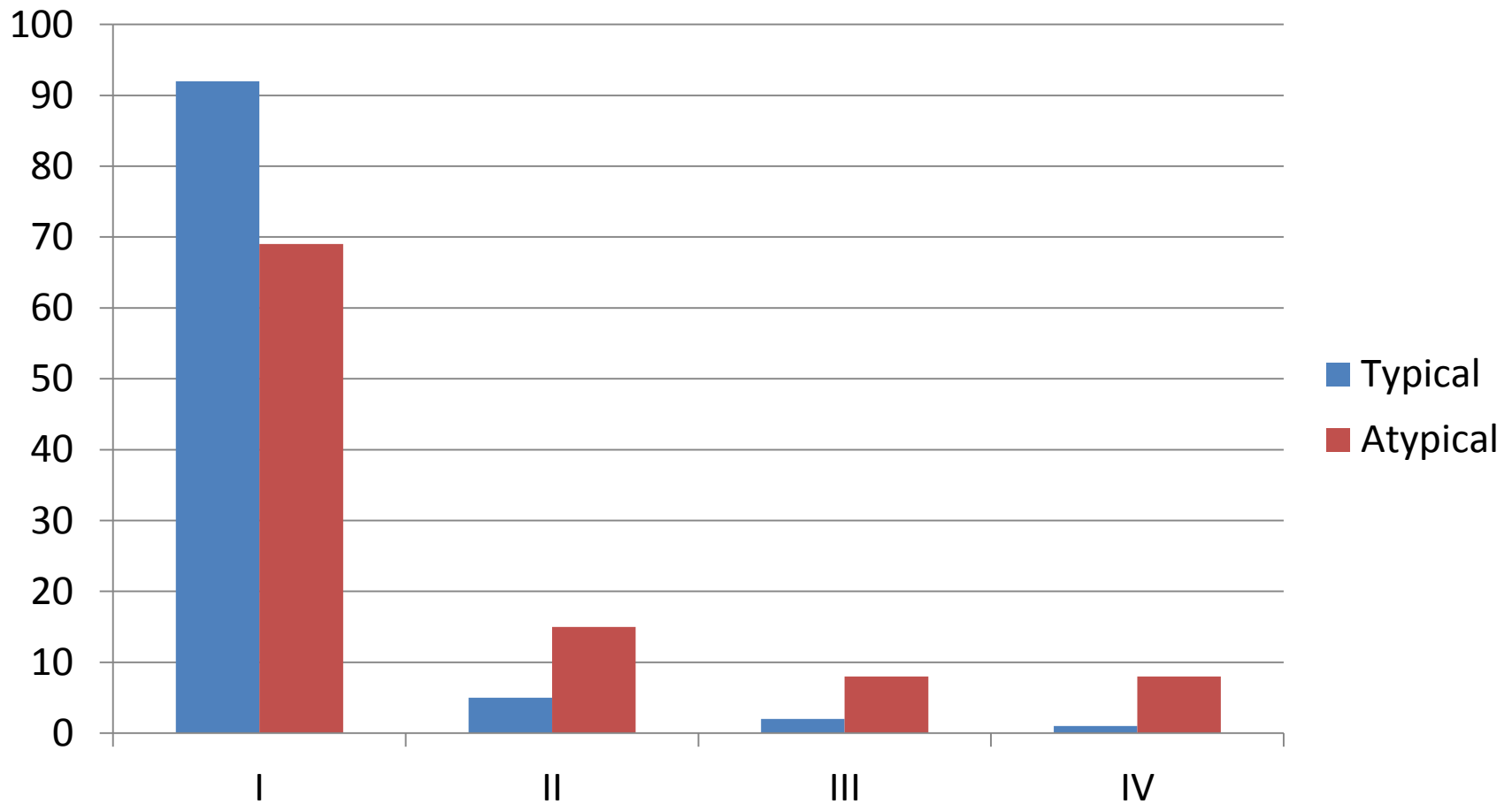
Typical Carcinoid



Atypical Carcinoid



Stage of Resected Carcinoids

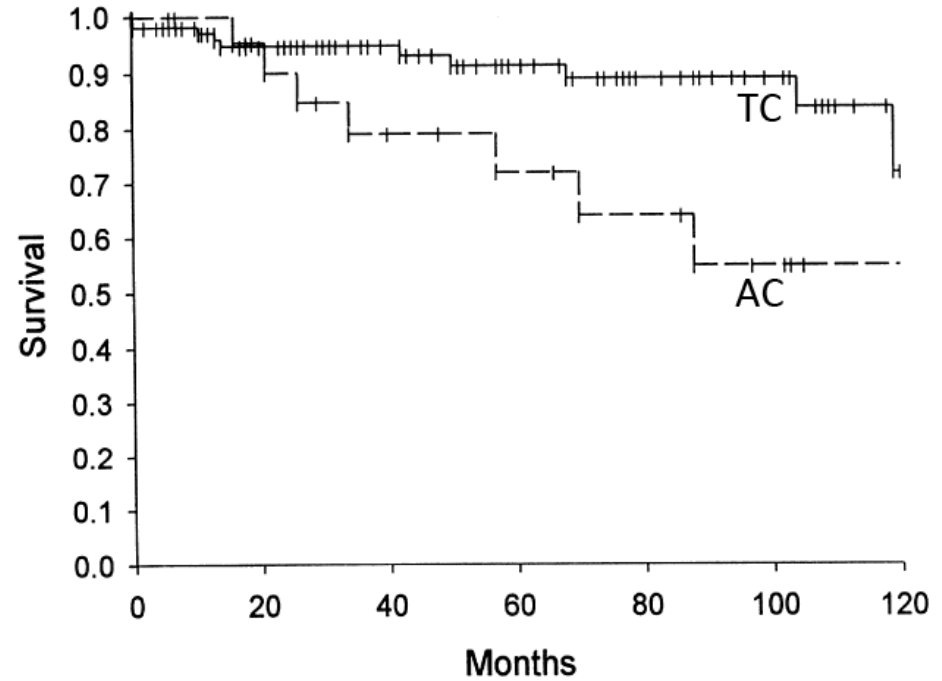
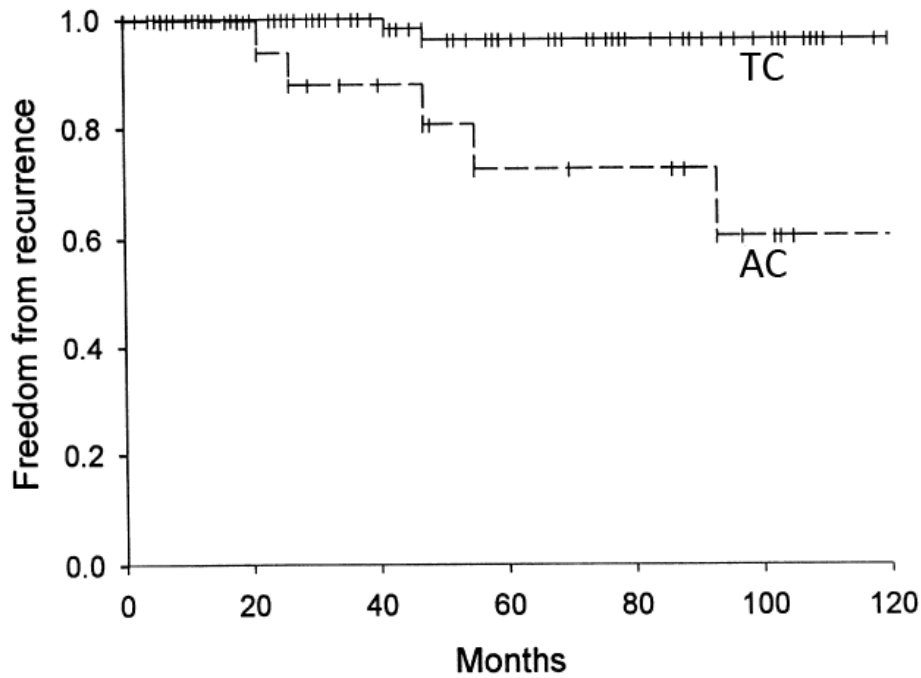


Differentiating Subtypes

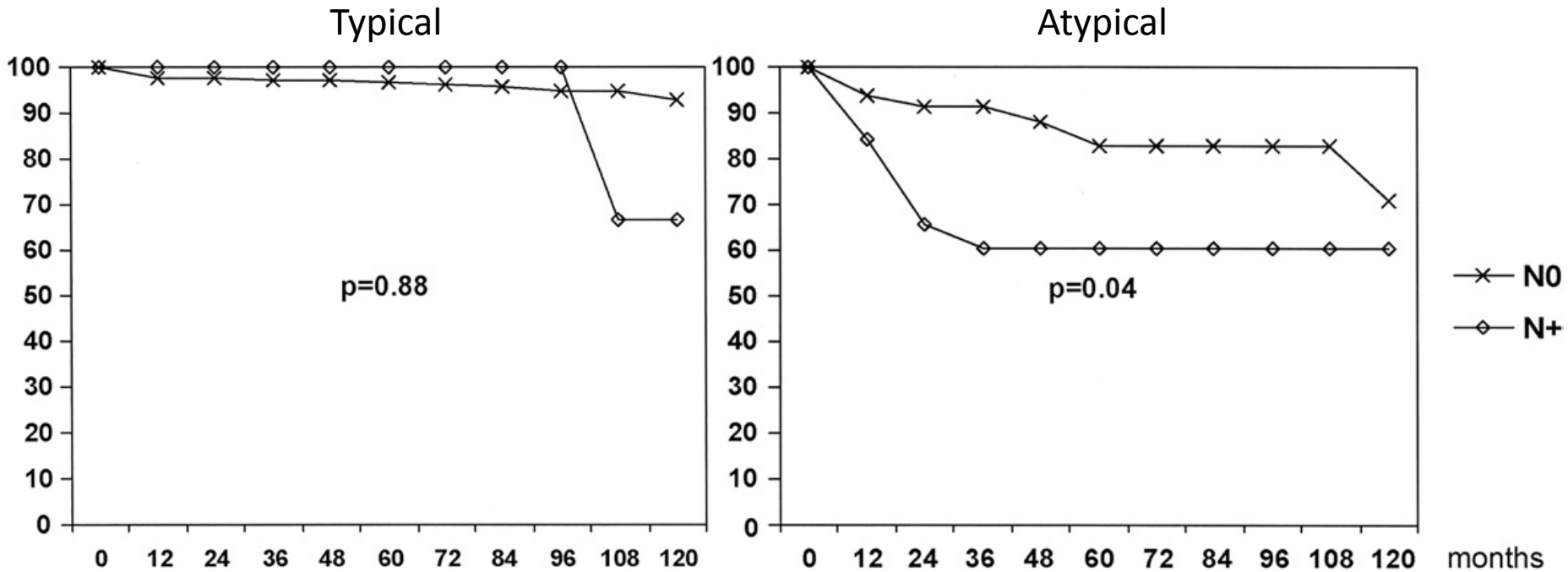
Variable	Typical	Atypical
Necrosis	—	+
Mitoses/10 high-power field	<2/2 mm ²	2–10/mm ²
P53	—	+
P16	—	+
P19	—	+
Retinoblastoma gene	—	+
Multiple neuroendocrine neoplasia type 1	—	+
Proliferation rate	Low	High
Angiogenesis	—	—



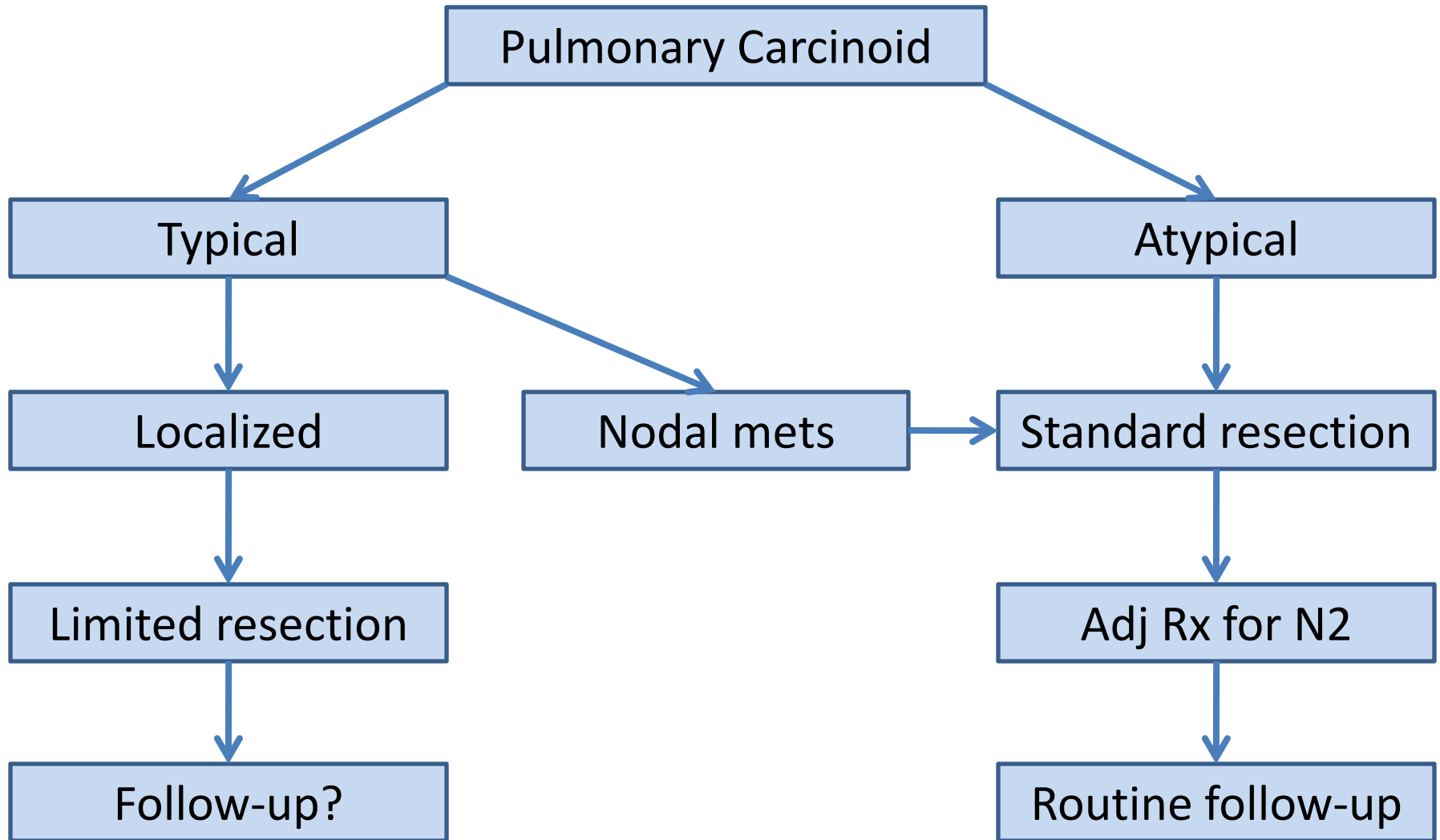
Survival After Resection



Survival by Subtype



Management Algorithm



Adjuvant Therapy

- Platinum, taxane, or streptozotocin based
- Angiogenesis pathway targets
 - VEGF
 - PDGF
 - mTOR
- Other
 - Interferon
 - Somatostatin analogues

