I. Objectives

By the end of this presentation, the learner will be able to:

A. List common soft tissue masses
B. Verbalize understanding of appropriate workup and evaluation of soft tissue masses
C. Describe the work up and common etiologies for lymphadenopathy in pediatrics

II. Soft tissue masses

A. History questions

1. How long has it been there?
2. Has it changed in size?
3. Does it bother the patient?
4. Any skin color changes?
5. Any family history of any unusual lumps or bumps?
6. Any history of trauma?
7. Has there been any imaging of the mass?

B. Sebaceous cysts

1. Etiology:
   a. Formed from sac of retained sebum

2. Management
   a. Typically excise due to risk of infection
   b. Preoperative imaging of cysts on the nasal bridge or midline of skull
      i. Ultrasound, CT or MRI
   c. All are typically benign and do not recur

3. Types
   a. Dermoid cyst
      i. Contains ectodermal elements-sebaceous glands, hair follicles, and connective tissue
      ii. Mobile, nontender
b. Epidermoid cyst
   i. Contains sebaceous material
   ii. Mobile, nontender

c. Pilomatricoma (aka pilomatrixoma)
   i. Originate from hair follicle
   ii. Calcified epithelioma of Malherbe
   iii. Hard, feels calcified, mobile

C. Lipoma
   1. Fatty tumor
   2. Soft, may have ill-defined borders
   3. Consider surgical referral if large or bothersome to patient

D. Hemangioma
   1. Vascular lesion
   2. Appear in first few weeks of life, proliferate and then begin to involute
   3. Treatment
      a. Observation- typically best option
      b. Propanolol
      c. Laser ablation or surgical excision

E. Neurofibroma
   1. Benign tumor of nerve sheath
   2. Soft, typically mobile
   3. Inquire about family history of NF I
   4. Consider surgical referral if large or bothersome to patient

F. Fibroadenoma
   1. Non-cancerous breast tumor found in adolescent girls
   2. May be rubbery, firm, mobile, well circumscribed
   3. Imaging- ultrasound of breast
   4. Consider surgical intervention if ultrasound atypical for fibroadenoma, strong family history of breast cancer in young females, or at desire of patient and/or family
G. Pearls for the Primary Care Provider
   1. Typical physical exam findings
   2. Recommendation for work up before referral
      a. Less is usually best
   3. When to refer

III. Lymphadenopathy
   A. Common causes
      1. Reactive
      2. Viral
         a. Epstein-Barr virus
         b. Other viral illnesses
      3. Infectious
         a. Histoplasmosis
         b. Atypical mycobacterium
         c. Bartonella
         d. TB
      4. Malignancy
         a. Rare in pediatrics
   B. Evaluation and Management
      1. Reactive lymphadenopathy
         a. Observe
      2. Acute lymphadenitis
         a. Antibiotics
      3. Chronic lymphadenopathy
         a. PPD
         b. CXR
         c. Serologic testing
            i. Histoplasmosis
            ii. Bartonella
            iii. Epstein Barr virus
         d. Consider CBC, LDH, HIV
C. Immunoglobulins
   1. IgM- first antibody built during immune response
   2. IgG- typically indicates a long term or chronic infection
   3. IgE- found with allergic reactions and parasitic infections
   4. IgA- may be elevated in autoimmune diseases

D. Epstein-Barr Virus
   1. IgM antibody- appears first after exposure to the virus, tends to disappear in 4-6 weeks
   2. IgG antibody- emerges during acute infection, peaks at 2-4 weeks, trends down slightly, then stabilizes. Present for life
   3. If IgM and IgG are positive, this indicates an early acute infection
     If IgM negative, and IgG positive, this indicates a past infection

E. When excisional biopsy is indicated:
   1. Firm, rubbery lymph node
   2. >3cm and no response to antibiotics
   3. Present >6 weeks
   4. Supraclavicular lymph node

F. Surgical management
   1. Consider ultrasound
   2. Fine needle aspiration (FNA)
   3. Excisional biopsy

IV. Other Neck Masses
A. Thyroglossal duct cyst
   1. Embryonic remnant of descent of the thyroid
   2. Presents as midline neck cyst
      a. Most commonly overlies the hyoid bone
      b. Smooth, nontender
      c. Often moves with protrusion of tongue
   3. Typically presents by age 5 years
   4. Surgical management- Sistrunk procedure
B. Branchial cleft cyst

1. Remnant of embryonic branchial apparatus
2. May have sinus associated with cyst
3. First branchial cleft cyst:
   a. Extends from the submandibular opening superficial to the mandible and extends to the external auditory canal
4. Second branchial cleft cyst:
   a. Subcutaneous tissues beneath the platysma muscle, over the bifurcation of the carotid arteries, and enters the lateral wall of the pharyngeal fossa
5. Third and fourth branchial cleft cysts very rare
6. Treatment: surgical excision

V. Final Points

A. Primary Care Providers are our referral source
   1. Welcome new referrals
   2. Educate on lumps and bumps
   3. Assist with work up
   4. Give feedback on plan and pathology


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http://www.massgeneral.org/ortho/services/oncology/soft_tissue_tumors_benign.aspx
