

„Cervical Lump“



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Pediatric Otolaryngology

Bluestone et al.

TABLE 97-1. Diagnosis of Neck Masses by Location

Parotid (Preauricular) Region	
Inflammatory	Inflammatory
Lymphadenitis from upper face and anterior scalp	Lymphadenitis from oropharyngeal
Panarititis	Neoplastic
Viral—puncta red, secretions clear	Parotid neoplasms
Bacterial—puncta normal, secretions purulent	Lymphoma
Granuloma	Midline Neck Region
Tuberculosis and nontuberculous mycobacterium	
Sarcoidosis	Congenital
Congenital	Thyroglossal duct cyst or ectopic thyroid, dermoid cyst
Lymphatic malformation, hemangioma	Inflammatory
Traumatic	Lymphadenitis
Sialoceles	Neoplastic
Neoplastic	Thyroid malignancy
Benign—pleomorphic adenoma	Anterior Border Sternocleidomastoid Muscle
Malignant—mucoepidermoid carcinoma	
Lymphoma	Congenital
Idiopathic	Branchial cleft anomalies, laryngocele, lymphatic or vascular malformation,
Sjögren syndrome—sialogram shows "bunch of grapes" pattern	sternocleidomastoid tumor of infancy, thymic cyst or ectopic thymus
Sarcoidosis (uveo-parotid fever)	Neoplastic
Postauricular Region	Carotid body tumor
	Lymphoma
Congenital	Sarcoma
First branchial cleft anomalies (type I)	Spinal Accessory Region
Inflammatory	
Lymphadenitis from posterior scalp	Congenital
Submental Region	Lymphatic or vascular malformation
	Neoplastic
Congenital	Lymphoma
Thyroglossal duct cyst or ectopic thyroid	Metastatic (from nasopharynx)
Lymphatic malformation	Inflammatory
Dermoid cyst	Lymphadenitis (from nasopharynx)
Vascular malformation	Paratracheal Region
Inflammatory	
Lymphadenitis from oral or nasal cavity	Inflammatory
Neoplastic	Lymphadenitis
Thyroglossal duct papillary carcinoma	Congenital
Submandibular Region	Thyroglossal duct cyst
	Branchial cleft anomalies
Congenital	Neoplastic
Lymphatic or vascular malformation	Thyroid or parathyroid neoplasms
Inflammatory	Suprascapular Region
Lymphadenitis from cheek or midoral cavity	
Sialadenitis	Congenital
Cystic fibrosis—submandibular gland enlarged	Lymphatic or vascular malformation
Neoplastic	Neoplastic
Salivary gland neoplasms	Lipoma
Other	Lymphoma
Plunging ranula	Metastatic lesion (lung, esophagus, renal, testicular)
Jugulodigastric Region	Suprasternal Region
Normal	Congenital
Transverse process of C ₂ or styloid process	Dermoid cyst
Congenital	Thymic cyst or ectopic thymus
First or second branchial cleft cyst	Neoplastic
Vascular or lymphatic malformation	Lipoma
	Metastatic lesion

From May M. Neck masses in children: diagnosis and treatment. *Pediatr Ann* 5:8, 1976.

Differential diagnosis lymphadenopathy

Infektiöse Erkrankungen:	Immunologische Erkrankungen:	Metabolische Erkrankungen:	Neoplastische Erkrankungen:
<p><i>Viral:</i></p> <p>EBV, CMV, Röteln, Masern, Varizellen, HIV, Adenovirus, HSV II, Rhinovirus, Enterovirus, Parvovirus B19</p> <p><i>Bakteriell:</i></p> <p>Staphylokokken, Streptokokken, Tuberkulose, Nichttuberkulöse Mykobakterien (NTM), Brucellose, Bartonella henselae, Tularämie, Mycoplasma pneumoniae, Yersinia pestis, Pasteurella multocida, zervikale Aktinomykose</p> <p><i>Protozoen/Parasiten:</i></p> <p>Toxoplasmose, Trypanosomen, Toxocara, Leishmaniose, Mikrofilarien</p> <p><i>Pilze:</i></p> <p>Dermatophyten (Tinea), Kokzidioidomykose, Histoplasmose, Blastomykose</p>	<p><i>Granulomatöse Erkrankungen:</i></p> <ul style="list-style-type: none"> – Sarkoidose – Common variable Immunodeficiency (CVID) – Hyper-IgM-Syndrom – Septische Granulomatose <p><i>Rheumatoide Erkrankungen:</i></p> <ul style="list-style-type: none"> – Arthritiden – Systemischer Lupus erythematoses – Dermatomyositis <p><i>Lymphoproliferative und histiozytäre Erkrankungen:</i></p> <ul style="list-style-type: none"> – Sinus Histiozytose mit massiver Lymphadenopathie (Rosai-Dorfman-Erkrankung) – M. Castleman – Autoimmun Lymphoproliferatives Syndrom (ALPS) – Langerhans-Zell-Histiozytose – Hämophagozytische Lymphohistiozytose (HLH) – Kawasaki Syndrom – Kikuchi-Fujimoto-Lymphadenitis PFAPA Syndrom 	<p><i>Speicherkrankheiten:</i></p> <ul style="list-style-type: none"> – Niemann Pick Krankheit – Morbus Gaucher – M. Tangier – Amyloidose <p><i>Hypersensitivität:</i></p> <ul style="list-style-type: none"> – Serumkrankheit – Medikamentenreaktionen (z. B.: Antiepileptika; Heparin; Tuberkulostatika wie Isoniazid,; Antibiotika wie Cephalosporine, Penicilline; Phenytoin, Hydralazin, Procainamid, Allopurinol, Dapsone, Carbamazepin, Atenolol, Captopril, Gold, Primidone, Pyrimethamine, Quinidine, Sulfonamid, Sulindac) 	<p><i>Maligne Lymphome:</i></p> <ul style="list-style-type: none"> – Non-Hodgkin-Lymphome – Morbus Hodgkin <p><i>Leukämien:</i></p> <ul style="list-style-type: none"> – Akute lymphoblastische Leukämie – Akute myeloische Leukämie <p><i>Metastatischer Lymphknotenbefall solider Tumoren:</i></p> <ul style="list-style-type: none"> – Rhabdomyosarkom – Neuroblastom – Nasopharynxkarzinom

congenital, infectious, neoplastic ?



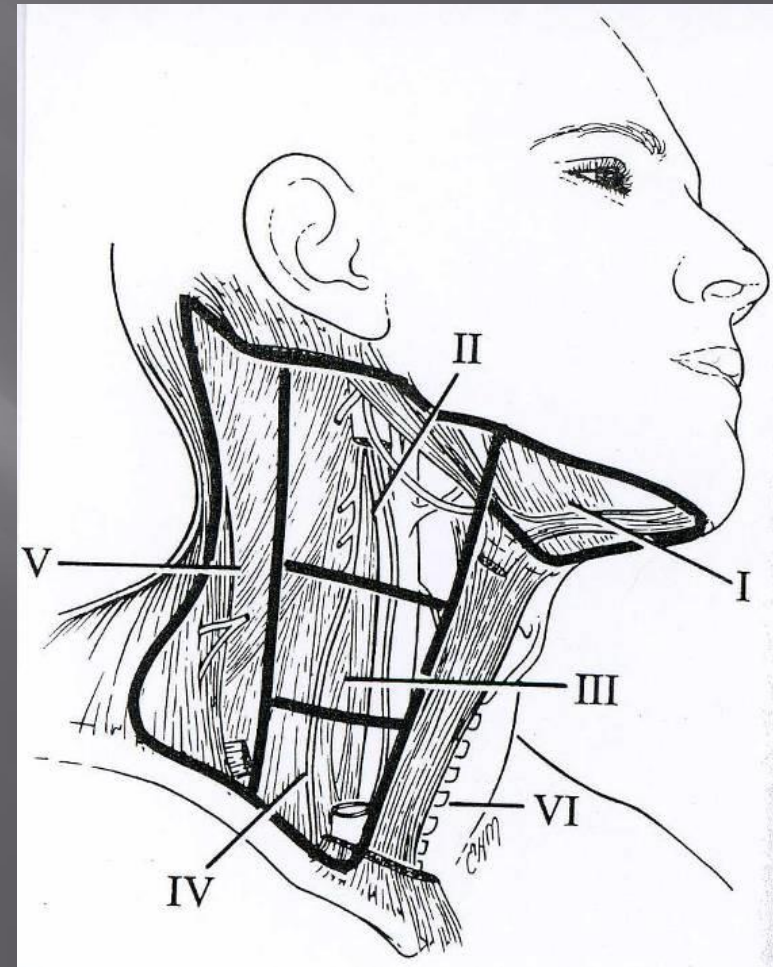
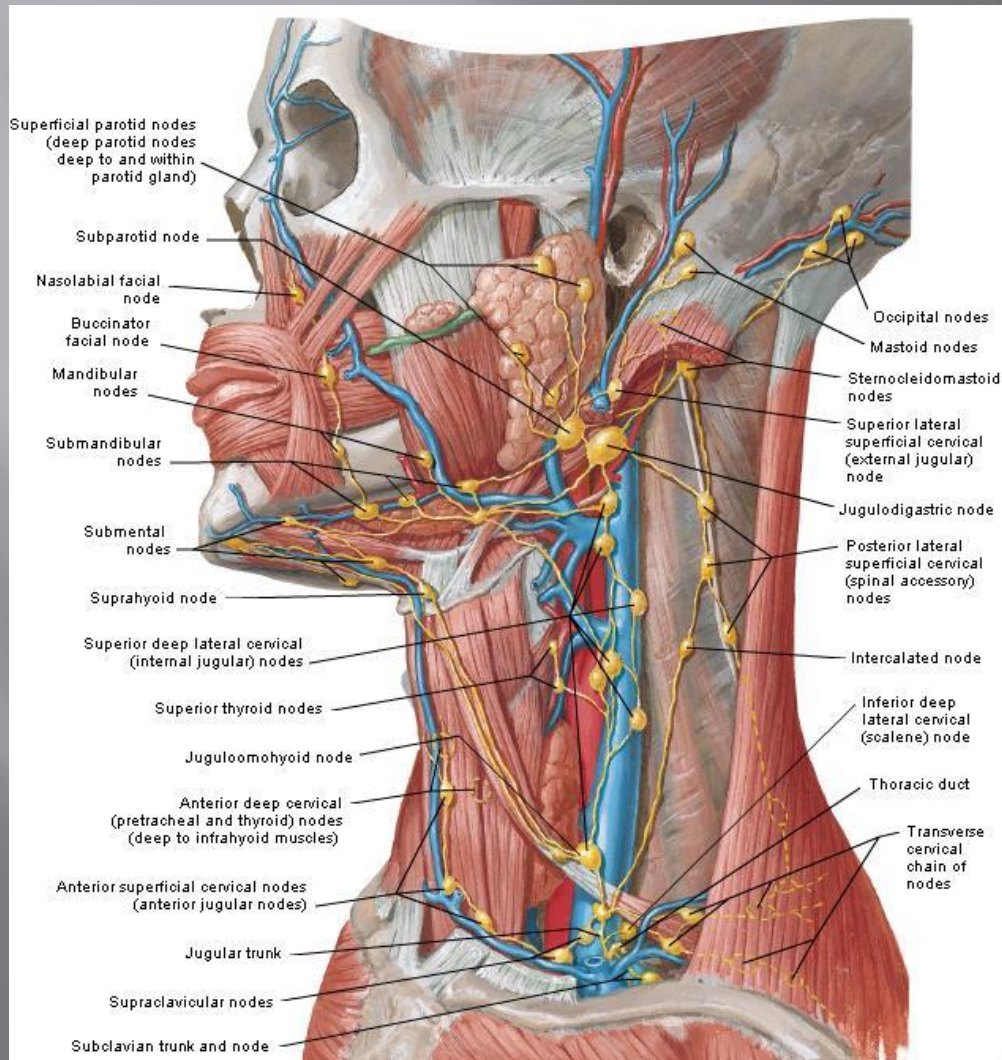
most frequent

History

- Visit abroad
- Animal contact (farm, pet)
- Family history
- B symptoms
- Walks in forests

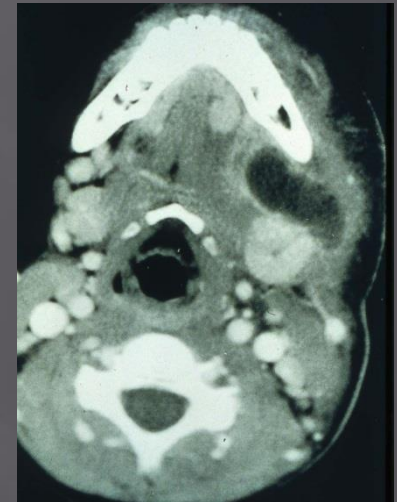
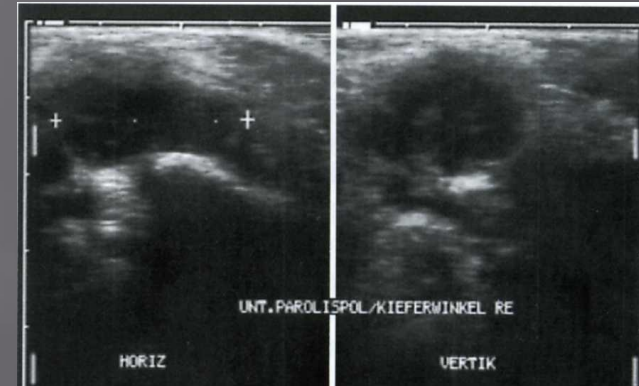
Lymphnodes Anatomy

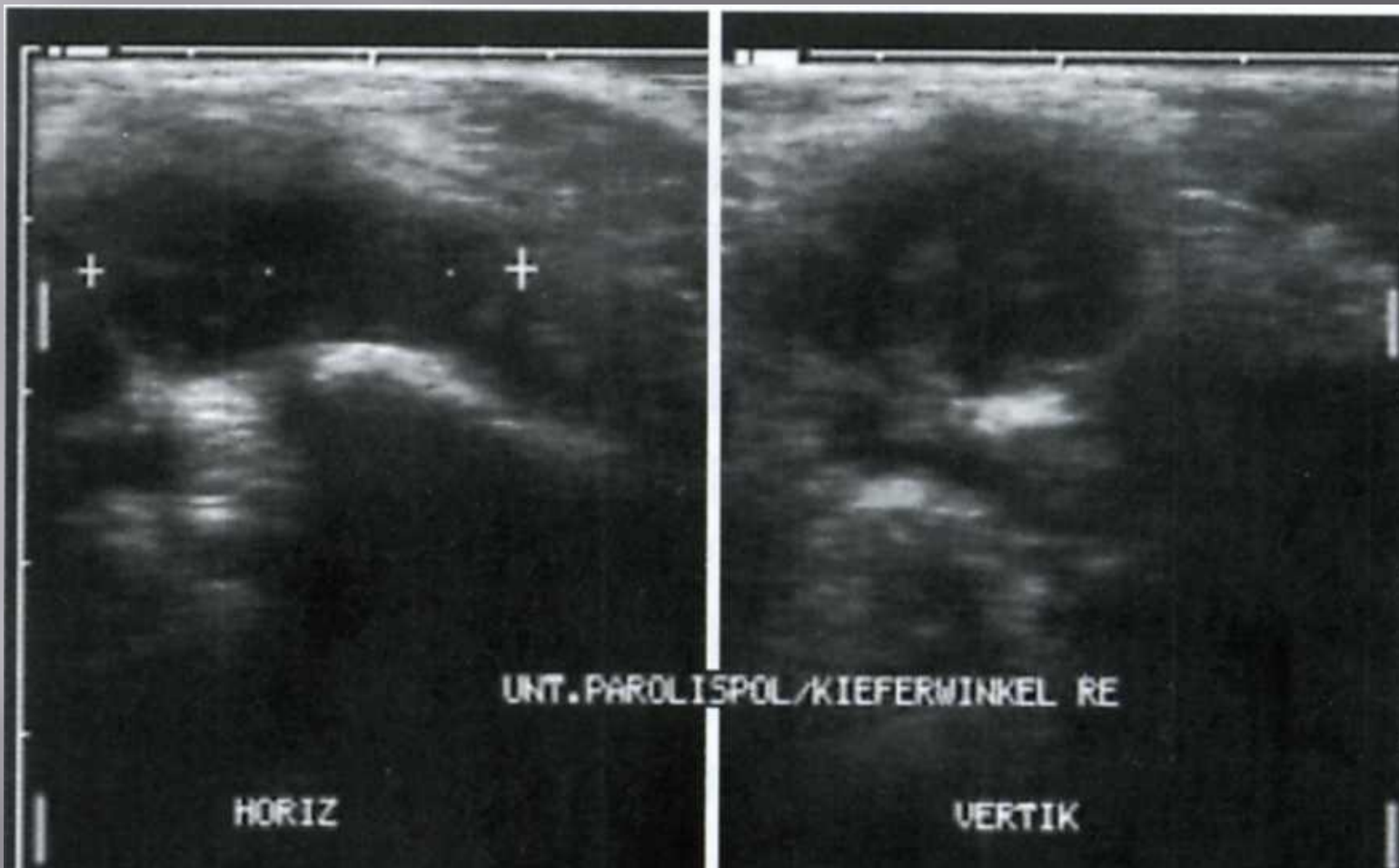
Number lymphnodes Head&Neck: 300 (Total 800)



Evaluation

- Sonography
- Computed tomography
- Fine-/ core-needle biopsy
- Excisional biopsy
- Magnetic resonance imaging
- FACS (fluorescence-activated cell sorting)
- (X-ray lateral)
- (PET)





advantage:
rapid
malignancy
painless
repeatable

disadvantage:
differentiation



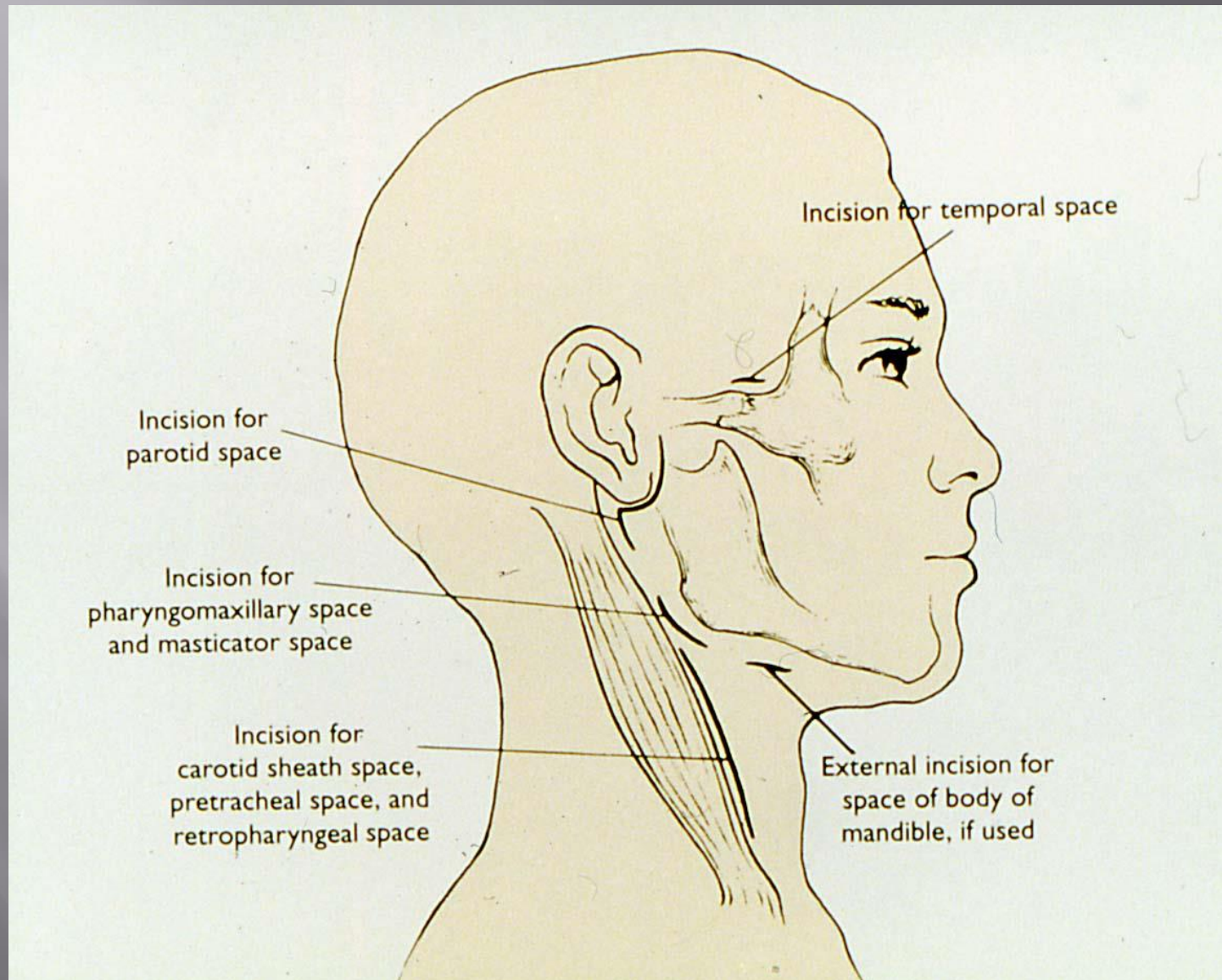
CT scan neck with contrast

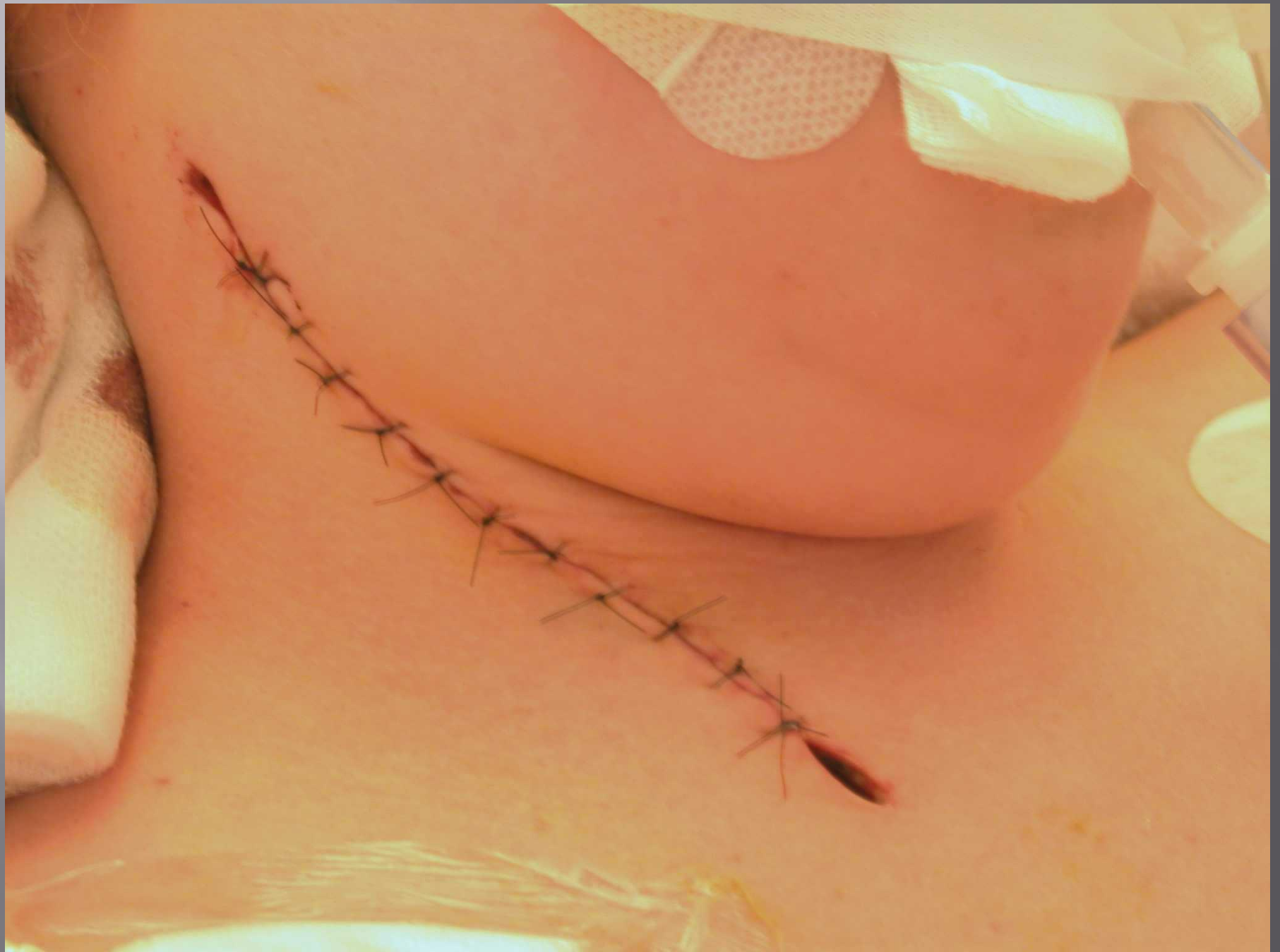
advantage:
evaluation deeper structures

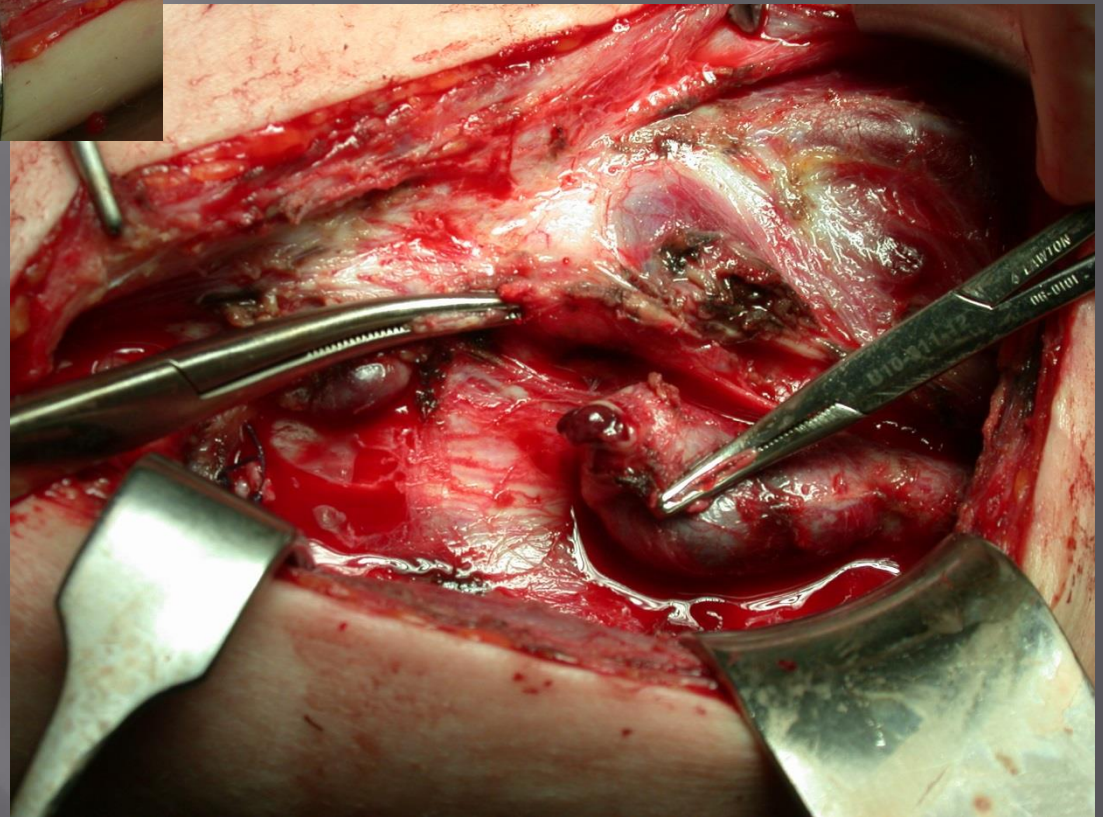
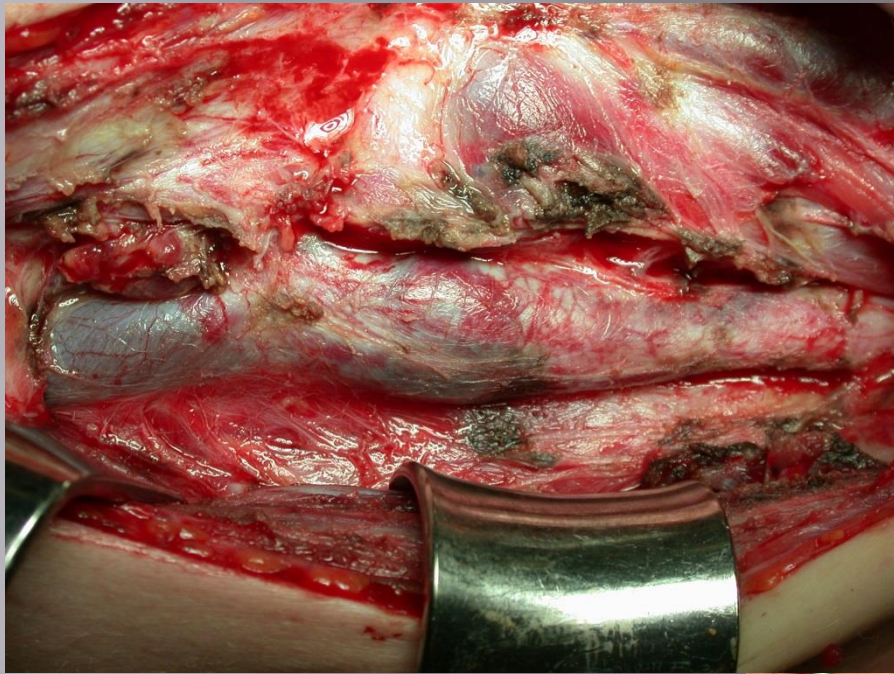
disadvantage:
radiation



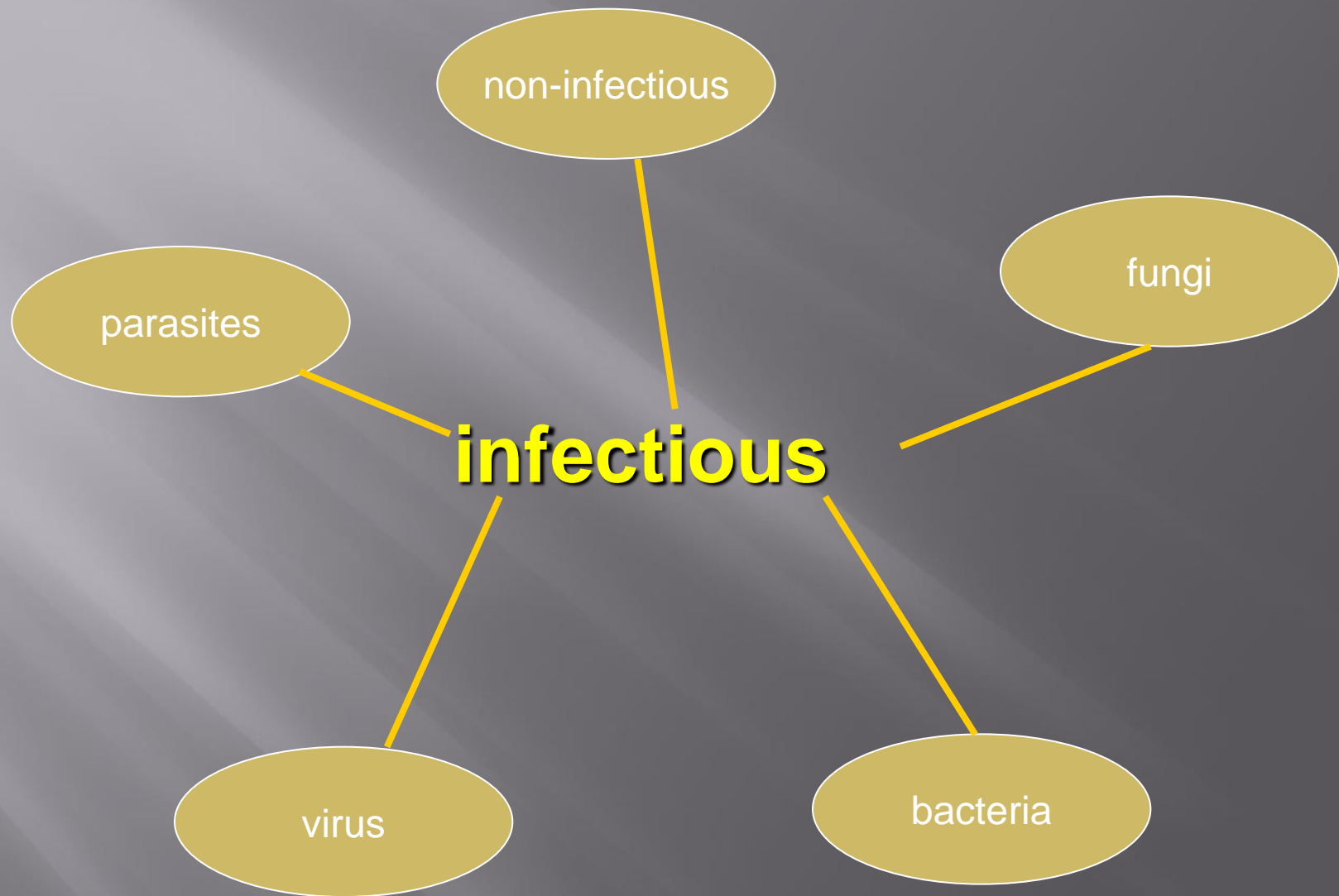
Incisions





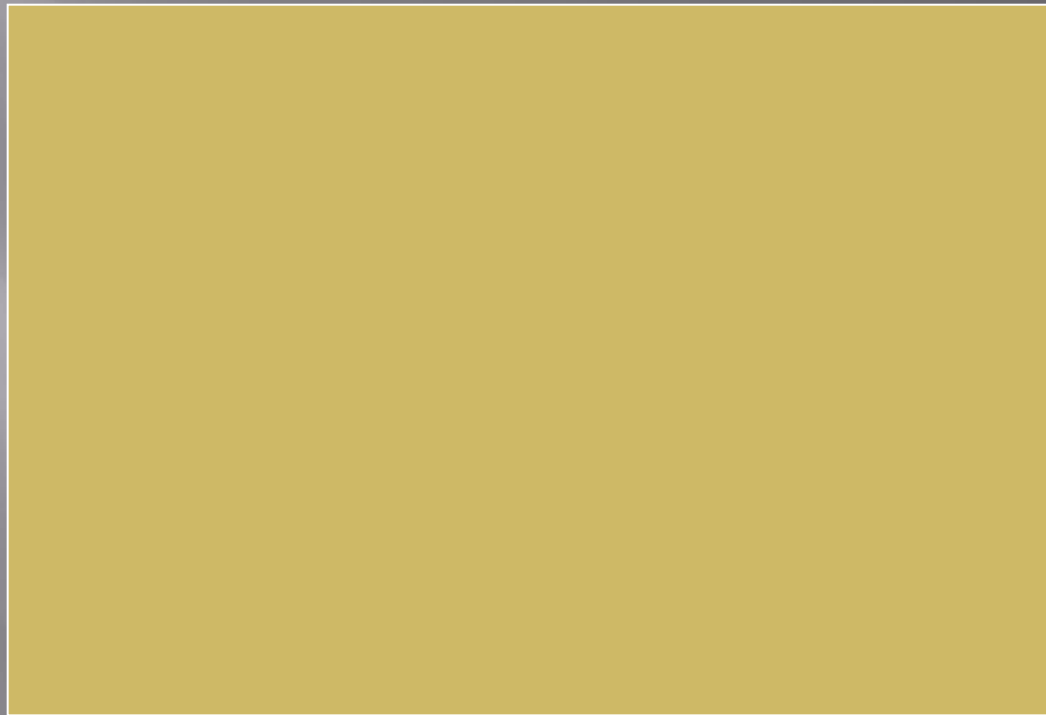






Bacteria

- Staphylo-, Streptococci
- Mycobacterium
- Bartonella henselae
- Tularemia/Brucellosis



Parasites

- Toxoplasma gondii
- Trypanosomen
- Filarien



Virus

- Epstein-Barr-Virus
- Herpes
- Cytomegalovirus
- HIV

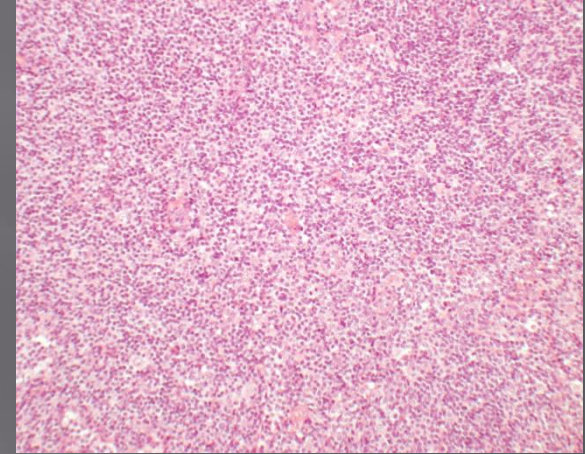
Non-infectious

<i>Disease</i>	<i>Age</i>	<i>Clinics</i>	<i>Therapy</i>
PFAPA	<5 years	Fever 2-3d, stomatitis aphthosa, pharyngitis	Steroids, AT/TE
Kawasaki	<5 years	Fever> 5d + exanthema trunk, conjunctivitis, erythema foot/hands/oral	Steroids
Rosai-Dorfman	<10 years	In \approx 50% extranodal localisation (nose)	None; evtl. Radiatio, Surgery, Chemotherapy
Castleman	rare		
Sarcoidosis			
Kikuchi			
Kimura			

Neoplasia

Lymphoma (most frequent): > 50%

NonHodgkin-L >> Hodgkin-L



Rhabdomyosarcoma



Thyroid Carcinoma



Routine serologic
testing: positive in
about 10%

(toxoplasma,
cytomegalovirus,
Epstein–Barr virus
(EBV), Brucella,
Bartonella)

SUSPICIOUS:

Supraclavicular

Multiple Lymph node groups

Unilateral

History of neoplasm

Size > 3cm

Table 1.—Predictive-Model
Scoring System

	Value *
Abnormal chest roentgenogram	5
Lymph node size >2.0 cm	3
Ear-nose-throat symptoms	-3
Constant	-2
Final score	Sum total

Slap, 1986

If neoplasia suspected

-Biopsy

-Careful planning of surgery

(incision, airways, nerves, bleeding etc.)

-Interdisciplinary (what material, how)



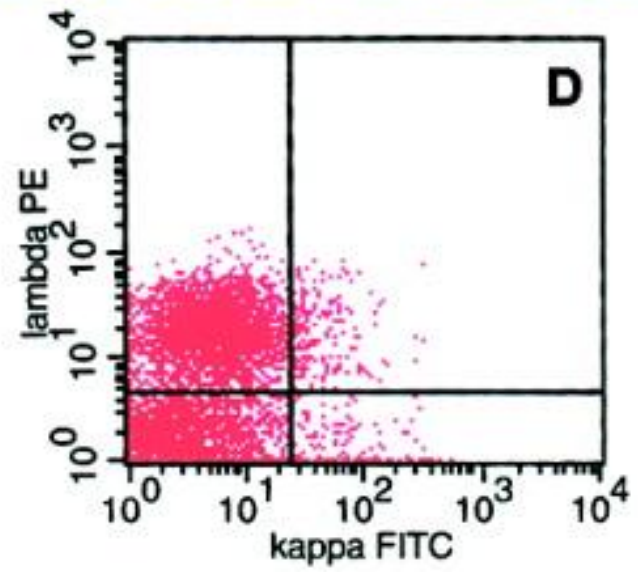
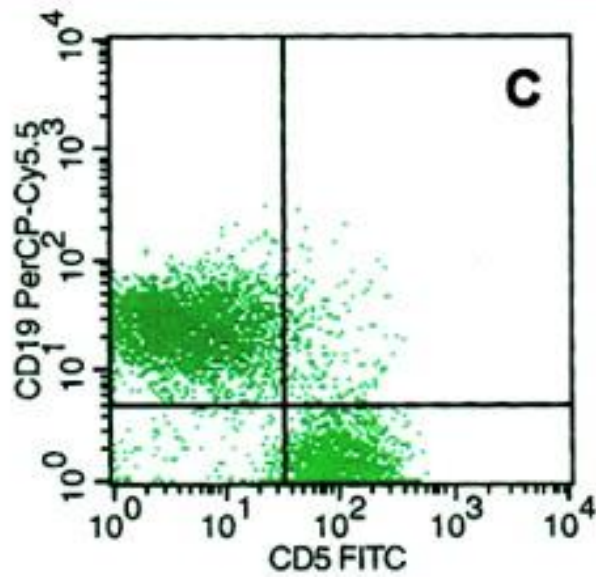
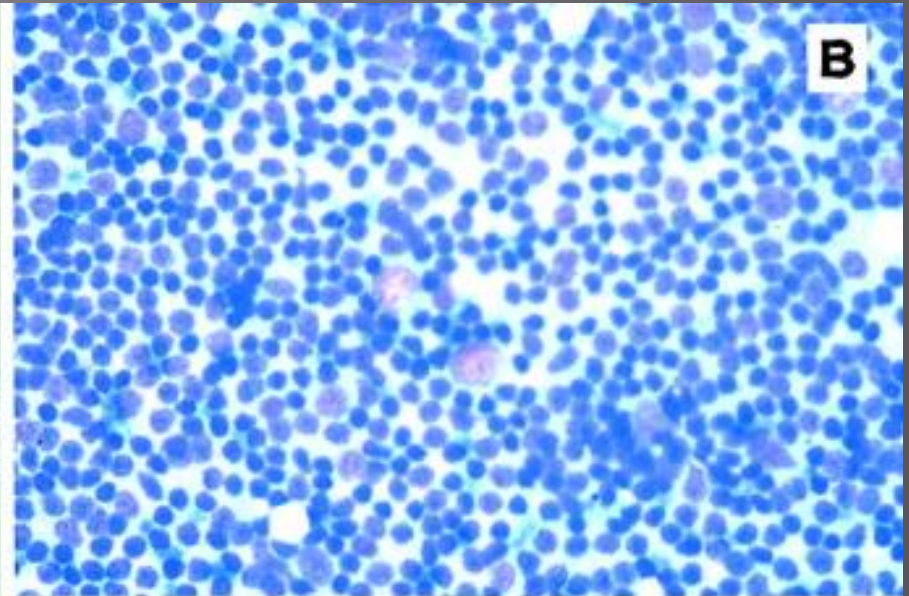
Complications lymph node biopsy:

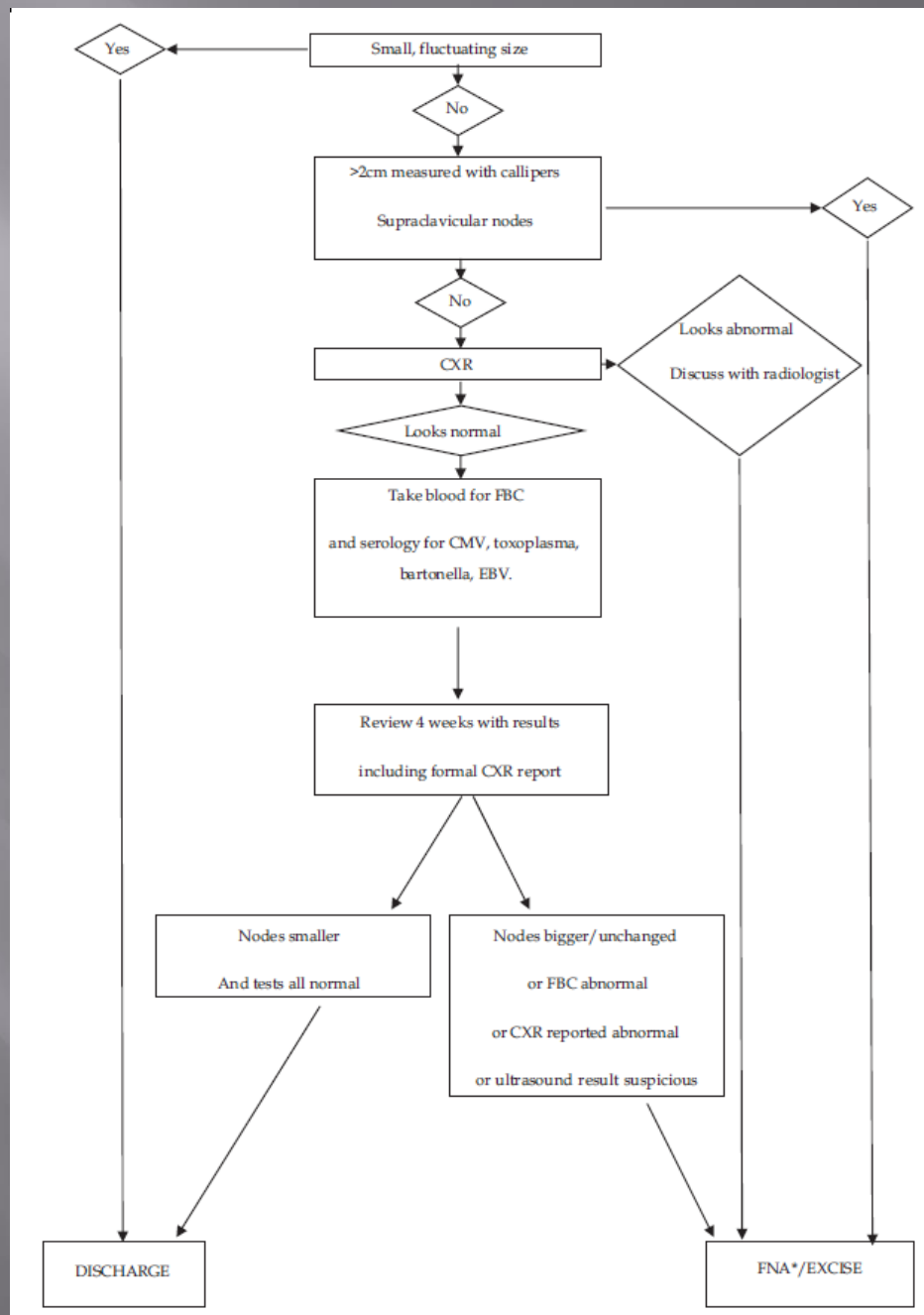
0-11%

- Hypertrophic scar
- Wound infection
- Nerve injury

FACS

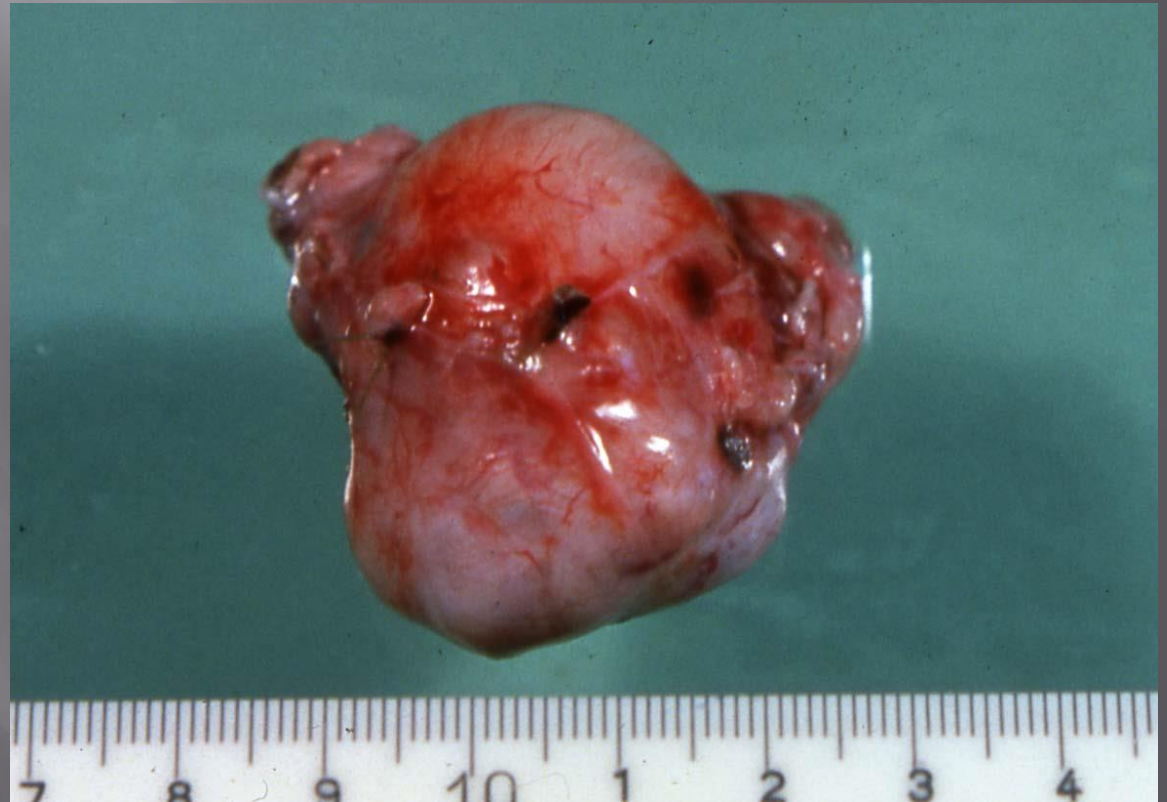
fluorescence-activated cell sorting





Congenital

- Branchiogenic malformations
- Vascular Anomalies
- Torticollis
- etc.



ISSVA classification for vascular anomalies 2014

www.issva.org

Vascular anomalies				
Vascular tumors	Vascular malformations			
	Simple	Combined °	of major named vessels	associated with other anomalies
Benign (Hemangioma) Locally aggressive or borderline Malignant	Capillary malformations Lymphatic malformations Venous malformations Arteriovenous malformations* Arteriovenous fistula*	CVM, CLM LVM, CLVM CAVM* CLAVM* others	See details	See list

° defined as two or more vascular malformations found in one lesion

* high-flow lesions

N.B. The classification tables do not list exhaustively all known vascular anomalies.
Some rare "dermatologic" vascular anomalies will be found in dermatology textbooks.

Hemangioma

Incidence congenital/postnatal: 1-4%, more frequent premature infant

- 60% Head&Neck
- Complete ENT-Exam (Pharynx, Larynx)
- Grow during 1st year, mostly involute
- Regression is complete in half of children by age 5, in 70% of children by age 7, and in the remainder by age 10 to 12
- Frequent localisation: Parotid gland
- 1/5 multicentric!



- Activity GLUT1 ↑
- Classification congenital hemangioma :
 - rapidly involuting congenital hemangiomas (RICH) or
 - noninvoluting congenital hemangiomas (NICH)

Therapy:

1. Observe
2. If dangerous location, large size, rapidity of growth, or potential for other complications
-> B-Blocker
3. Steroids/Interferon/Vincristin, Laser, Excision

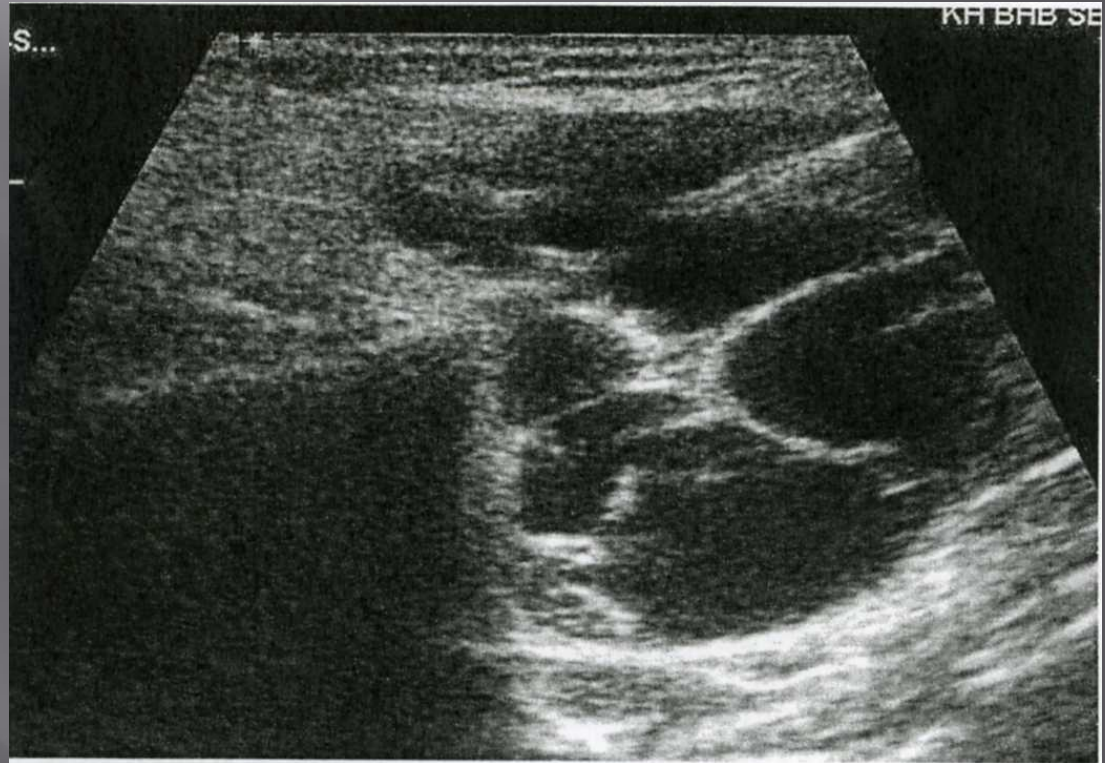
Vascular malformations

don't involute!






- Activity GLUT1 not ↑
- Therapy: excision, laser, sclerotherapy, embolisation

Lymphangioma

- Most frequent in Head&Neck (70-80%)
- Macro-, microcystic lesions
- Therapy:
 - Sclerotherapy
 - Picrinabil (OK-432)
 - Bleomycin
 - Doxycycline
 - (Acetic acid)
 - (Alcohol)
 - (Hypertonic saline)
 - Excision



Staging (according to DeSerre)

Stage	Location of Lesion	
I	Unilateral Infrahyoid	
II	Unilateral Suprahyoid	
III	Unilateral Infrahyoid and Suprahyoid	
IV	Bilateral Infrahyoid	
V	Bilateral Infrahyoid and Suprahyoid	

Perkins et al., 2010

Dental hygiene

Antibiotic treatment if infection

Lymphocytopeny

Cave: airways

Concomittant bone infiltration -> malformation

Perkins et al., 2010

Torticollis



Literature

Locke et al., 2014, When does an enlarged cervical lymph node in a child need excision? A systematic review IJPORL, 78 393–401.

Lang et al., 2014, Erkrankungen der Halslymphknoten im Kindesalter, Laryngo-Rhino-Otol, 93: S49–S69.

Fevurly, R et al., 2012. Vascular Anomalies in Pediatrics. Surg Clin N Am 92 769–800.