



PHYSICAL EXAMINATION OF LYMPH NODES

Anna Własienko, Ewa Zalewska

Department of Paediatrics with Observation Ward

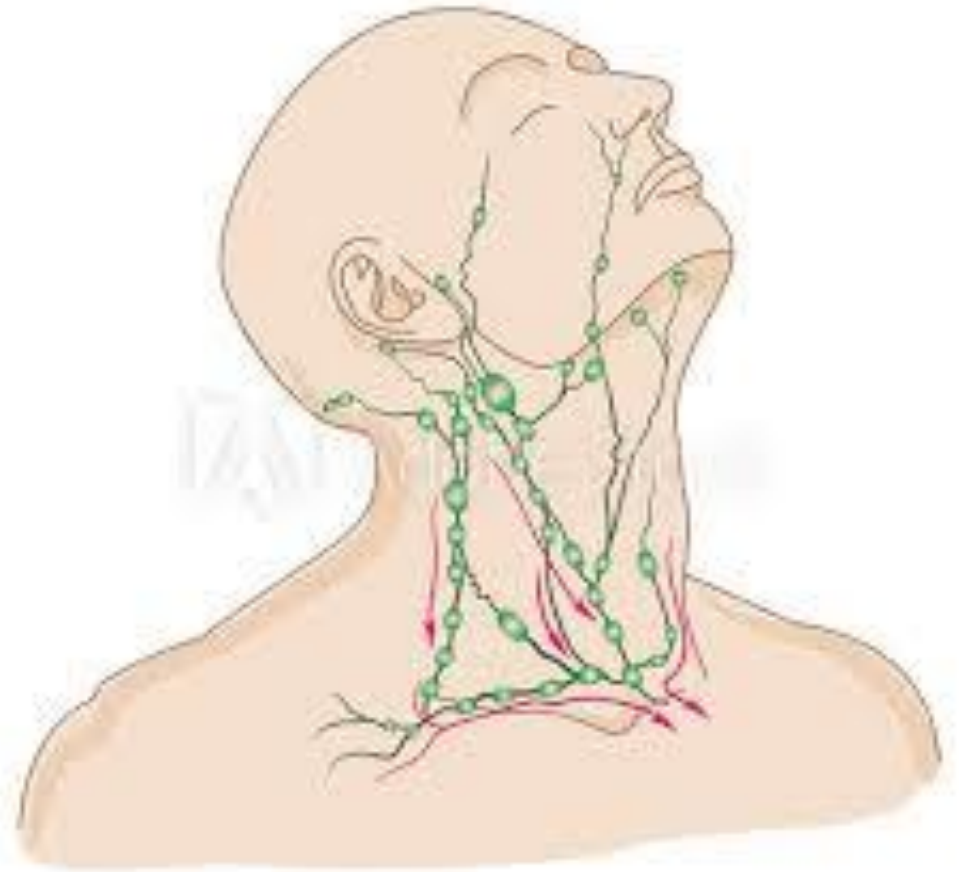
Warsaw Medical University

Head of Department: Ernest Kuchar

English Division

FUNCTION OF LYMPH NODES

- Secondary lymphoid organ
- Act as **filters** for foreign particles and cancer cells
- Produce **antibodies**
- **Lymph** is present throughout the body, and circulates through lymphatic vessels- these drain into and from lymph nodes

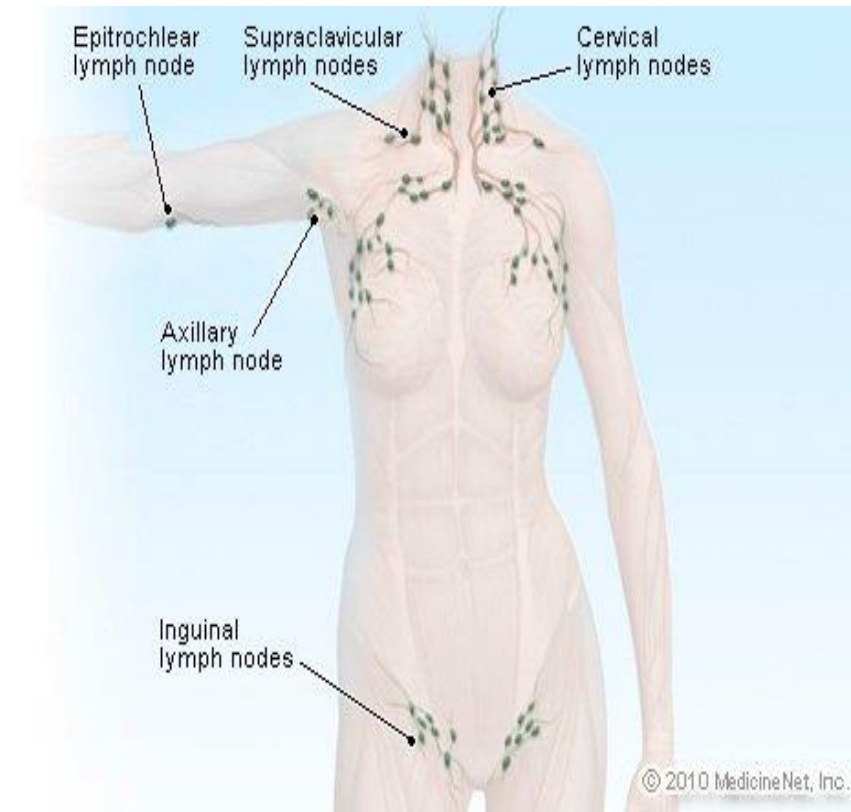


LYMPH NODES

- are widely present throughout the body
 - become **inflamed** or **enlarged** in various diseases
-
- ✓ viral/ bacterial infection,
 - ✓ malignancy,
 - ✓ autoimmune diseases,
 - ✓ metabolic diseases,
 - ✓ drug relations
 - ✓ cancer
-
- condition of lymph nodes may very important in cancer staging
(decides the treatment to be used and determines the prognosis)

Lymphadenopathy = enlarged or swollen lymph nodes

Lymphedema = condition of edema of tissue relating to insufficient clearance by the lymphatic system (eg. Breast surgery with lymph nodes removal, parasitic infection, primary lymphedema)



LYMPHADENOPATHY & LYMPHEDEMA



EXAMINATION OF LYMPH NODES

watching

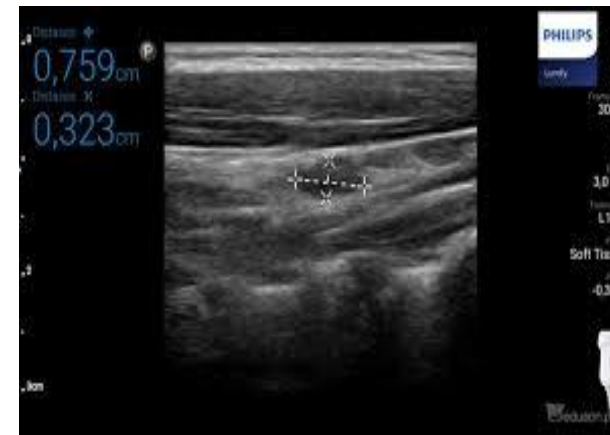


shutterstock.com • 1287488920

palpation



U/S
scanning



biopsy



EXAMINATION OF LYMPH NODES

watching



shutterstock.com • 1287488920

palpation



U/S
scanning



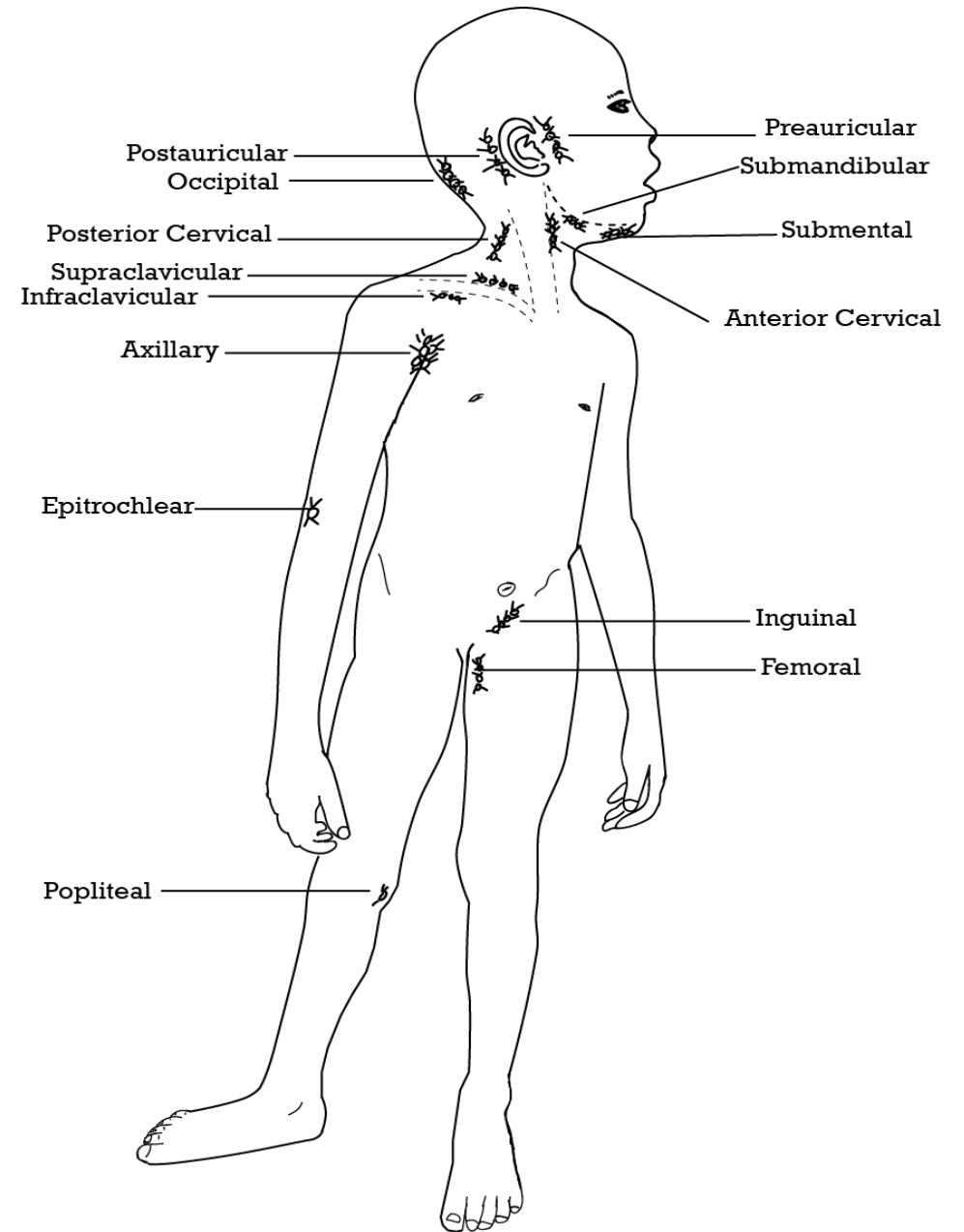
biopsy



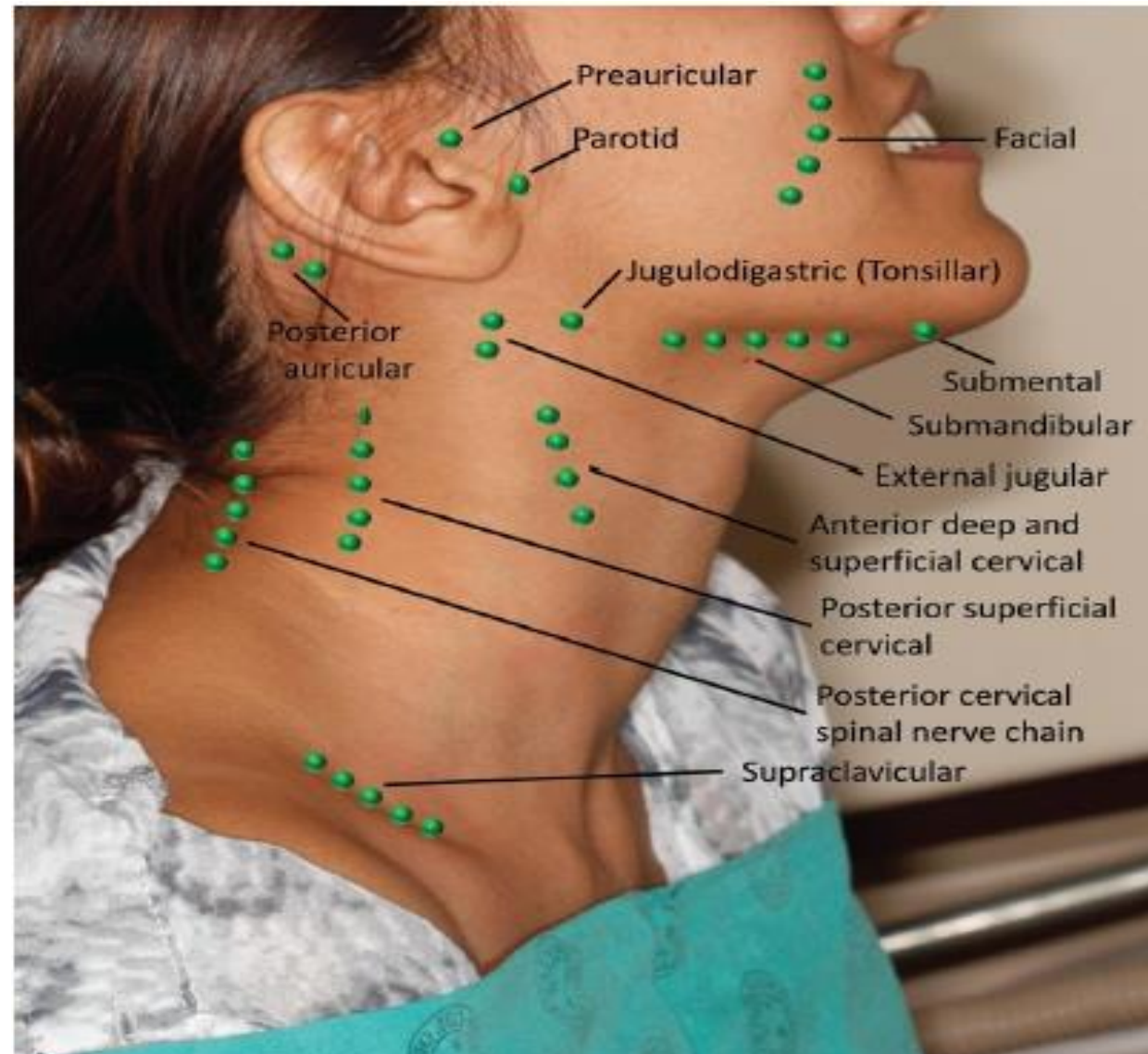
LYMPH NODES POSSIBLE TO PALPATE

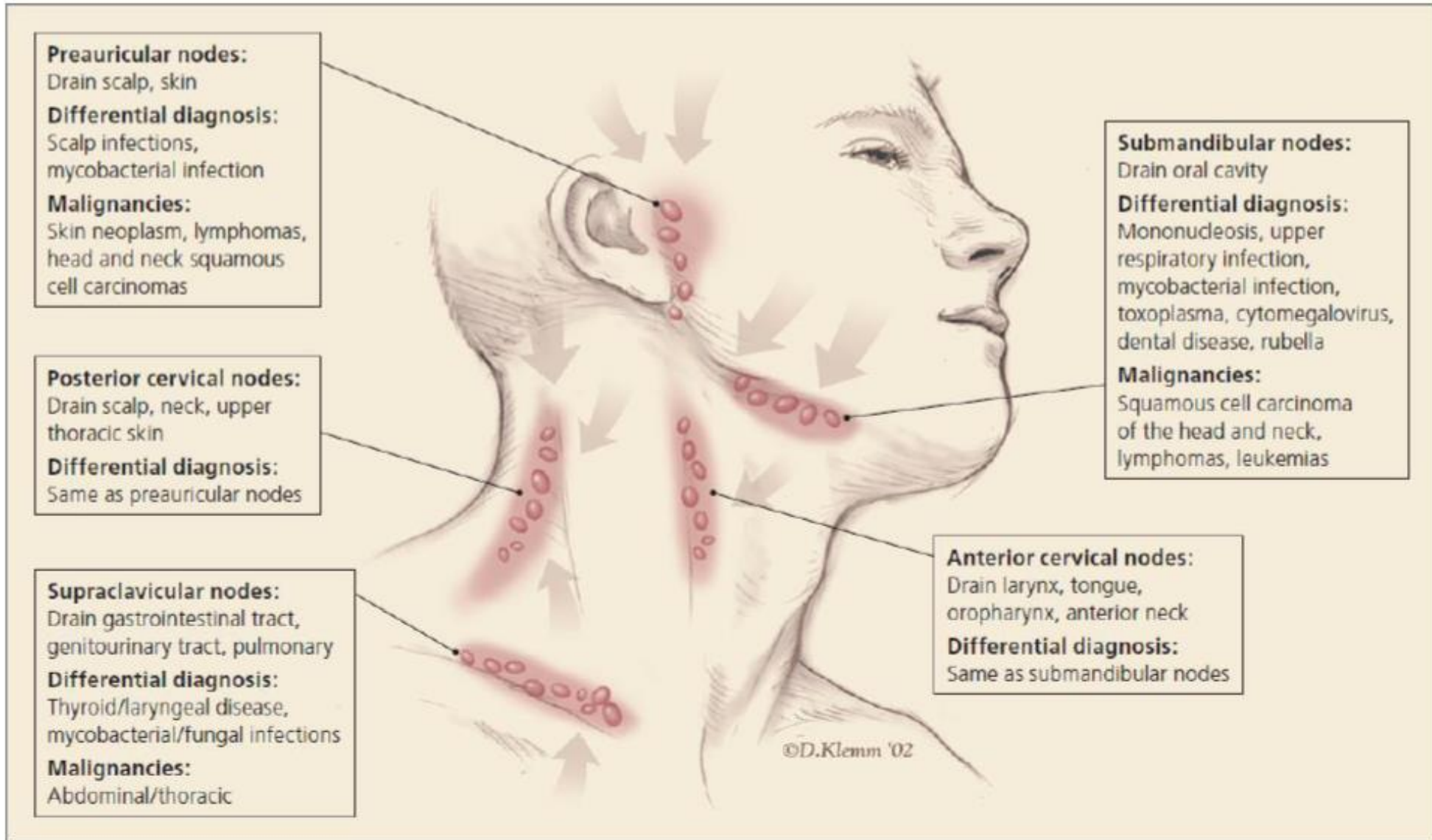
- Occipital
- Neck posterior
- Anterior cervical
- Posterior cervical
- Submandibular
- Submental
- Supraclavicular
- Infraclavicular
- Axillary
- Epitrochlear
- Inguinal
- Popliteal

LYMPH NODES AND THEIR LOCATIONS



Clinical distribution of all superficial lymph nodes





Axillary nodes:

Drain breast, upper extremity, thoracic wall

Differential diagnosis:

Skin infections/trauma, cat-scratch disease, tularemia, sporotrichosis, sarcoidosis, syphilis, leprosy, brucellosis, leishmaniasis

Malignancies:

Breast adenocarcinomas, skin neoplasms, lymphomas, leukemias, soft tissue/Kaposi sarcoma

Infraclavicular nodes

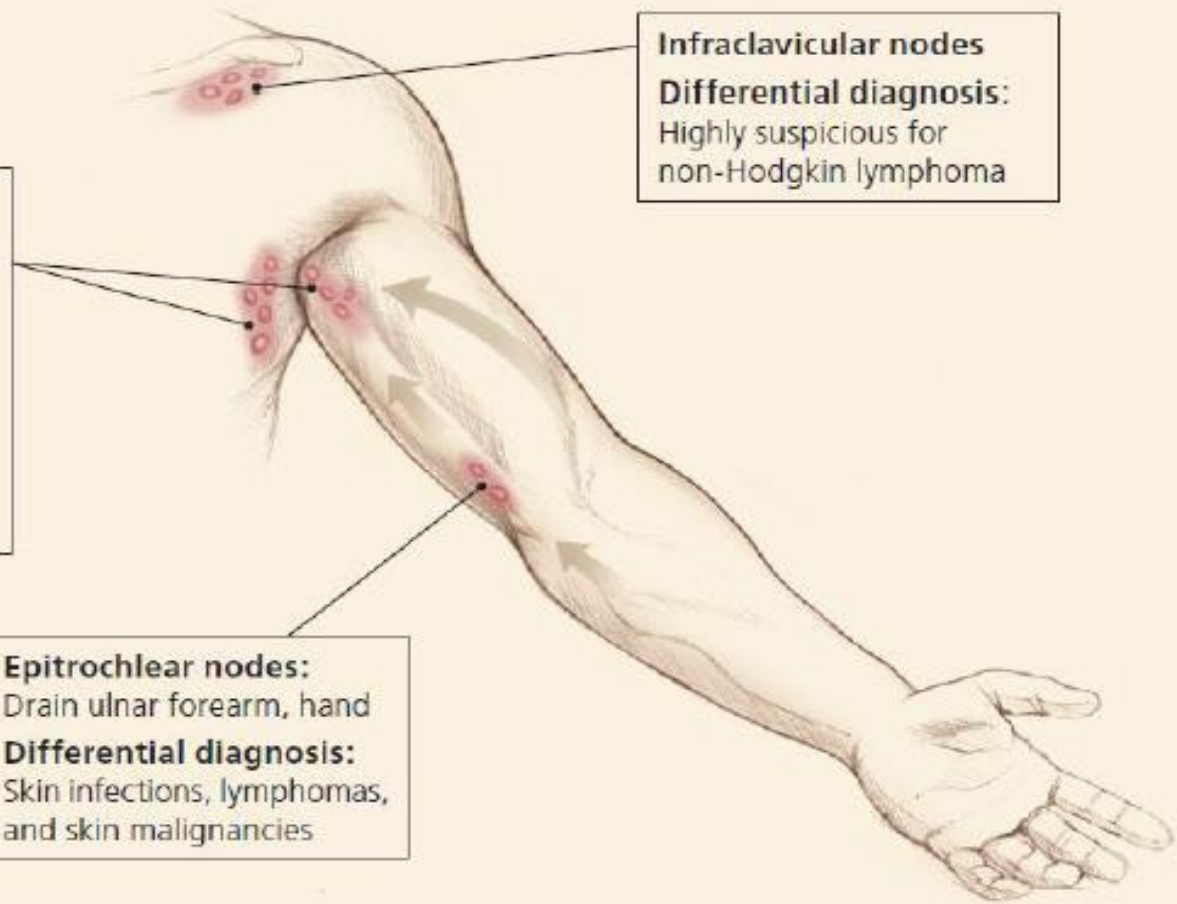
Differential diagnosis:
Highly suspicious for non-Hodgkin lymphoma

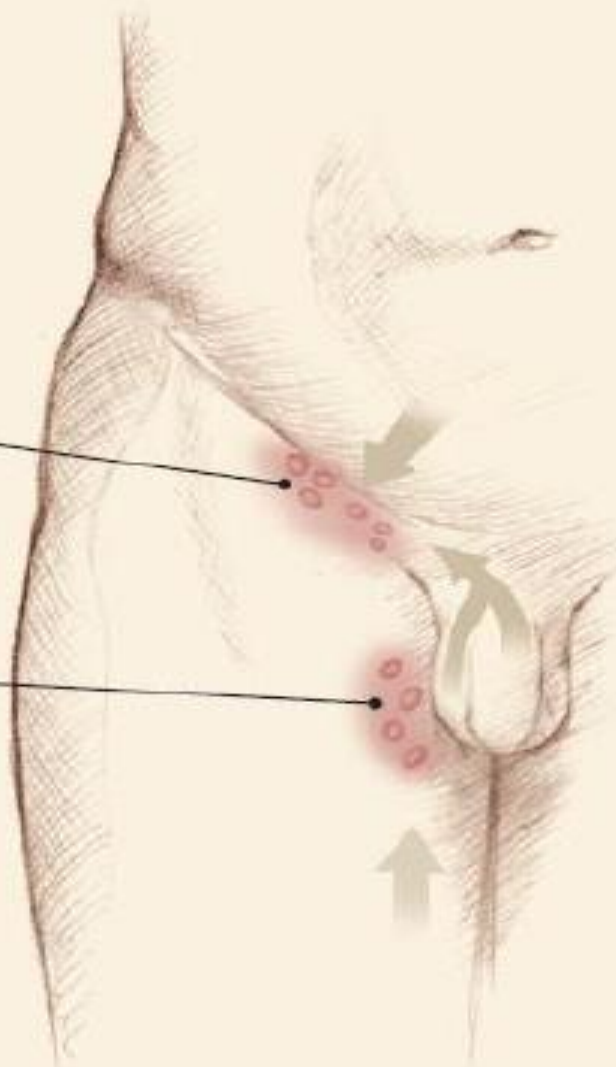
Epitrochlear nodes:

Drain ulnar forearm, hand

Differential diagnosis:

Skin infections, lymphomas, and skin malignancies





Horizontal
node group

Vertical
node group

Differential diagnosis:

Benign reactive lymphadenopathy, sexually transmitted diseases, skin infections

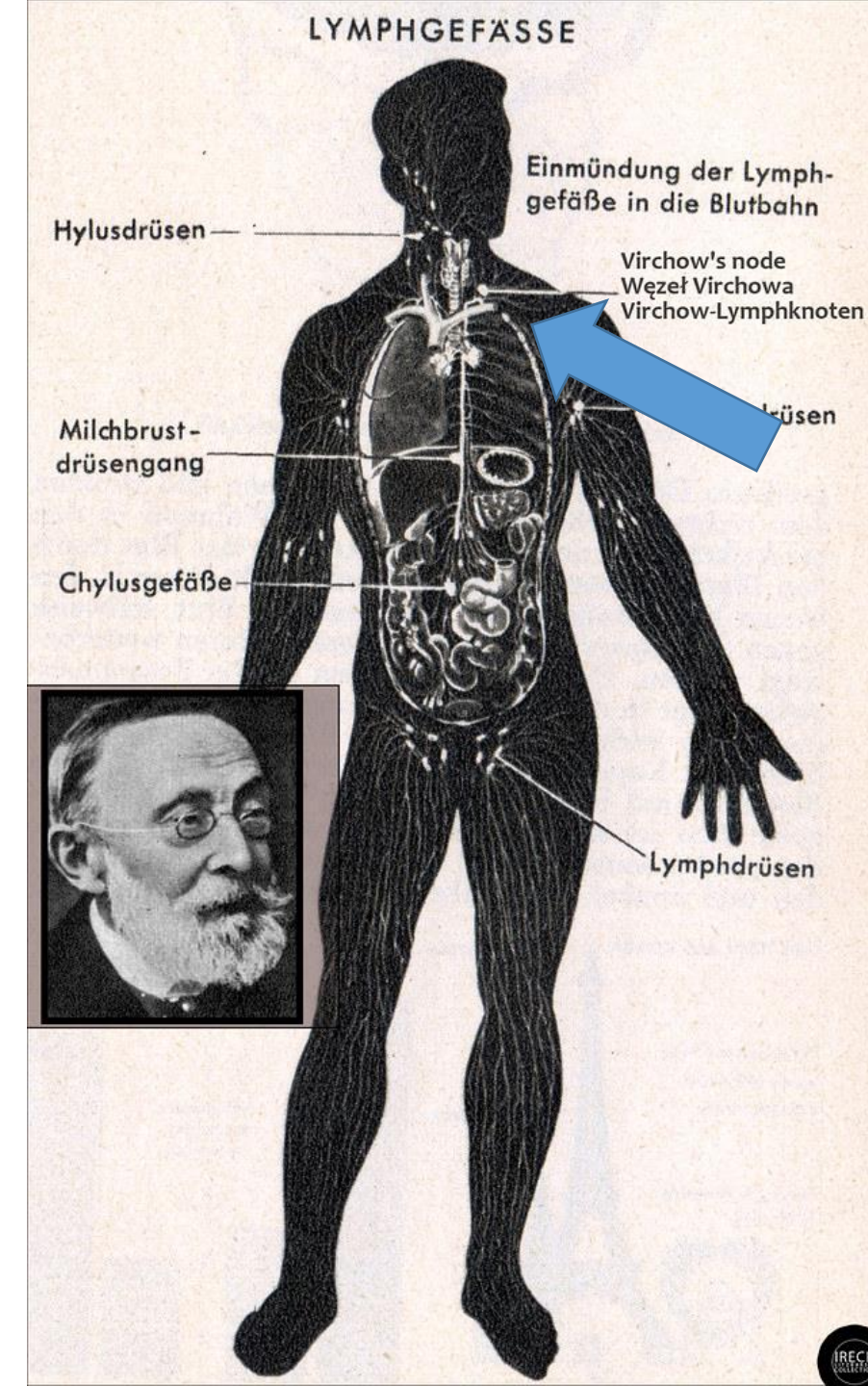
Malignancies:

Lymphomas; squamous cell carcinoma of penis, vulva, and anus; skin neoplasms; soft tissue/Kaposi sarcoma

These groups drain lower abdomen, external genitalia (skin), anal canal, lower one-third of vagina, lower extremity

Sentinel lymph node/ węzeł Virchofa

- is the **hypothetical first lymph node** or group of nodes **draining a cancer**
- In case of established cancerous dissemination it is postulated that the sentinel lymph node/s is/are the target organs primarily reached by metastasizing cancer cells from the tumor
- The **sentinel node procedure** is the identification, removal and analysis of the sentinel lymph nodes of a particular tumour

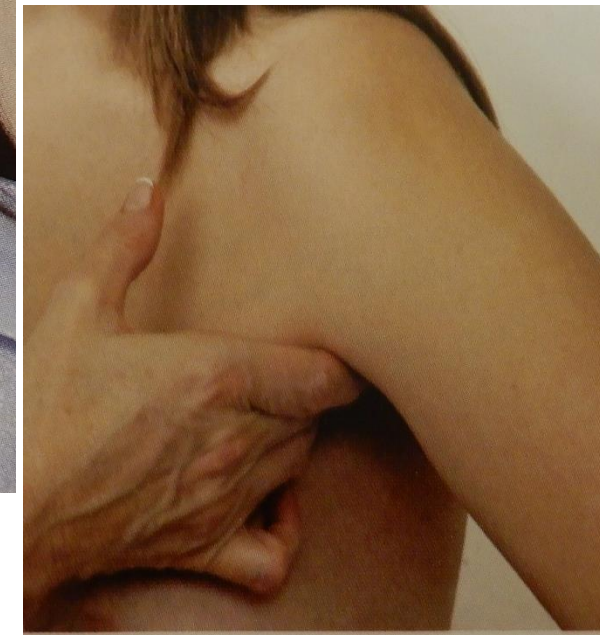


HOW TO EXAMINE LYMPH NODES?



Technical tips

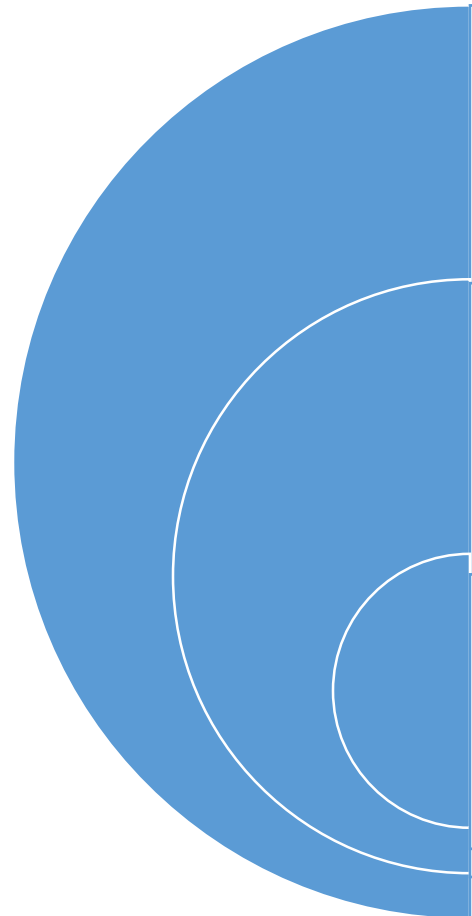
- Palpation: use **2-3 fingers of one hand**
- two hands at the same time- rare
- Begin with the head, neck and move to lower regions
- Use hard anatomical structures (skull, jaw chest) to press & **feel lymph nodes**



What must be assessed?

- 1. Site / Localisation**
- 2. Size**
- 3. How many? (One? Package?)**
- 4. Pain? / Painless enlargement**
- 5. Skin over the node (Inflammed? Crust? Fistula?)**
- 6. Movable?**
- 7. Consistency (Hard? Malacia?)**

NORMAL SIZE OF LYMPH NODES



NEWBORNS	<ul style="list-style-type: none">• NOT PALPABLE (EXCEPTION: NEWBORNS AFTER BCG IMMUNIZATION)
< 3 yo	<ul style="list-style-type: none">• < 3 mm
>3 yo	<ul style="list-style-type: none">• < 1 cm

TAKING HISTORY- TIPS

- HOW FAST IT GROWS
- FEVER?
- ANY OTHER DISEASE/ SYMPTOMS IN THE MEANTIME?
- CHRONIC ILLNESS
- MEDICATIONS
- VACCINATION
- RECENT SURGERY
- CONTACT WITH ANIMALS (CAT)
- TRAVEL

LYMPHADENOPATHY

LOCAL

- Local inflammation
- Generalised disease eg. Hodgkin lymphoma
- Supraclavicular- always abnormal! eg. Hodgkin Lymphoma, metastases (gastric cancer)
- Subclavicular- always abnormal

GENERAL

- Viruses (EBV, CMV, HIV)
- Bacteria (sepsis)
- Protozoan infection (Toxoplasmosis)
- Kawasaki Disease
- Metabolic diseases (Leukaemia, HL, NHL)
- Malignancy

DIFERENTIAL DIAGNOSIS

INFLAMMATION

- PAIN
- REDNESS OF THE SKIN
- ↑ TEMPERATURE
- MALACIA

MALIGNANCY

- VERY HARD
- PACKAGES
- NO PAIN
- NOT MOVABLE

EXAMPLES, EXAMPLES, EXAMPLES...

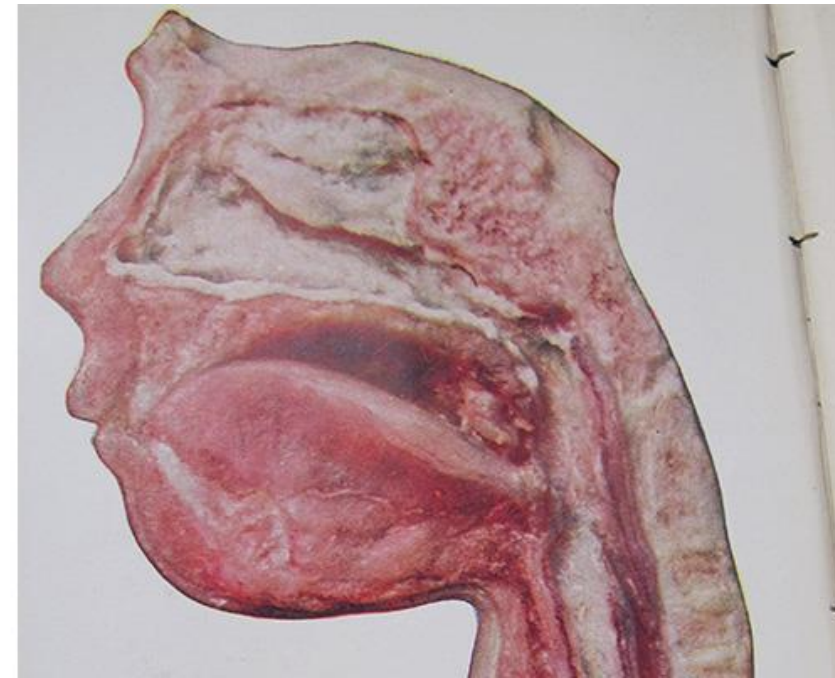
BCG/ BCG VACCINATION



HODGKIN LYMPHOMA



„Neron's neck” - Diphtheria

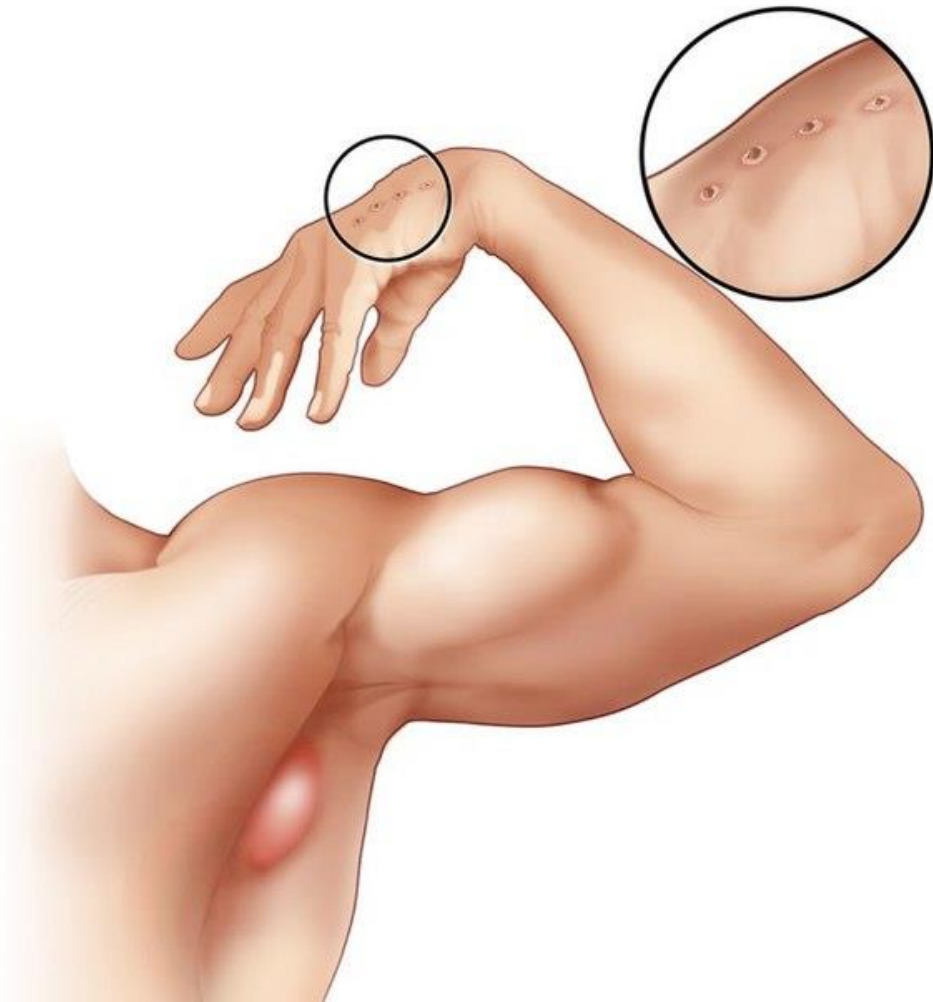


Kawasaki disease



Cat-scratch fever, cat-scratch disease

(*Bartonella henselae*)



Epstein-Barr Virus



MNEMONICS (1)

- M- malignancy
- I- infections
- A- autoimmune disease
- M- miscellaneous/unusual conditions
- I- iatrogenic causes

MNEMONICS (2)

- ☐ C Cancers
- ☐ H Hypersensitivity
- ☐ I Infections
- ☐ C Connective Tissue disorders
- ☐ A Atypical lymphoproliferative disorders
- ☐ G Granulomatous
- ☐ O Others

TAKE HOME MESSAGE!

1. 7 Clinical features of lymph nodes to assess
2. Differential diagnosis: inflammation/malignancy
3. Reasons of local/ general lymphadenopathy

Bibliografia :

„Diagnostyka powiększonych węzłów chłonnych” Michał Matysiak, Szkoła Pediatrrii Vol 11 No5

„Badanie podmiotowe i przedmiotowe w pediatrii” Anna Obuchowicz, PZWL 2007,2010

„Pediatria. Podręcznik do Państwowego Egzaminu Lekarskiego i egzaminu specjalizacyjnego” pod. Red. Anny Dobrzańskiej i Józefa Ryżko; 2004,2006

„Evaluation of peripheral lymphadenopathy in adults” Robert L Ferrer MD MPH; Msrk D Aronson MD, Arnold S Freedman MD; Up To Date

Bates’ „Pocket guide to phycical examination and History taking” Lynn S.Bickley, Lippincott Williams&Wilkins