Congenital Neck Masses

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DISCLOSURE
Objectives

- Describe specific neck masses in children
  - presentation and diagnosis
  - management
    - medical
    - surgical
Pediatric Neck Mass

Congenital
- Thyroglossal Duct Cyst
- Branchial cleft cyst
  - Cystic hygroma
  - Dermoid cyst

Acquired
- Infectious/Inflammatory
- Neoplasms
Congenital Masses

- Thyroglossal duct cysts
- Branchial cleft cysts
- Lymphatic malformations
- Hemangiomas
- Teratomas
- Dermoid cysts

- Laryngoceles
- Thymic cysts
- Vascular malformations
- SCM tumors of infancy
- Plunging ranulas
Acquired Masses

• Infectious
  – Bacterial
  – Viral
  – Fungal
  – Sialadenitis

• Inflammatory
  – Kawasaki
  – Sinus Histiocytosis
  – Drug-induced lymphadenopathy
  – Sarcoidosis
A Selection of Entities

- Thyroglossal duct cyst
- Branchial cleft cyst
- Pseudotumor of infancy
- Bacterial Abscess
Thyroglossal Duct Cyst

- Usually midline, however can be lateral
- Developmental defect of descent of thyroid through foramen cecum.
- Accounts for 50-70% of congenital neck masses
- Half of patients present before 20 yrs of age
Thyroglossal Duct Cyst

- Very common
  - up to half of all congenital neck masses
  - autopsy study: 7% incidence
  - surgery typically age 6

Embryology

- Thyroid development starts at tongue base and descends
- Remnant can persist
- Only thyroid tissue in 1%
- Thyroid cancer rarely

Diagnosis

- Near hyoid
- Age 5 or 6
- Moves with swallowing
- Enlarge with URI
- Can get infected
- Rarely a sinus
- Ultrasound needed
- Rarely need labs

www.learningradiology.com
Schwetschenau E, Kelley D. American Family Physician, Sept. 2002
Treatment

• Surgical removal
  – Sistrunk procedure
  – well tolerated
• If infected
  – antibiotics and wait
  – consider low-dose until surgery
  – correct diagnosis? CT scan?

Branchial Cleft Remnants

http://www.emedicine.com/radio/images/Large/267rad00107-01.jpg
Branchial Cleft Remnants

- First
  - external ear anomalies
- Fourth
  - very rare
  - follows recurrent laryngeal nerve
2\textsuperscript{nd} Branchial Cleft Cyst

- majority of branchial abnormalities
- 3\textsuperscript{rd} pretty similar
  - same location
  - much less common
- anterior and deep to upper end of SCM

2nd Branchial Anomalies

- cyst
  - often presents with infection
  - higher recurrence rate
- fistula / sinus / pit
- isolated remnants
  - cartilage that “goes nowhere”
Diagnosis

- physical exam
- infection
  - pain
  - dysphagia
- imaging
  - CT with contrast
  - occasionally MRI

Branchio-oto-renal Syndrome

• 2% of profound congenital hearing loss
• autosomal dominant
• major diagnostic criteria
  – hearing loss
  – renal anomalies
  – branchial fistulæ
  – external ear maldevelopment
    • canal stenosis
    • preauricular pits
    • deformed pinnae

Pseudotumor of Infancy

- Most diagnosed before 6 weeks of age
- Up to 1/250 live births
- Common signs
  - head tilt (92%)
  - mass or abnormal SCM (83%)
  - plagiocephaly (58%)
  - congenital hip dysplasia (10%)

Presentation and Evaluation

- Usually noticed within a month
- May or may not feel mass
- Check for associated conditions
  - facial / skull asymmetry
  - hip dysplasia
  - complete neurological exam
- eye exam?
- Ultrasound is high-yield

Pseudotumor of Infancy

• Other names
  – SCM tumor of infancy
  – fibromatosis colli
  – congenital muscular torticollis

• Newborn with SCM contracture
  – head tilts toward affected side
  – chin tilts toward opposite side
Etiology

- Crowding during development?
  - more than half first-born
  - traumatic delivery
  - breech presentation
  - histology suggests vascular occlusion
Treatment

• Not much to do
• Generally resolves within months
  – physical therapy might help
  – surgery rarely done
• unclear when indicated
• Botox with/instead?

Neck Abscess

- Bacterial lymphadenopathy can suppurate and lead to neck abscess.
- Remember there is a spectrum of disease
- How Long?
- Antibiotics?
- What Antibiotics?
Diagnosis

- Fever
- Elevated WBC
- Exam
- Imaging
  - Ultrasound
  - CT/ MRI
Treatment

- Antibiotics
- Close Observation
- NO STEROIDS
- Incision and Drainage
Neck Abscess

- CT scan with contrast shows rim enhancement and central hypolucency
- Often surrounding stranding and inflammatory changes
Incision and Drainage

- Culture
  - Aerobe
  - Anaerobe
- AFB
- Fungal
- Packing
- Drain
Why and When to Call

- Airway compromise
- Infection
- Malignancy
- Unsure
- Surgical removal
  - urgency
  - timing
Positioning on Exam

Sternocleidomastoid muscle stretches from the sternum to the skull behind the ear

"Wry neck"