Head & Neck Tumours
Part I

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Evaluation and Management of the Patient with a Neck Mass

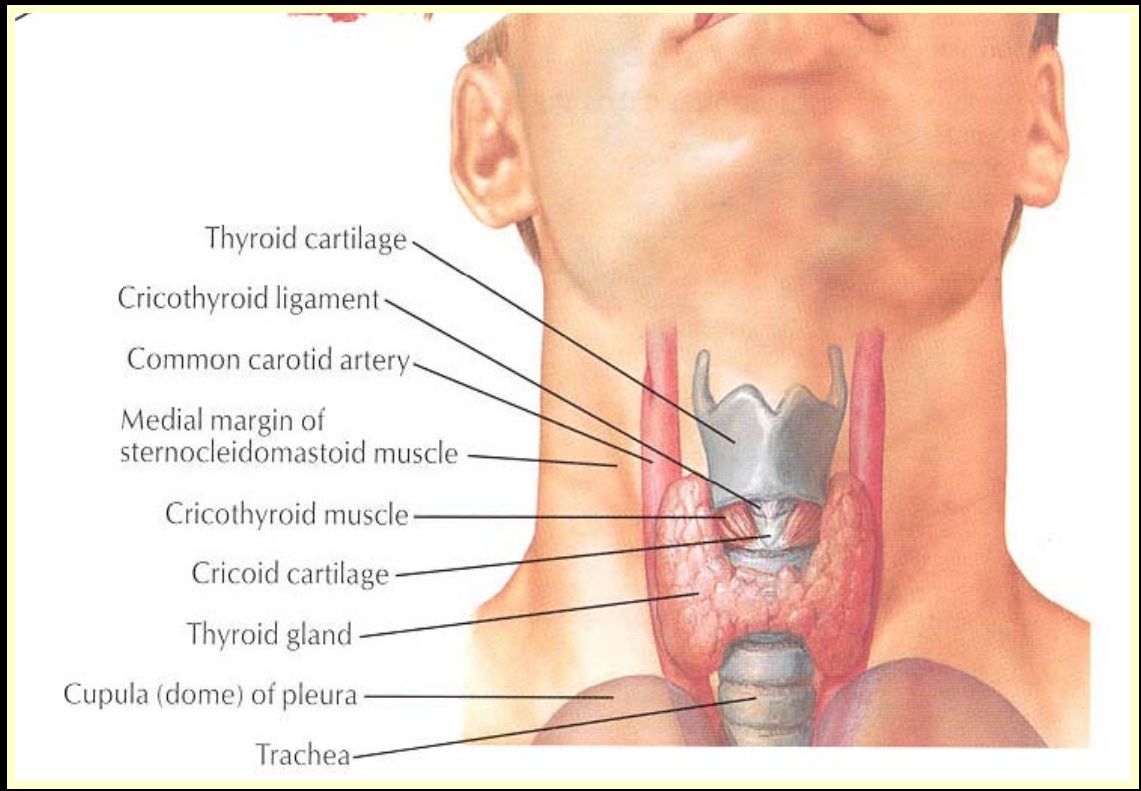
- **Introduction**
- **Anatomical Consideration**
- **Diagnostic Steps**
- **DDX**
- **Some Examples**
- **Summary**

Introduction

- **Common clinical finding**
- **All age groups**
- **Very complex differential diagnosis**
- **Systematic approach essential**

Anatomical Considerations

- **Prominent landmarks**
- **Triangles of the neck**
  - Lymphatic levels
- **Carotid bulb**



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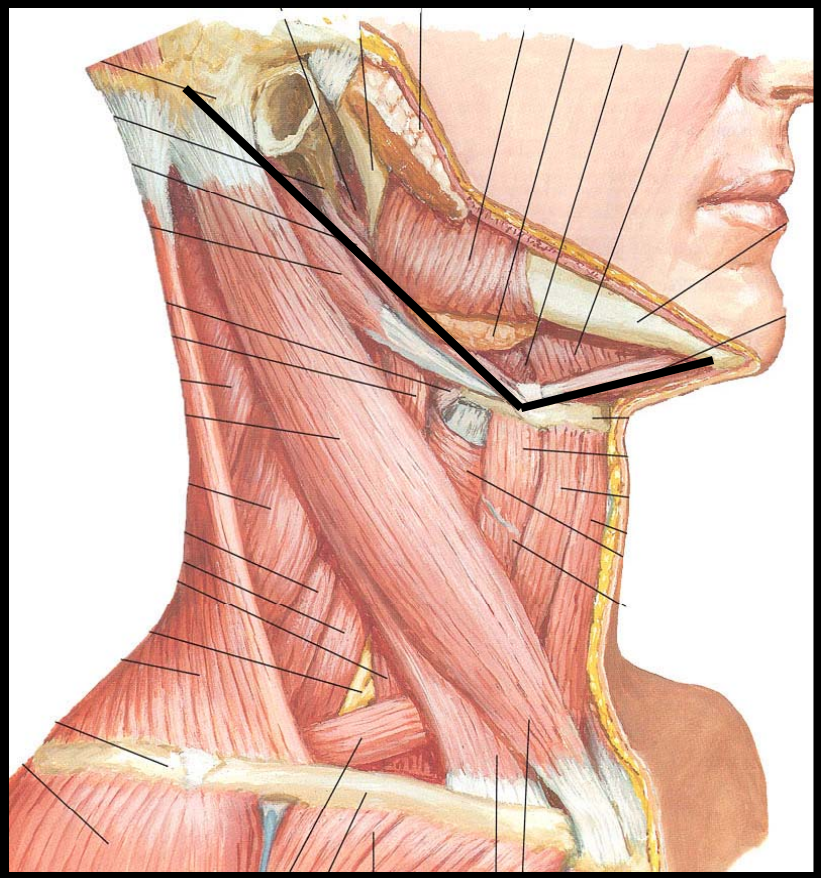

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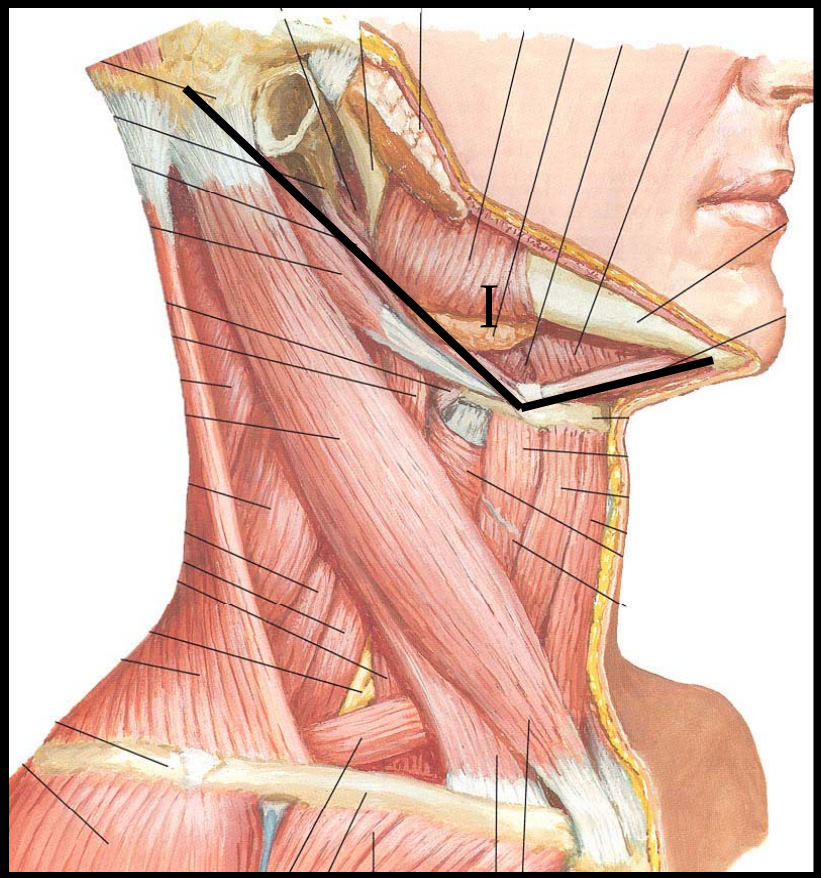

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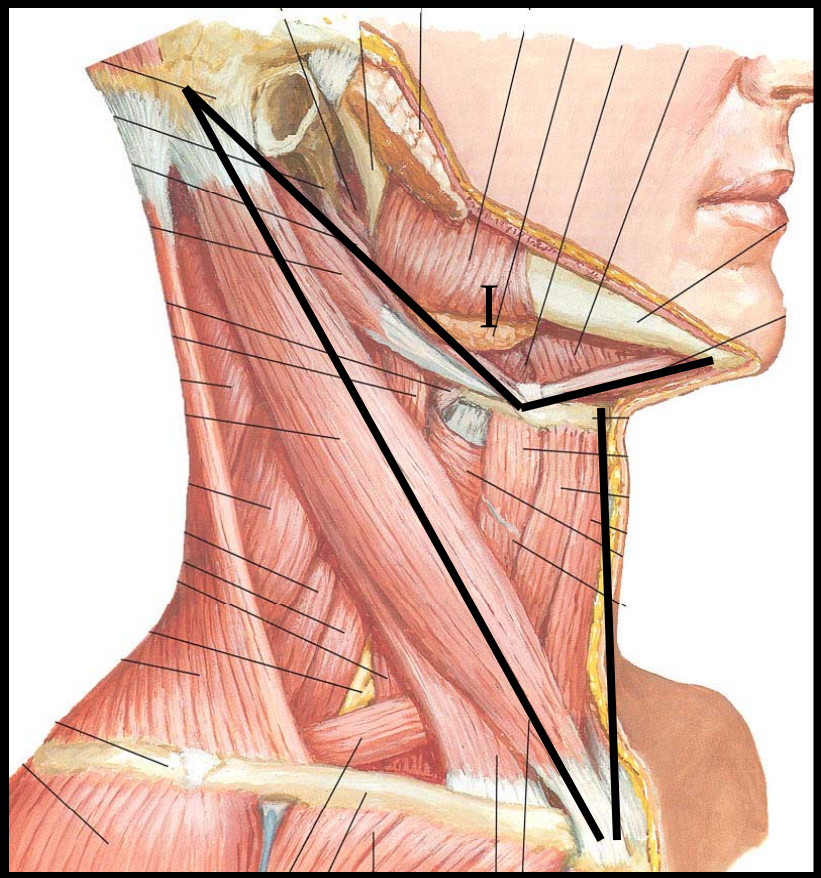

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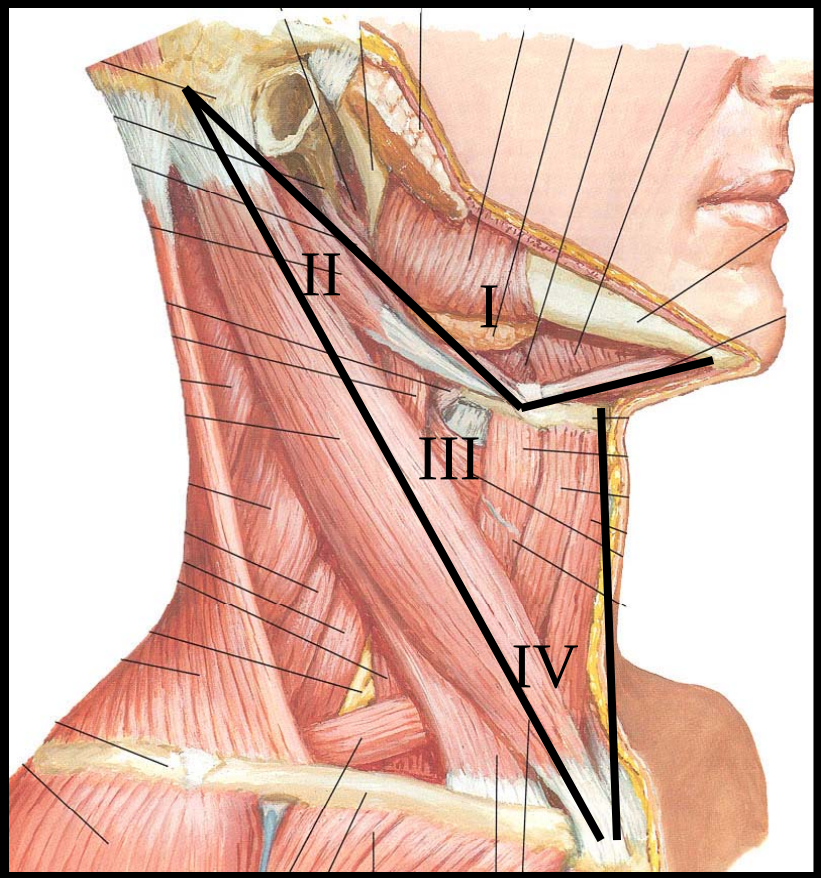

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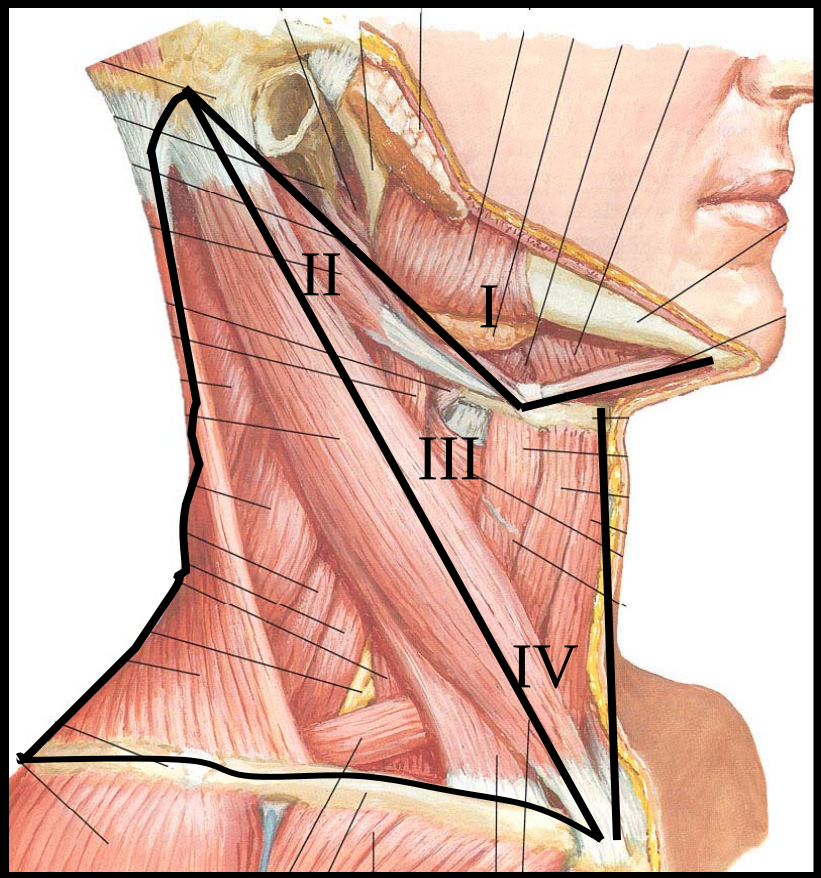

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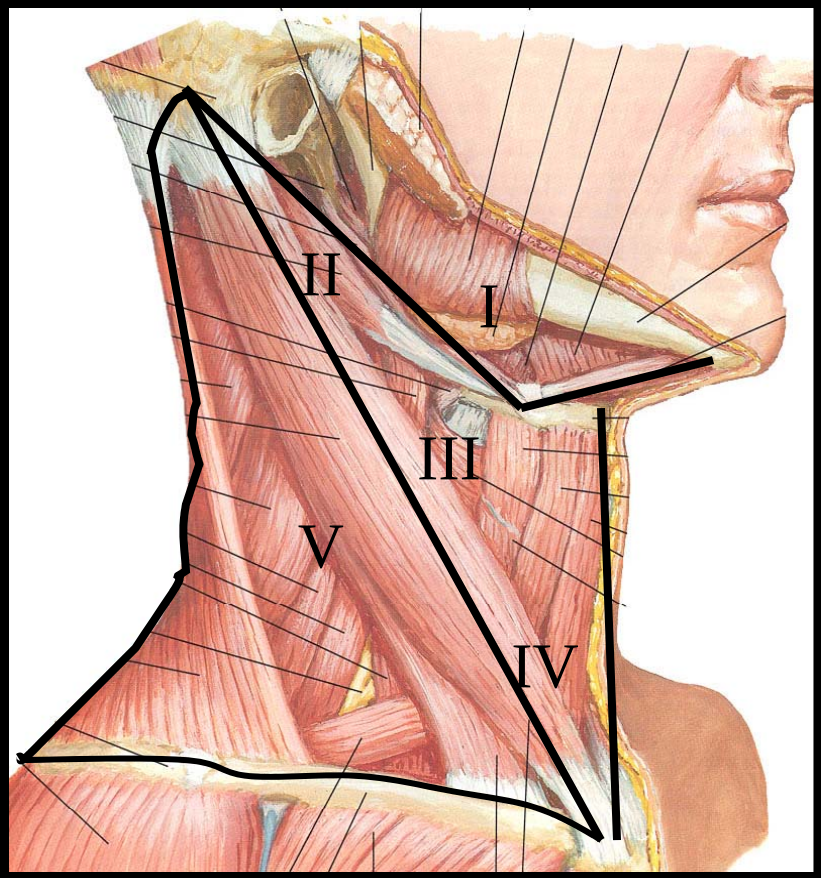

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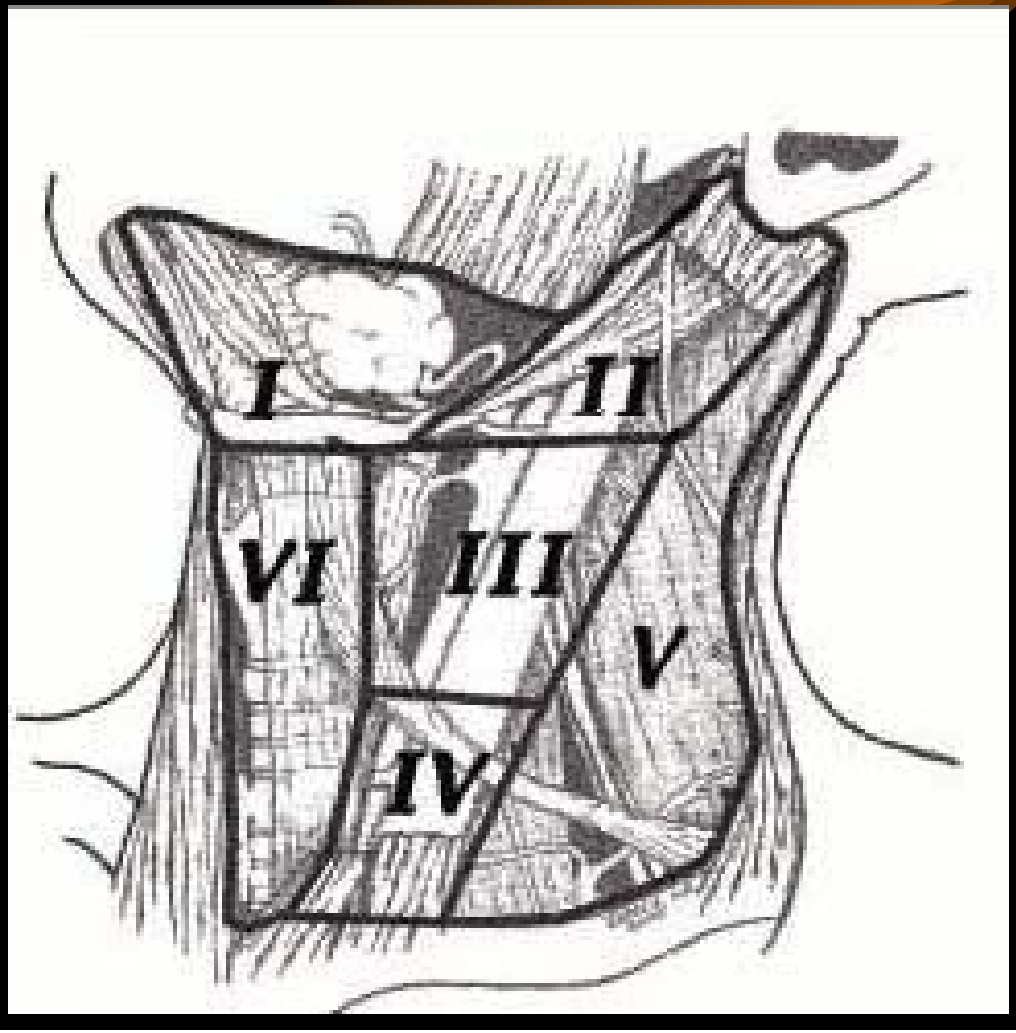

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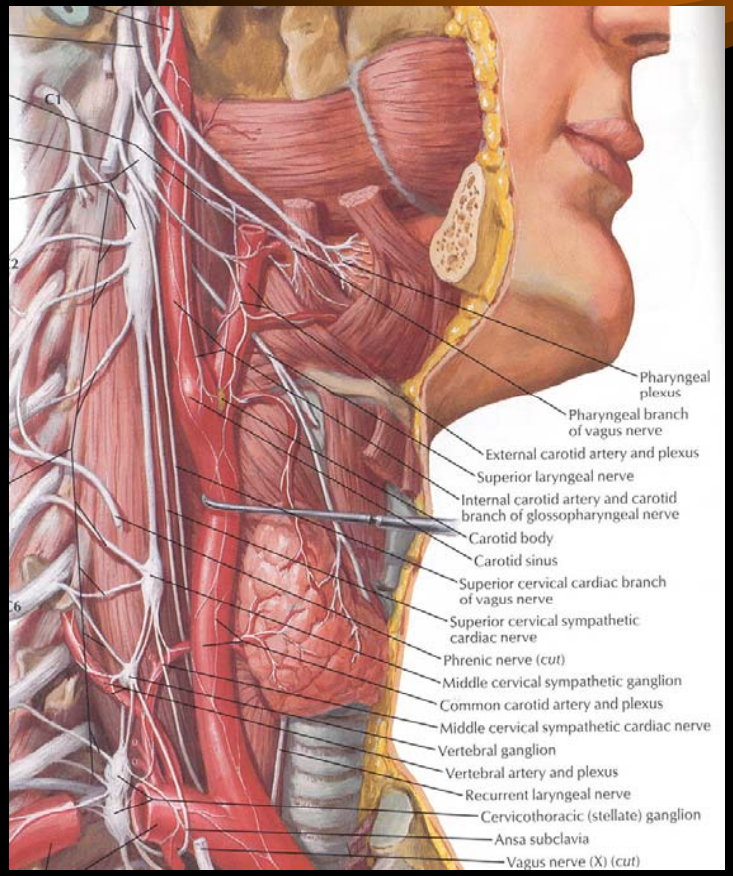
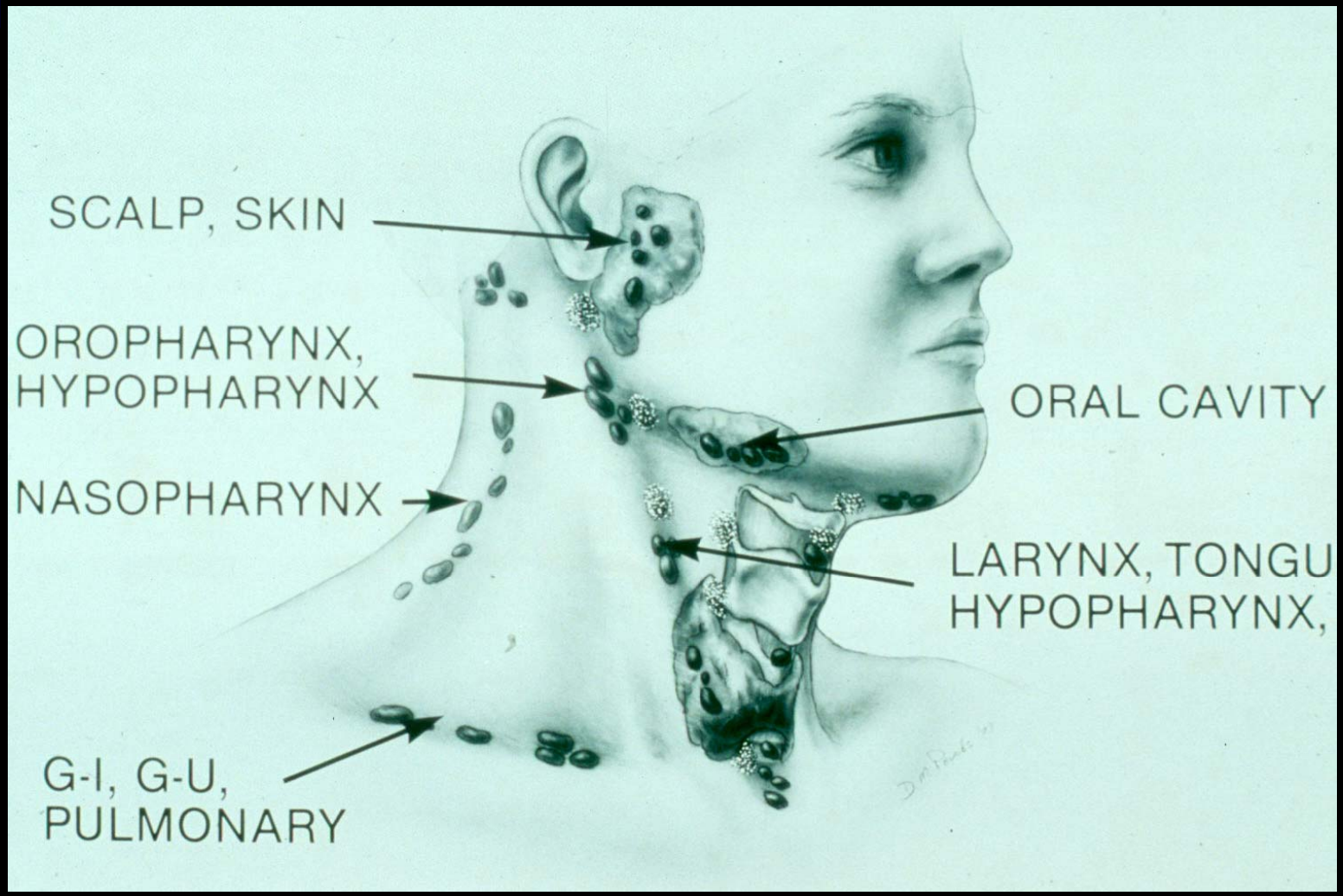


General Considerations

- **Patient age**
  - Pediatrics (0 – 15 years): mostly benign
  - Young adults (16 – 40 years): similar to pediatric
  - old adults (>40 years): High risk of malignancy
- **Location**
  - Congenital masses: consistent in location
  - Metastatic masses: key to primary lesion

Metastasis Location according to Various Primary Lesions



Diagnostic Steps

- **History**
  - Developmental time course
  - Associated symptoms (dysphagia, otalgia, voice)
  - Personal habits (tobacco, alcohol)
  - Previous irradiation or surgery
- **Physical Examination**
  - Complete head and neck exam (visualize & palpate)
  - Emphasis on location, mobility and consistency

Empirical Antibiotics

- **Inflammatory mass suspected**
- **Two week trial of antibiotics**
- **Follow-up for further investigation**

Diagnostic Tests

- **Fine needle aspiration biopsy (FNAB)**
- **Computed tomography (CT)**
- **Magnetic resonance imaging (MRI)**
- **Ultrasonography**
- **Radionucleotide scanning**

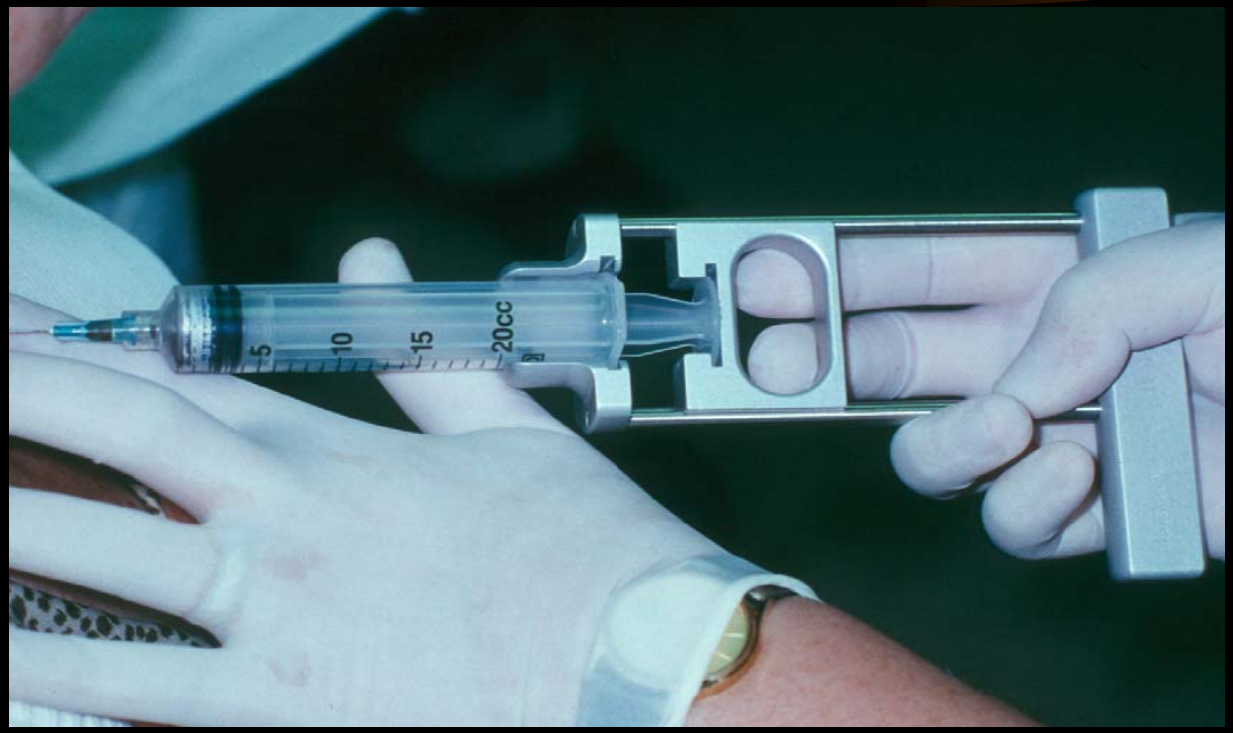
Fine Needle Aspiration Biopsy

- **Standard of diagnosis**
- **Indications**
  - Any neck mass that is not an obvious abscess
  - Persistence after a 2 week course of antibiotics
- **Small gauge needle**
  - Reduces bleeding
  - Seeding of tumor – not a concern
- **No contraindications (vascular ?)**

Fine Needle Aspiration Biopsy

- **Proper collection required**
- **Minimum of 4 separate passes**
- **Skilled cytopathologist essential**
- **On-site review best**

Fine Needle Aspiration Biopsy



Computed Tomography

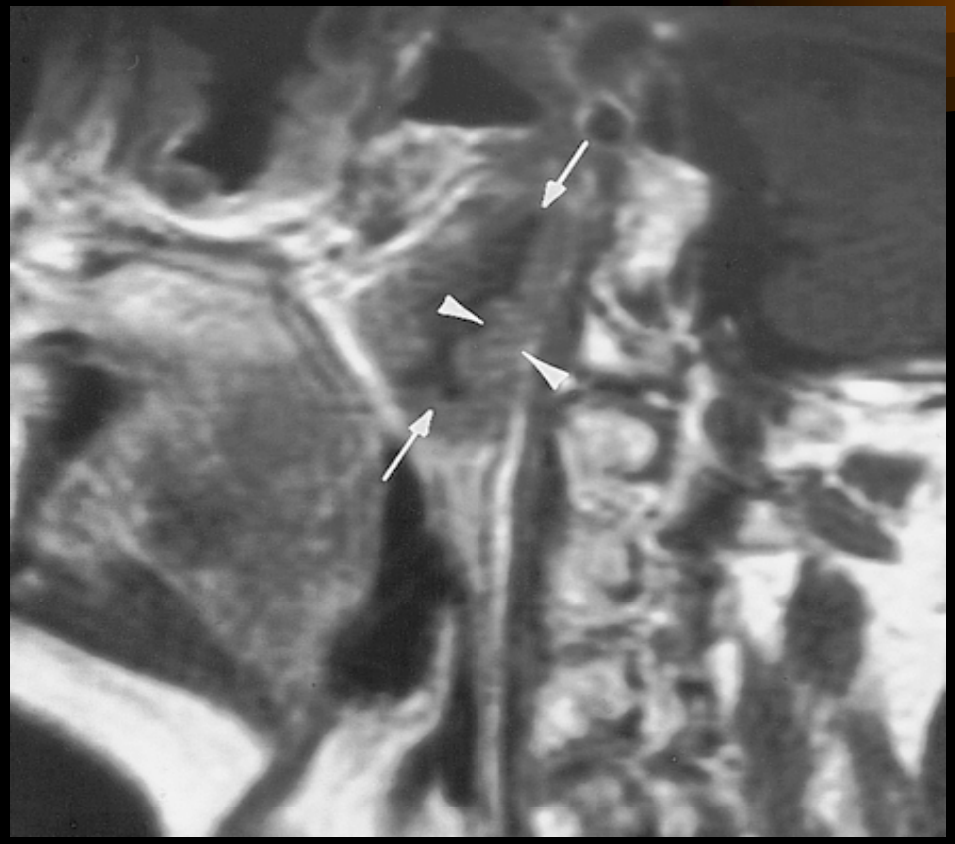
- **Distinguish cystic from solid**
- **Extent of lesion**
- **Vascularity (with contrast)**
- **Detection of unknown primary (metastatic)**
- **Pathologic node (lucent, >1.5cm, loss of shape)**
- **Avoid contrast in thyroid lesions**

Computed Tomography

Magnetic Resonance Imaging

- **Similar information as CT**
- **Better for upper neck and skull base**
- **Vascular delineation with infusion**

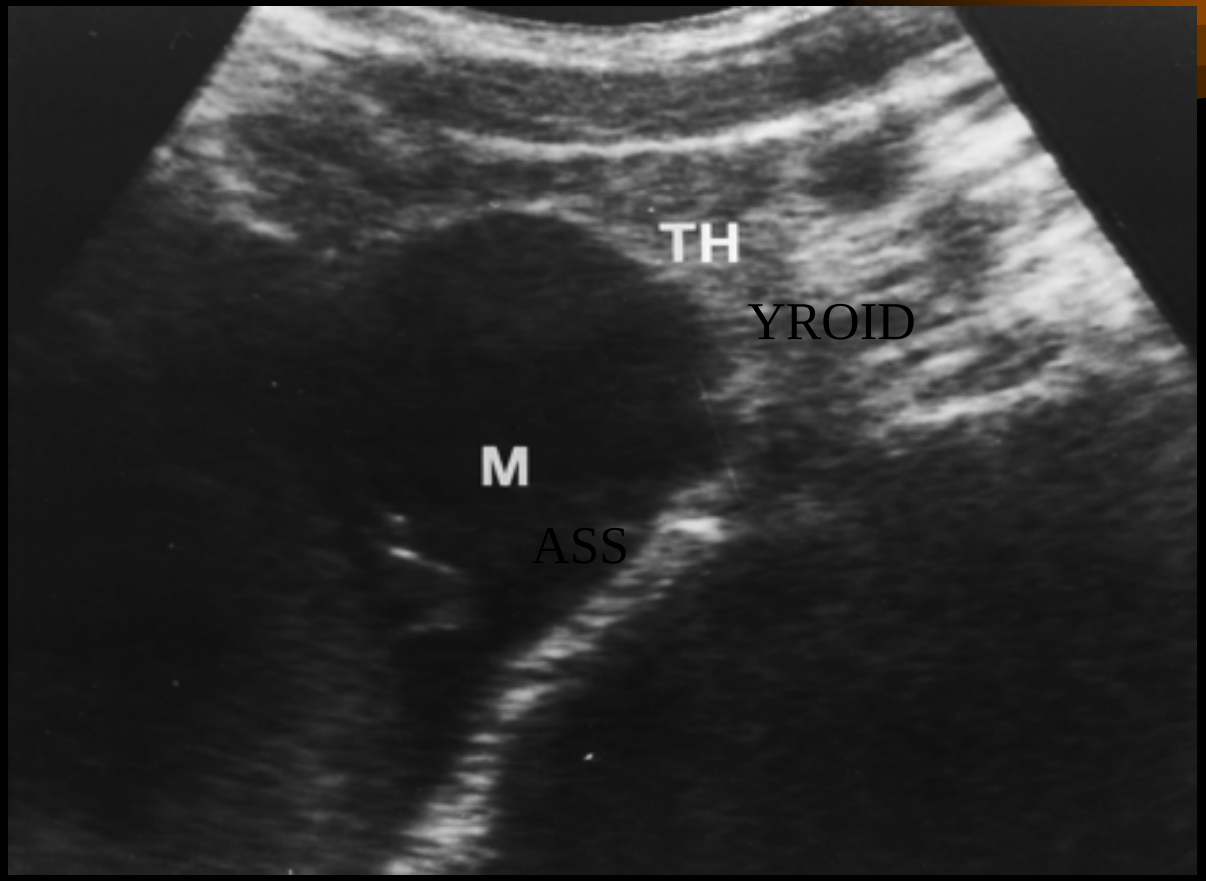
Magnetic Resonance Imaging



Ultrasonography

- **Less important now with FNAB**
- **Solid versus cystic masses**
- **Congenital cysts from solid nodes/tumors**
- **Noninvasive (pediatric)**

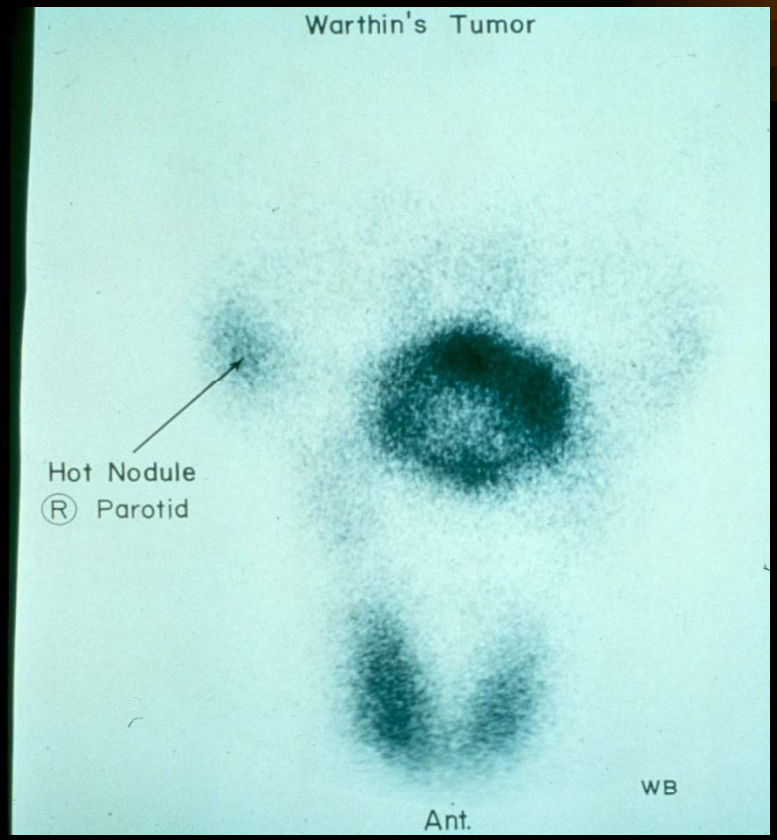
Ultrasonography



Radionucleotide Scanning

- **Salivary and thyroid masses**
- **Location – glandular versus extra-glandular**
- **Functional information**
- **FNAB now preferred for for thyroid nodules**
  - Solitary nodules
  - Multinodular goiter with new increasing nodule
  - Hashimoto's with new nodule

Radionucleotide Scanning



Differential Diagnosis

Table 1. Common Neck Masses

Neoplastic	Congential/Developmental	Inflammatory
Metastatic Unknown primary epidermoid carcinoma	Sebaceous cysts	Lymphadenopathy
Primary head and neck epidermoid carcinoma or melanoma	Branchial cleft cysts	Bacterial
Adenocarcinoma	Thyroglossal duct cysts	Viral
Thyroid	Lymphangioma/hemangioma	Granulomatous
Lymphoma	Dermoid cysts	Tuberculous
Salivary	Ectopic thyroid tissue	Catscratch
Lipoma	Laryngocele	Sarcoidosis
Angioma	Pharyngeal diverticulum	Fungal
Carotid body tumor	Thymic cysts	Sialadenitis
Rhabdomyosarcoma		Parotid
		Submaxillary
		Congenital cysts
		Throtrast granulomas

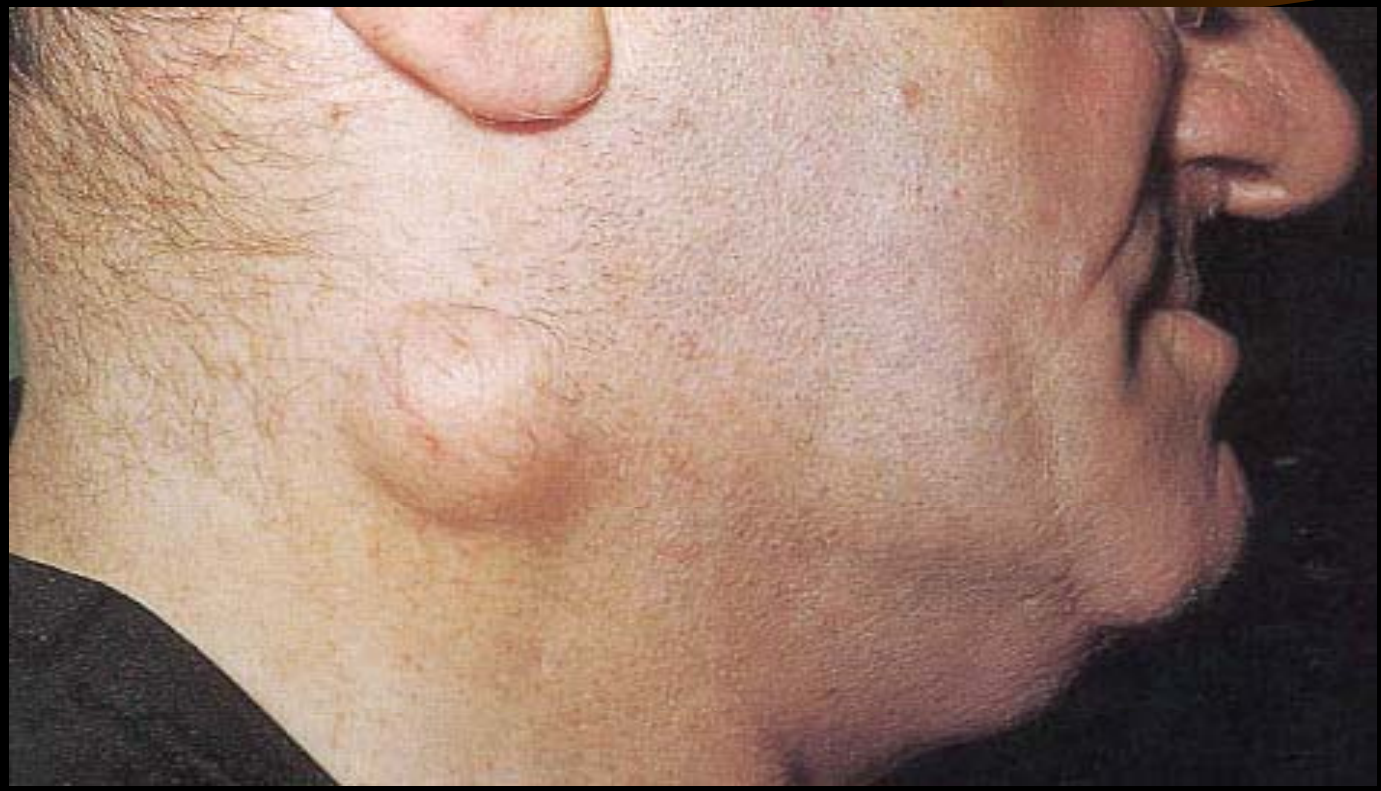
Congenital and Developmental Mass

- **Epidermal and sebaceous cysts**
- **Branchial cleft cysts**
- **Thyroglossal duct cyst**
- **Vascular tumors**

Epidermal and Sebaceous Cysts

- **Most common congenital/developmental mass**
- **Older age groups**
- **Clinical diagnosis**
  - Elevation and movement of overlying skin
  - Skin dimple or pore
- **Excisional biopsy confirms**

Epidermal and Sebaceous Cysts



Branchial Cleft Cysts

- **Branchial cleft anomalies**
- **2nd cleft most common (95%) – tract medial to XII nerve between internal and external carotids**
- **1st cleft less common – close association with facial nerve possible**
- **3rd and 4th clefts rarely reported**
- **Present in older children or young adults often following URI**

Branchial Cleft Cysts

- **Most common as smooth, fluctuant mass underlying the SCM**
- **Skin erythema and tenderness if infected**
- **Treatment**
  - Initial control of infection
  - Surgical excision, including tract
- **May necessitate a total parotidectomy (1st cleft)**

Branchial Cleft Cysts

Thyroglossal Duct Cyst

- **Most common congenital neck mass (70%)**
- **50% present before age 20**
- **Midline (75%) or near midline (25%)**
- **Usually just inferior to hyoid bone (65%)**
- **Elevates on swallowing/protrusion of tongue**
- **Treatment is surgical removal (Sis trunk) after resolution of any infection**

Thyroglossal Duct Cyst

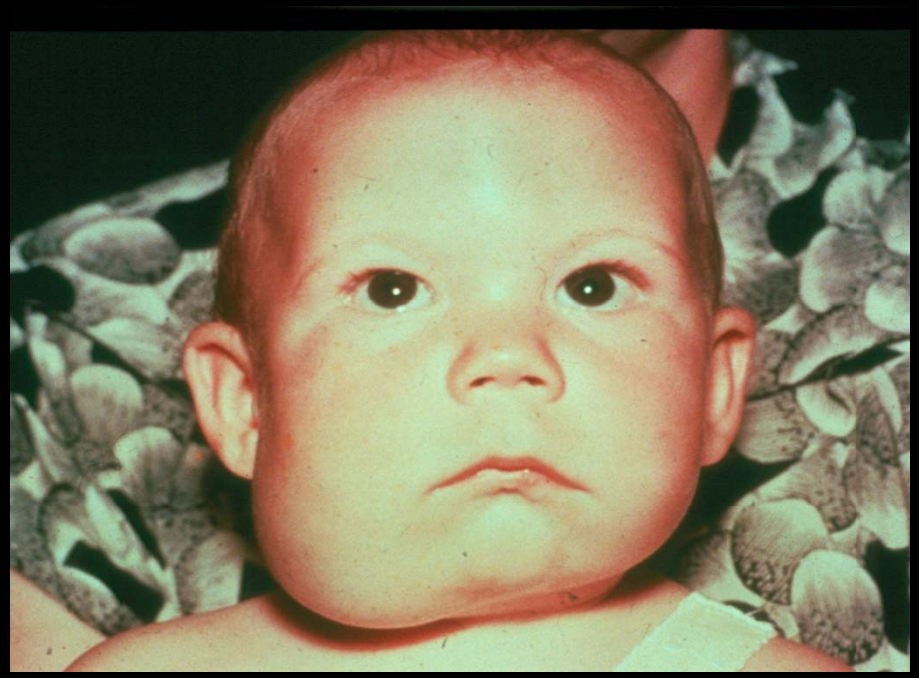
Vascular Tumors

- **Lymphangiomas and hemangiomas**
- **Usually within 1st year of life**
- **Hemangiomas often resolve spontaneously, while lymphangiomas remain unchanged**
- **CT/MRI may help define extent of disease**

Vascular Tumors

- **Treatment**
  - Lymphangioma – surgical excision for easily accessible or lesions affecting vital functions; recurrence is common
  - Hemangiomas – surgical excision reserved for those with rapid growth involving vital structures or associated thrombocytopenia that fails medical therapy (steroids, interferon)

Vascular Tumors (lymphangioma)



Vascular Tumors (hemangioma)

Inflammatory Disorders

- **Lymphadenitis**
- **Granulomatous lymphadenitis**

Lymphadenitis

- **Very common, especially within 1st decade**
- **Tender node with signs of systemic infection**
- **Directed antibiotic therapy with follow-up**
- **FNAB indications (pediatric)**
  - Actively infectious condition with no response
  - Progressively enlarging
  - Solitary and asymmetric nodal mass
  - Supraclavicular mass (60% malignancy)
  - Persistent nodal mass without active infection

Lymphadenopathy

- **Equivocal or suspicious FNAB in the pediatric nodal mass requires open excisional biopsy to rule out malignant or granulomatous disease**

Granulomatous lymphadenitis

- **Infection develops over weeks to months**
- **Minimal systemic complaints or findings**
- **Common etiologies**
  - TB, atypical TB, cat-scratch fever, actinomycosis, sarcoidosis
- **Firm, relatively fixed node with injection of skin**

Granulomatous lymphadenitis

- **Typical *M. tuberculosis***
  - more common in adults
  - Posterior triangle nodes
  - Usually responds to anti-TB medications
  - May require excisional biopsy for further workup

Granulomatous lymphadenitis

- **Atypical *M. tuberculosis***
  - Pediatric age groups
  - Anterior triangle nodes
  - Brawny skin, induration and pain
  - Usually responds to complete surgical excision or curettage

Granulomatous lymphadenitis

- **Cat-scratch fever (*Bartonella*)**
  - Pediatric group
  - Preauricular and submandibular nodes
  - Spontaneous resolution with or without antibiotics

Granulomatous lymphadenitis

Summary

- **Extensive differential diagnosis**
- **Age of patient is important**
- **Accurate history and complete exam essential**
- **FNAB – important diagnostic tool**
- **Possibility for malignancy in any age group**
- **Close follow-up and aggressive approach is best for favorable outcomes**