CAROTID BODY TUMORS
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1. **The Carotid Body**
   - Located in the adventitia, posterior aspect of the carotid bifurcation
   - Consists of paraganglionic cells derived from the neural crest ectoderm
   - Similar tissue found along the vagus nerve, internal jugular vein, aortic arch, adrenal medulla
   - Chemoreceptors: responds to ↓ $pO_2$, ↑ $pCO_2$, ↓ pH
     $\rightarrow$ ↑ BP, ↑ heart rate, ↑ rate and depth of respiration
     (Carotid sinus – baroreceptors: direct stimulation: $\rightarrow$ bradycardia, hypotension)

2. **Carotid Body Tumors**
   - 3 types
     - Sporadic
     - Associated with ↑ altitudes
     - Familial
   - Can be hereditary (increased incidence of bilateral CBT)
   - More common in high altitudes (associated with chronic hypoxia \(? COPD\))
   - Generally benign neoplasms, malignancy rate 2 – 6%
   - Slow growing
   - Seldom cause carotid compression
   - May involve cranial nerves
   - May have endocrine activity (± 4% secrete catecholamines)

3. **Mayo classification (Shamblin)**
   - **Group 1:**
     Localized
   - **Group 2:**
     Totally adherent and partially surrounding carotid arteries
   - **Group 3:**
     Intimately surrounding carotid arteries

4. **Clinical findings**
4.1. **Symptoms:**
   - Usually asymptomatic
   - May cause dysphagia
   - May cause hoarseness
4.2. **Signs:**
- Firm, non-tender mass
- Pulsatile
- Situated over carotid bifurcation
- Lateral mobility, no vertical mobility
- Compressible
- May protrude into oropharynx
- May cause Horner syndrome

5. **Differential diagnosis**
- Kinked / unfolded Carotid arteries
- Branchial cleft cyst
- Lymphadenopathy
- Metastatic Ca
- Carotid artery aneurysm
- Nerve sheath tumors

6. **Special investigation**
- Duplex Doppler
- Arteriogram:
  - Characteristic vascular blush
  - Vascular displacement (splaying of bifurcation)
- CT scan:
  - Evaluate extension to base of skull
- Endocrine studies:
  - Small number secrete catecholamines and metabolites (blood & urine)

7. **Treatment**
- Tends to slowly increase in size
- Surgical resection of tumor
- Arterial resection and bypass seldom required
- Relatively resistant to radiotherapy

8. **Peri- and post operative complications**
- Cranial nerve injury
- Stroke