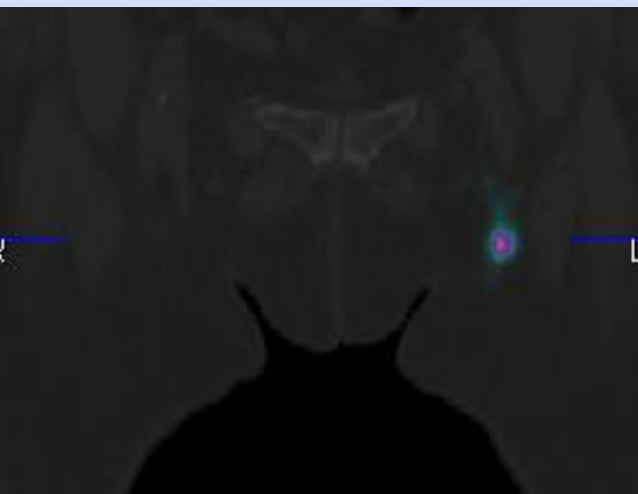
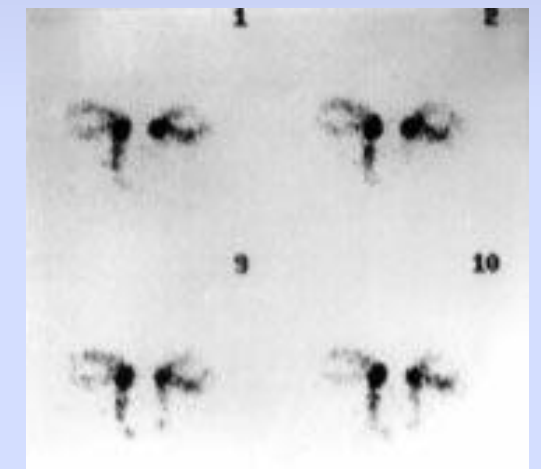
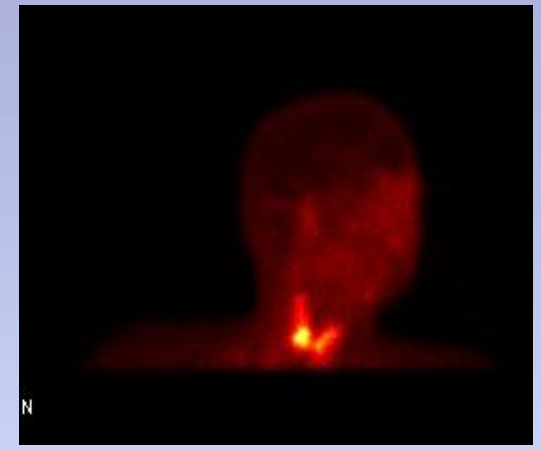
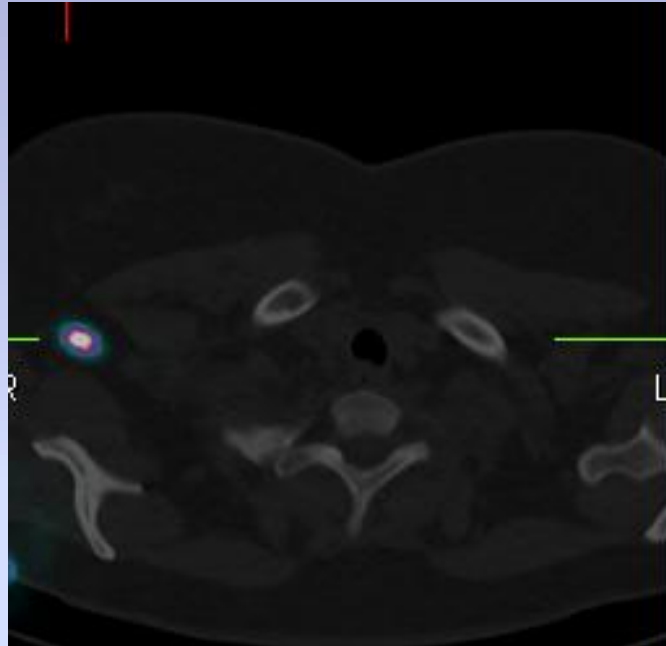
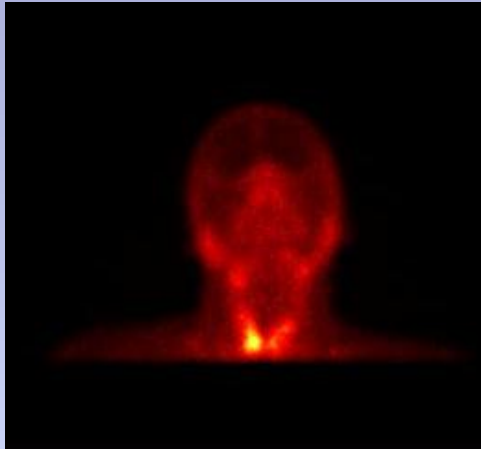


# The rest of NM diagnostic procedures



Assoc. prof. V. Marković, MD, PhD

Assoc. prof. A. Punda, MD, PhD

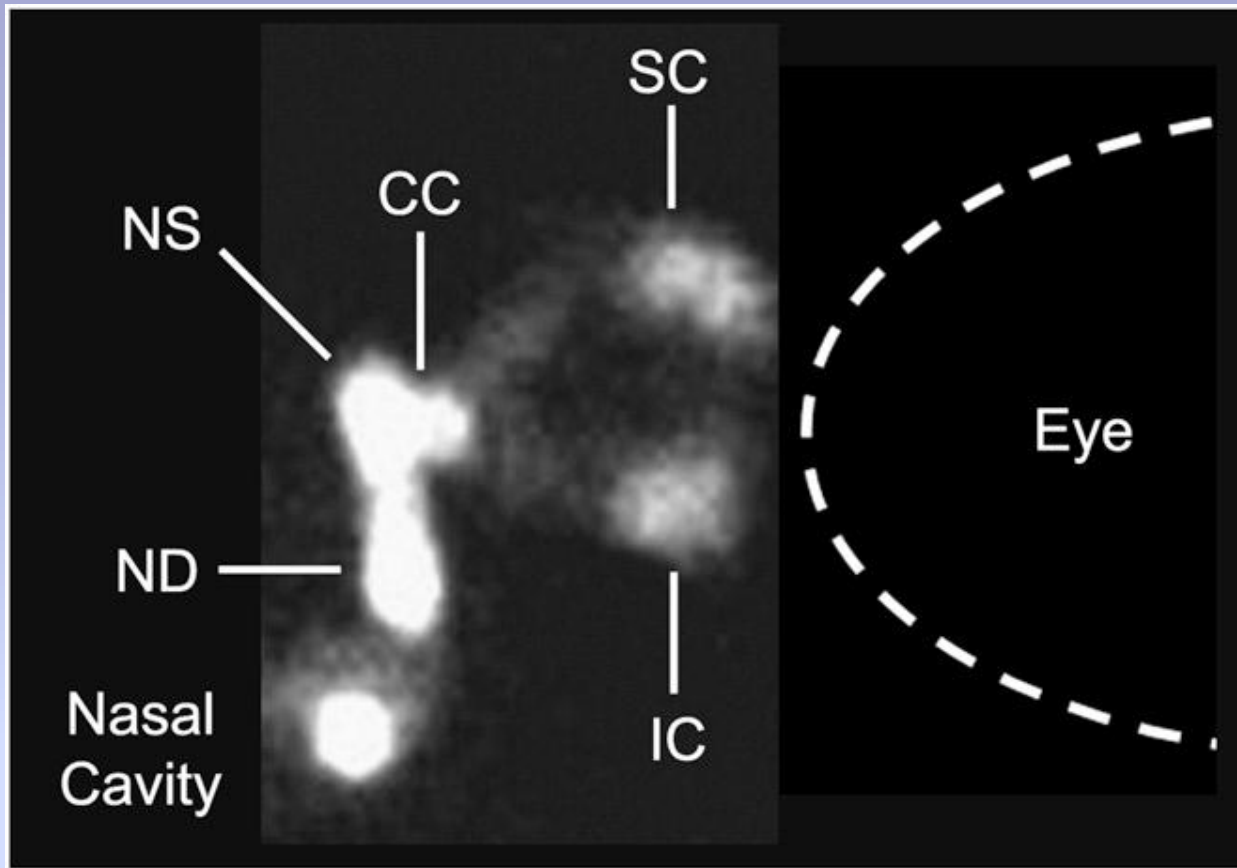
A. Barić, MD, nucl. med. spec.

# Scintigraphy of lacrimal drainage system (dacrioscintigraphy, lacrimal gland study)

- After instillation of radiofracer in the eye the drainage of lacrymal system can be estimated, including patency of the system and drainage dynamics, also evaluation of preop. vs postop. condition

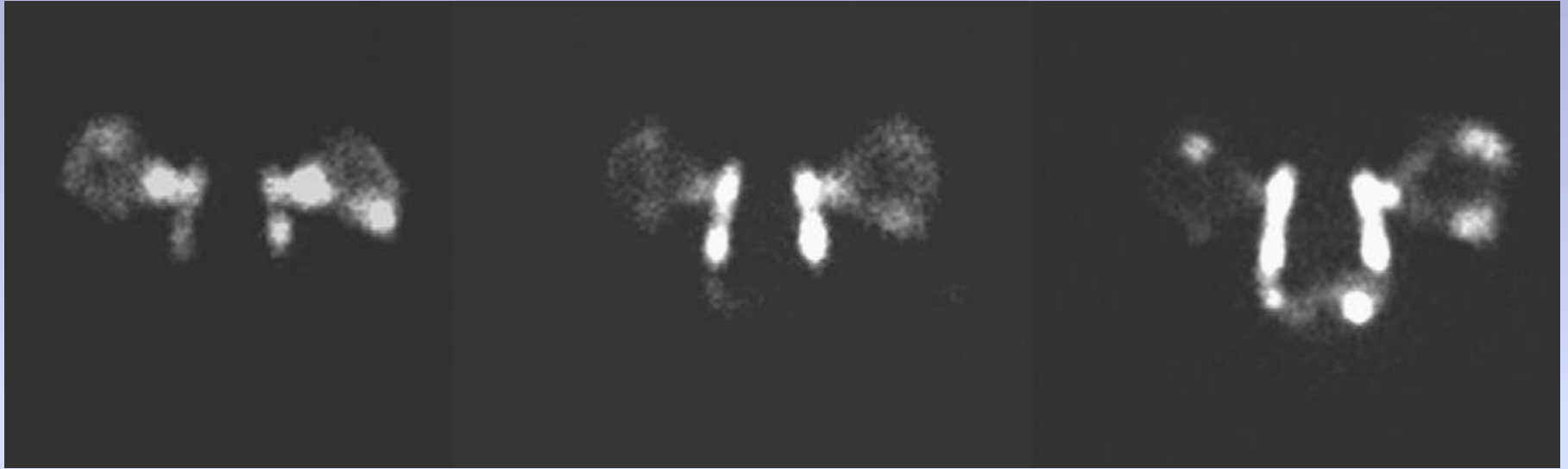
- Tc-99m – pertechnetate in saline 1,85 -3,7 MBq (50-100  $\mu$ Ci), in volume of 10 ml.

Image obtained each 10-20 sec during first two minutes and 5, 10, 15 i 20 min. afterwards

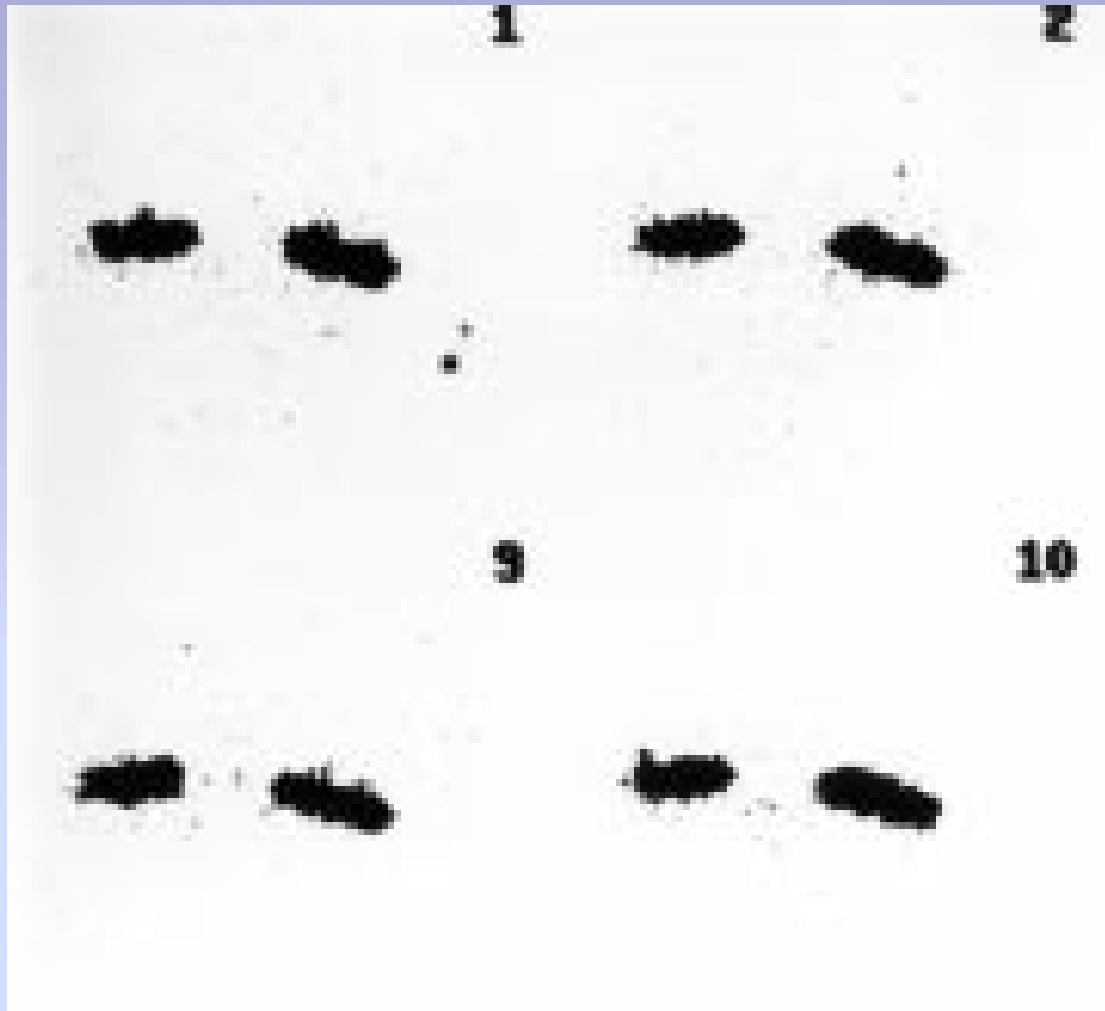


**Nasolacrimal apparatus as seen on dacrioscintigraphy.**

**Nasolacrimal apparatus is situated medial to eye and consists of superior canaliculus (SC) and inferior canaliculus (IC), common canaliculus (CC), nasolacrimal sac (NS), and nasolacrimal duct (ND).**



Normal lacrimal gland study (3 time points)  
demonstrating bilateral drainage from eyes into  
nasal cavity



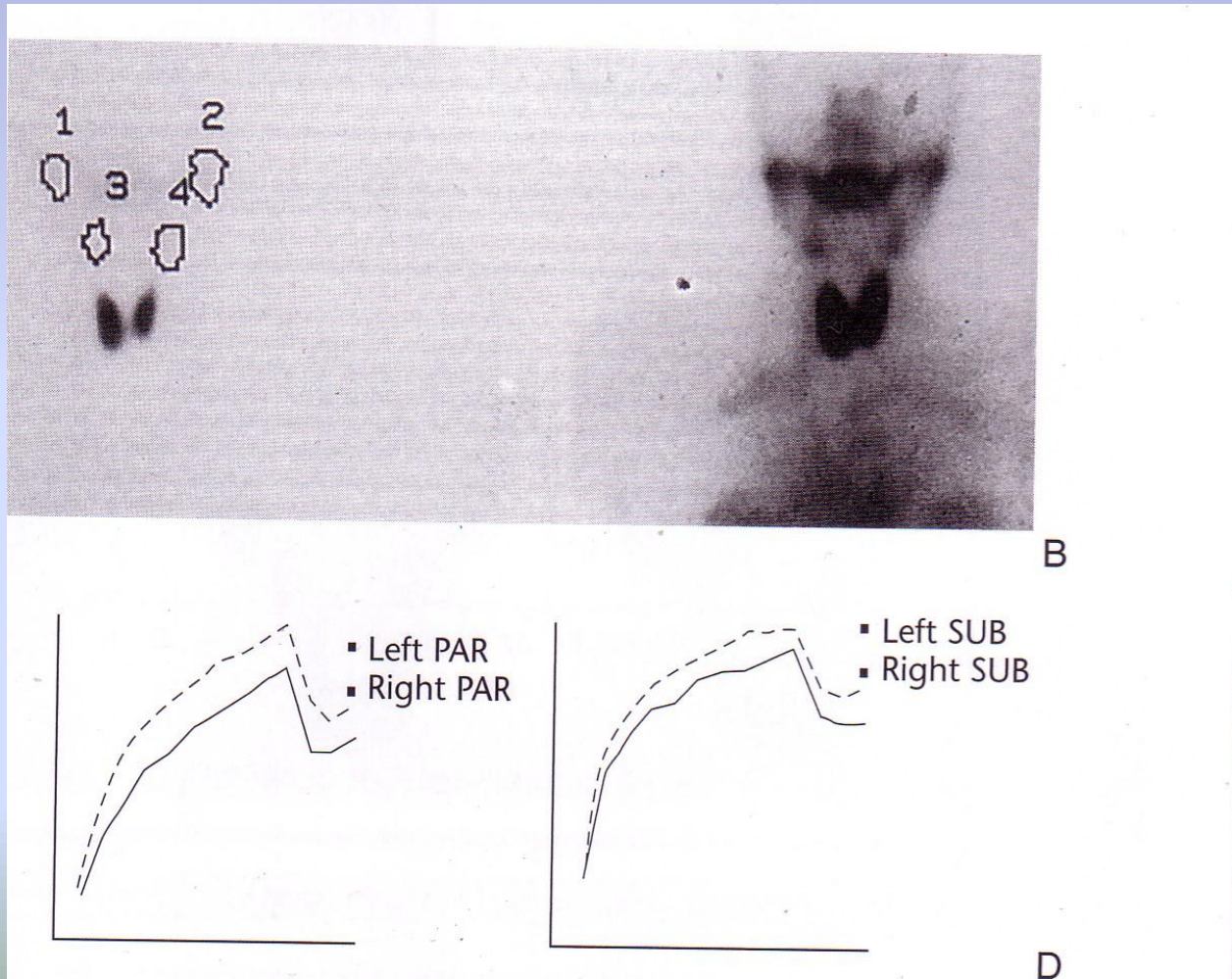
Bilateral obstruction on lacrimal sack entrance

# Salivary gland scintigraphy

- Morphology and function of salivary glands
- Tc-99m- pertechnetate in dose of 0,37-3,7 MBq (10-100  $\mu$ Ci) per kg/BW, intravenously.
- Angioscintigraphy and dynamic study (or static) during 20-30 min.

# ● Salivary gland angioscintigraphy

ROI





# ROI

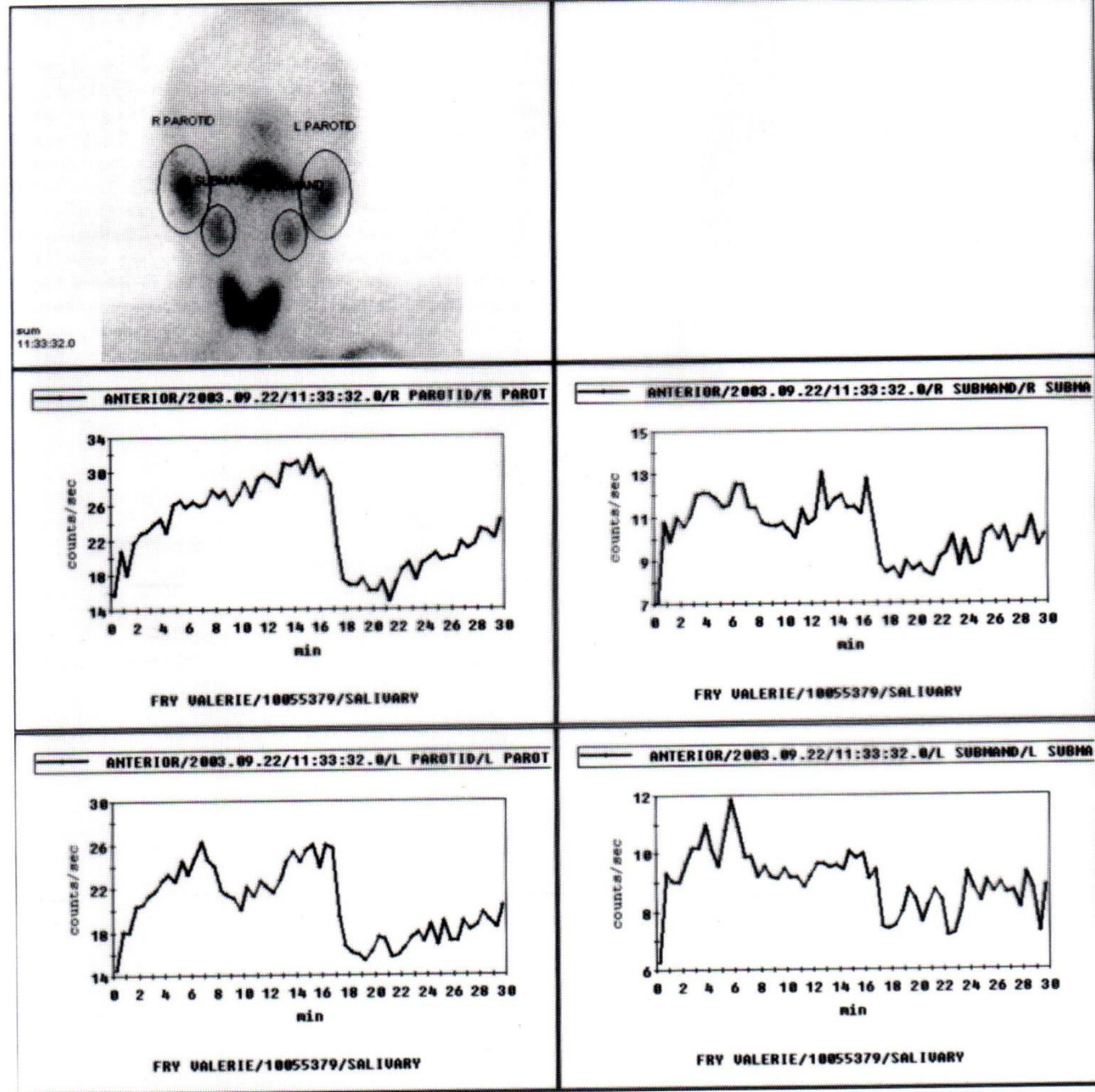


Fig. 54.3 Shows ROI placement and normal tissue-activity data.

# Indications

- **Tumors**: scintigraphic warm, mixed, cold
- **Sy Sjogren**: variable findings in dependence on disease stage – normal to faintly uptake
- **Sy. Mikulicz** : symmetrically enlargement
- **Acute inflammation**: increased blood flow, marked uptake, incomplete excretion
- **Chronic inflammation**: decreased blood flow and uptake, variable washout.
- **Opstruction**: accumulation curve, absent clearance of activity after lemon stimulus



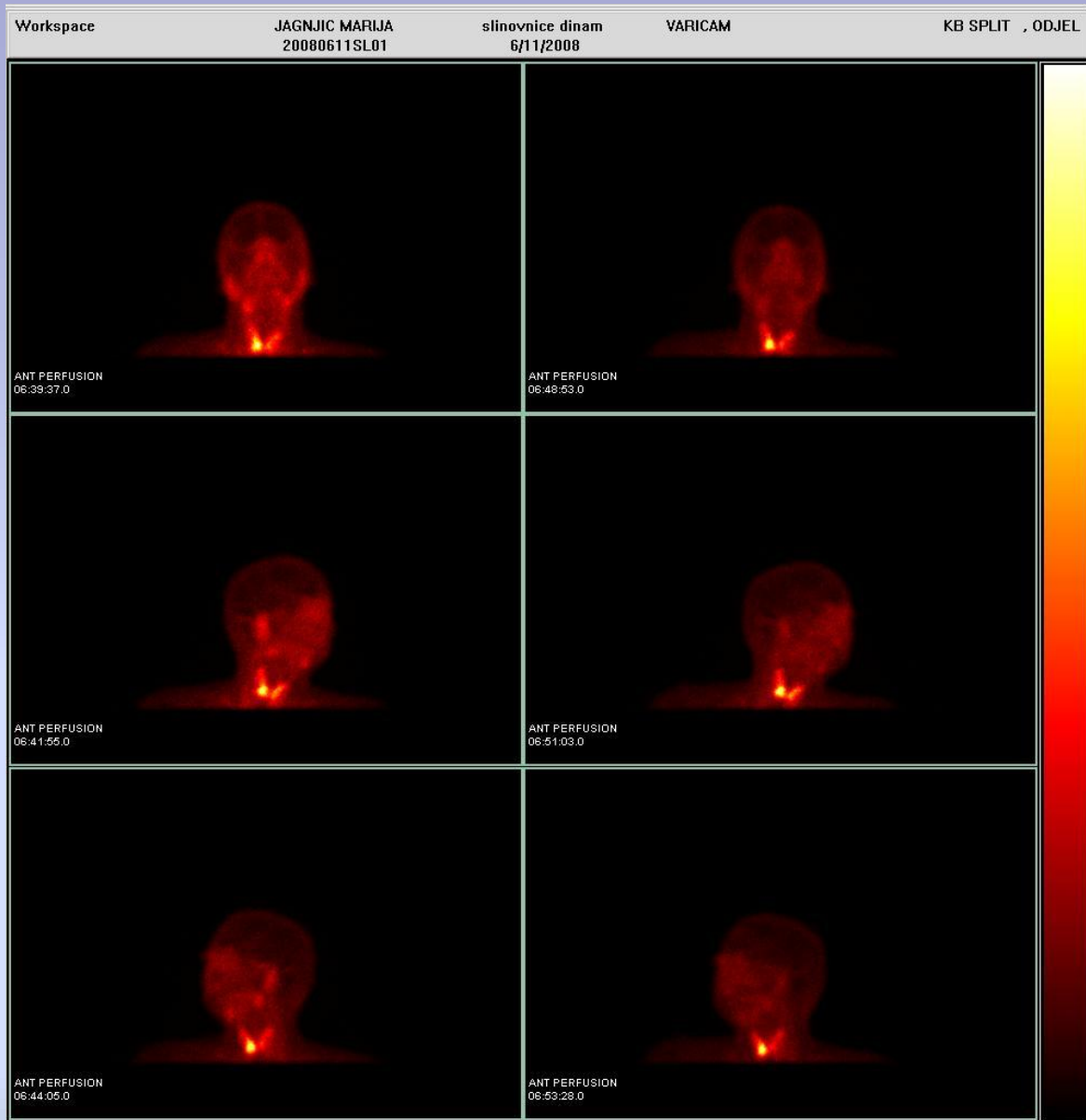
Normal uptake



Decreased uptake



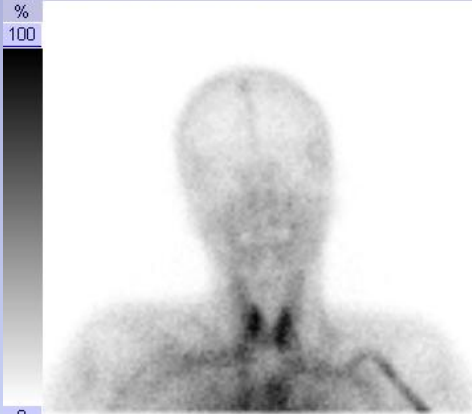
Normal uptake, decreased washout



Decreased uptake, normal washout

Study Date: 24-Jun-2013

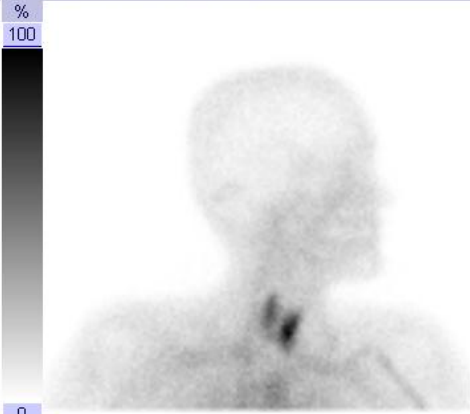
EARLY STATIC 24-Jun-2013



AP 514K 99m Technetium

Image 1

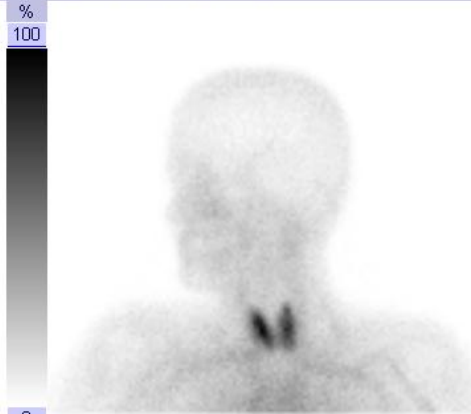
EARLY STATIC 24-Jun-2013



RAO 512K 99m Technetium

Image 2

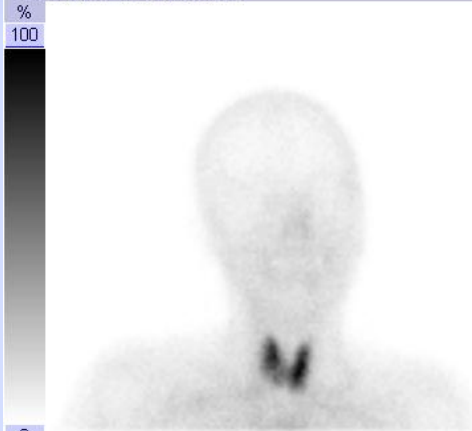
EARLY STATIC 24-Jun-2013



LAO 511K 99m Technetium

Image 3

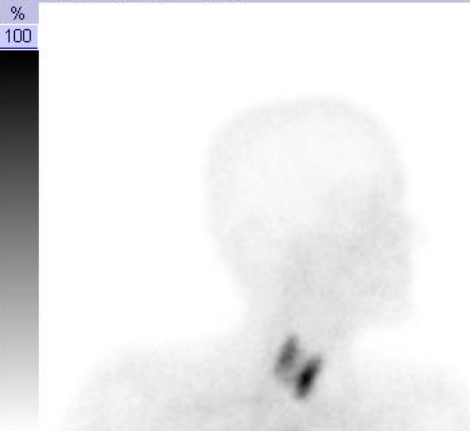
LATE STATIC 24-Jun-2013



AP 428K 99m Technetium

Image 1

LATE STATIC 24-Jun-2013



RAO 426K 99m Technetium

Image 2

LATE STATIC 24-Jun-2013



LAO 421K 99m Technetium

Image 3

Absent uptake in salivary glands- severe functional impairment

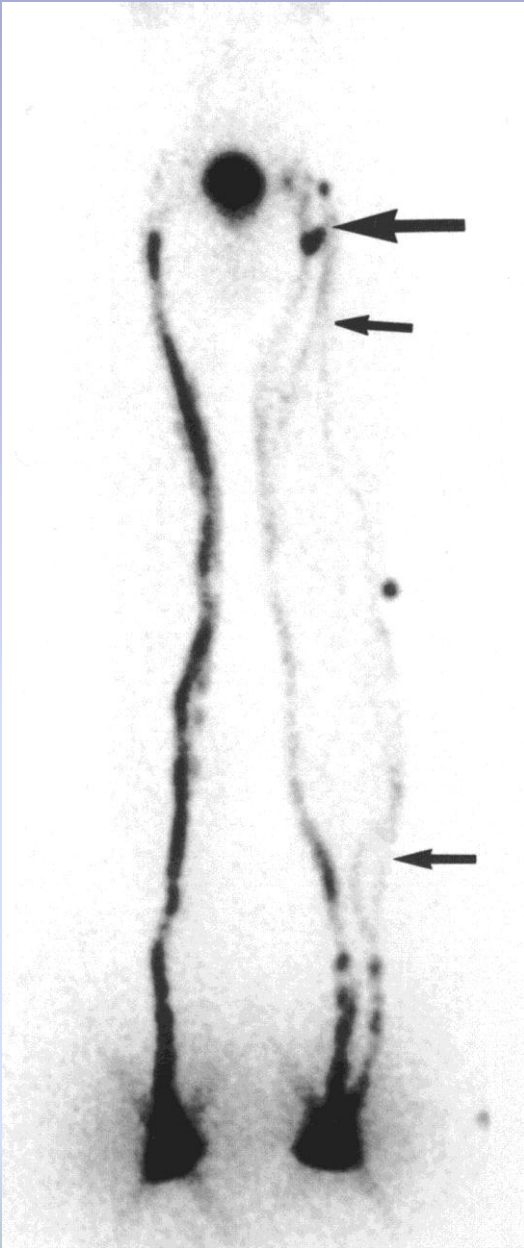
# LYMPHOSCINTIGRAPHY

- After applying radiolabeled colloid in interstitial space regional lymph node can be visualized
- Tc-99m- aggregated albumin, size of 30 nm



Lower extremity  
lymphoscintigraphy-  
normal findings



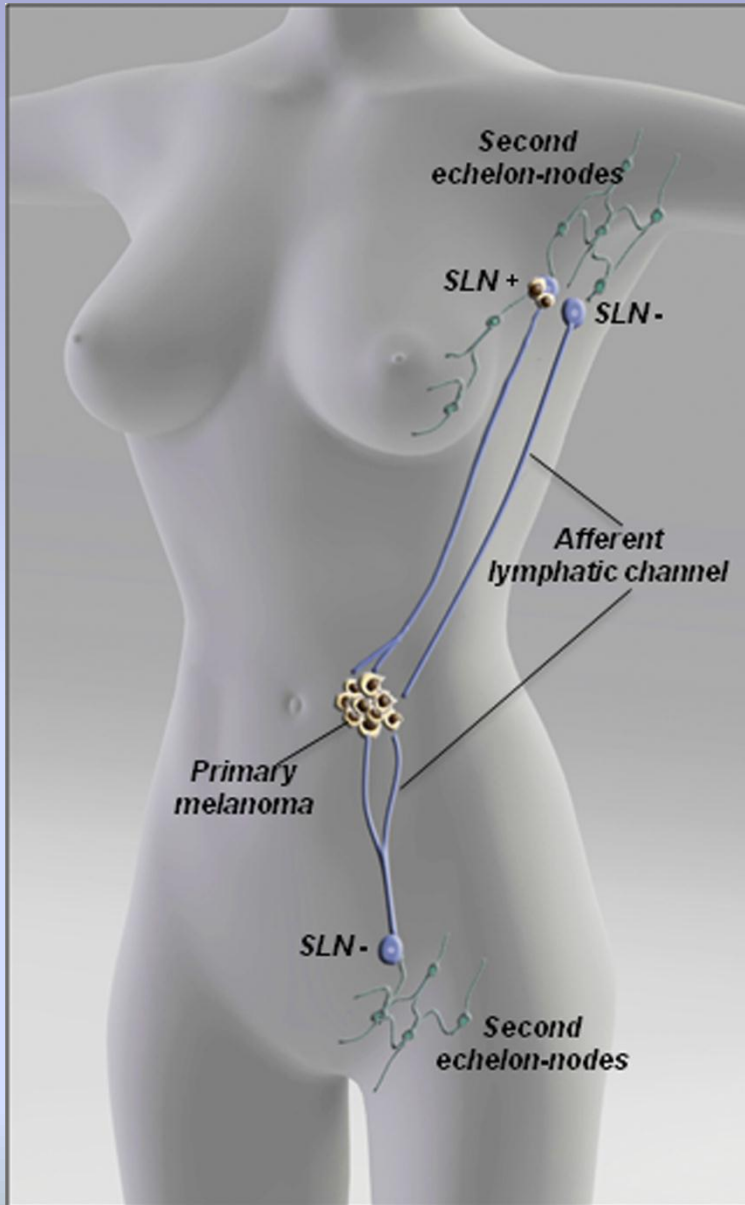


58-yr old male with left leg lymphedema after prostatic resection and bilateral pelvic lymph node dissection.

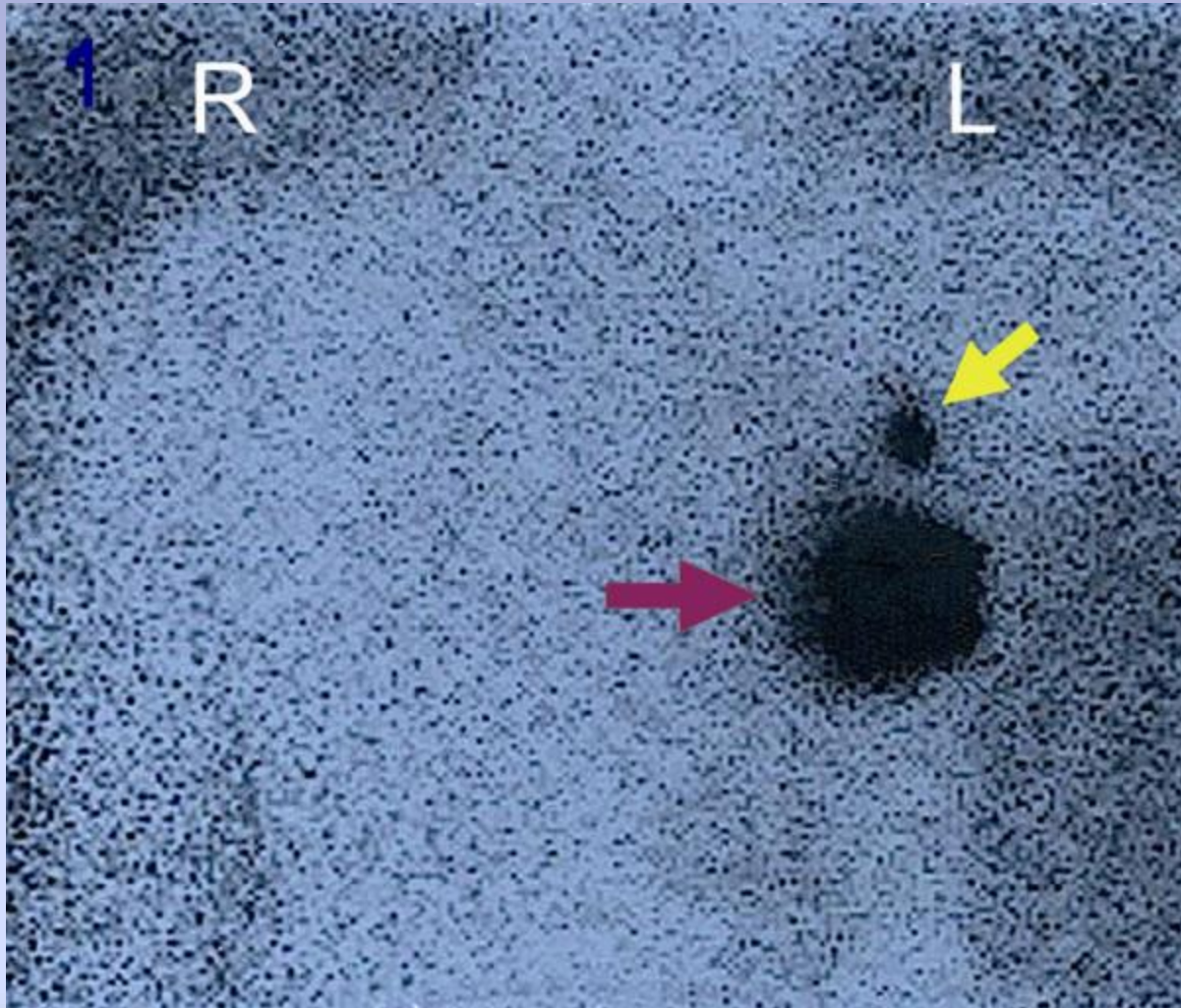
Anterior lymphoscintigram 95 min post injection- delayed lymph drainage, enlarged lymph node in the left inguinal area and collateral lymphatic drainage pathway from lower leg and thigh

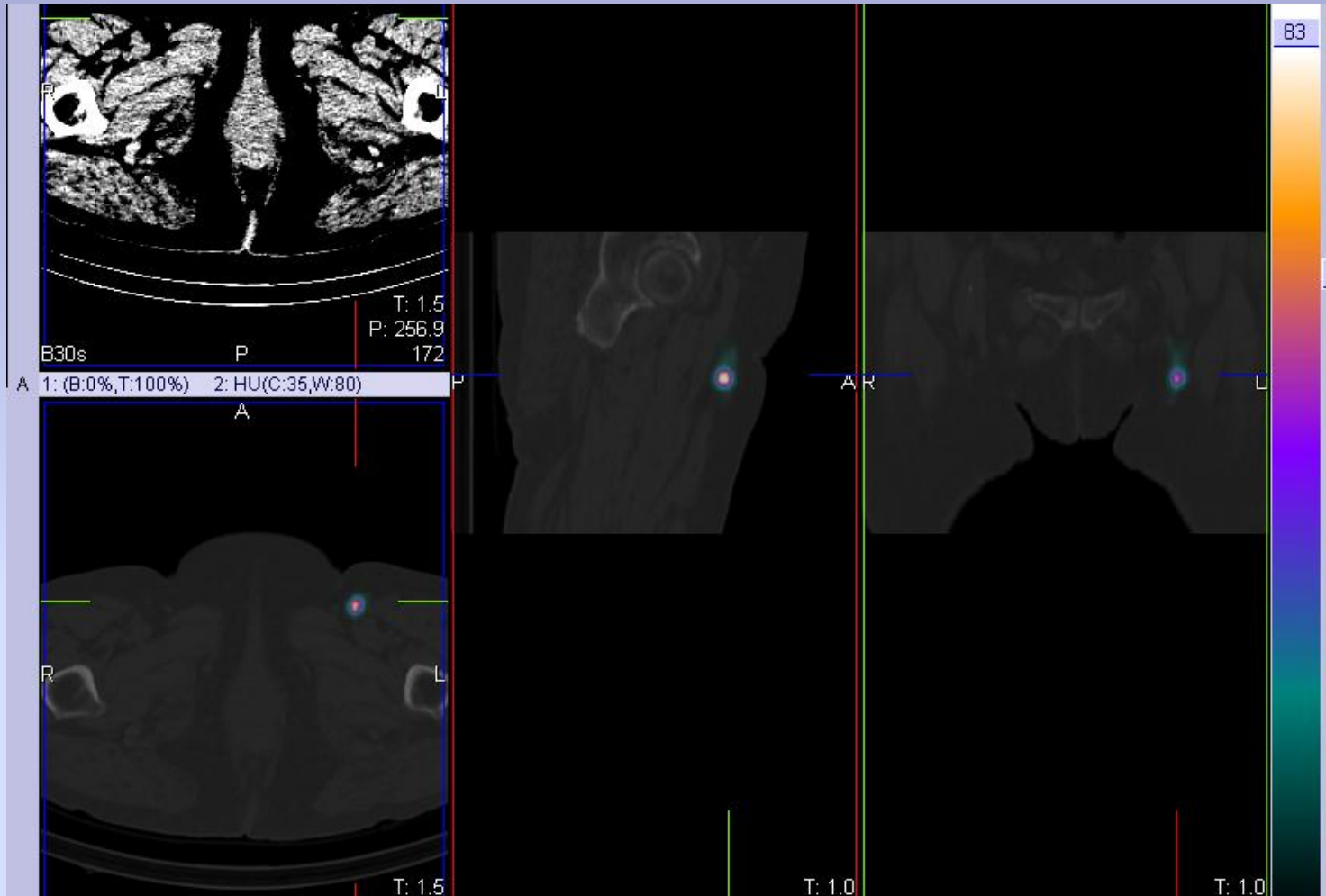
# Sentinel lymph-node scintigraphy

- Nowadays lymphoscintigraphy is generally used for detection of sentinel lymph nodes (guardian lymph node)
- Most commonly for melanoma, breast carcinoma, but also in many other cancers

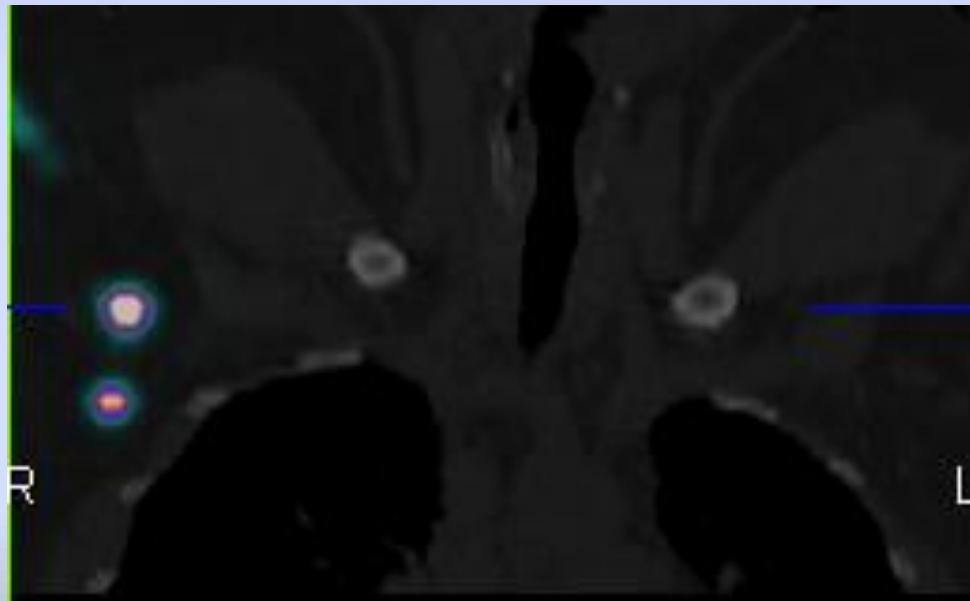
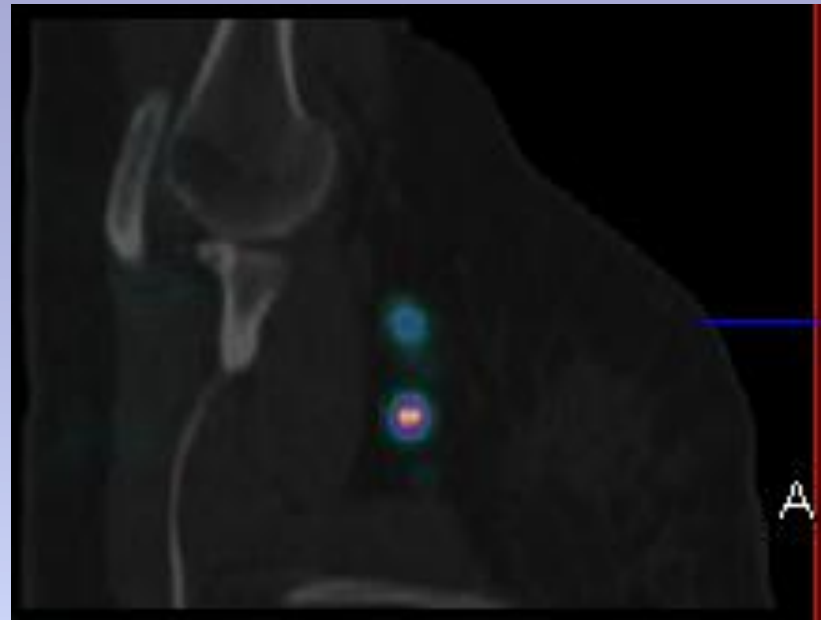
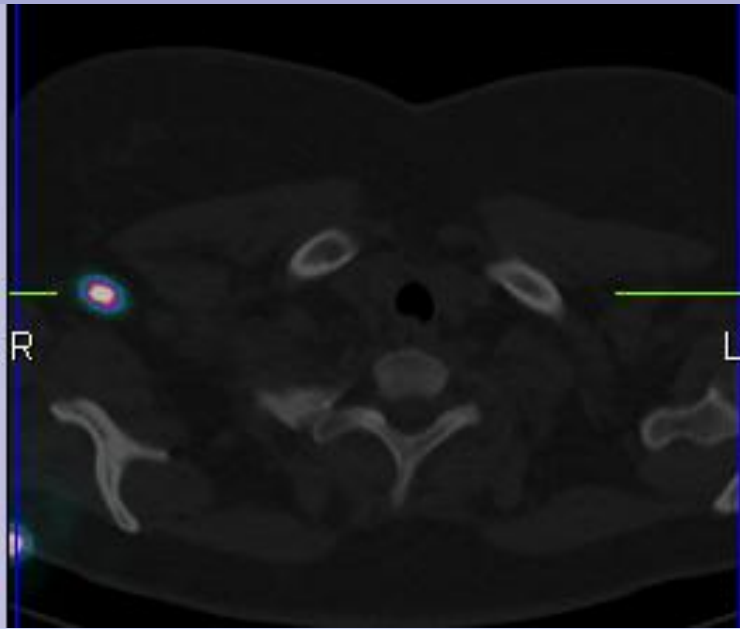


**Schematic representation of the SLN concept, defined as the lymphatic station first encountered by tumor cells entering the lymphatic circulation. Photograph shows a primary cutaneous melanoma of the left abdominal wall and some afferent lymphatic channels draining to a left inguinal SLN (negative for the presence of metastases [SLN-]) and to 2 left axillary SLNs (one of which positive for the presence of melanoma cells [SLN+]).**



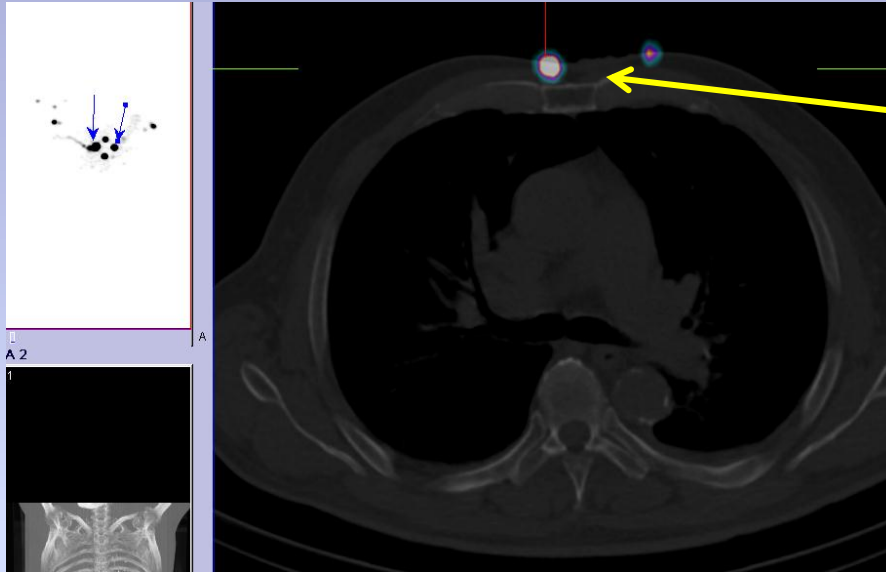


Melanoma of the left thigh- sentinel lymph node in the inguinal region

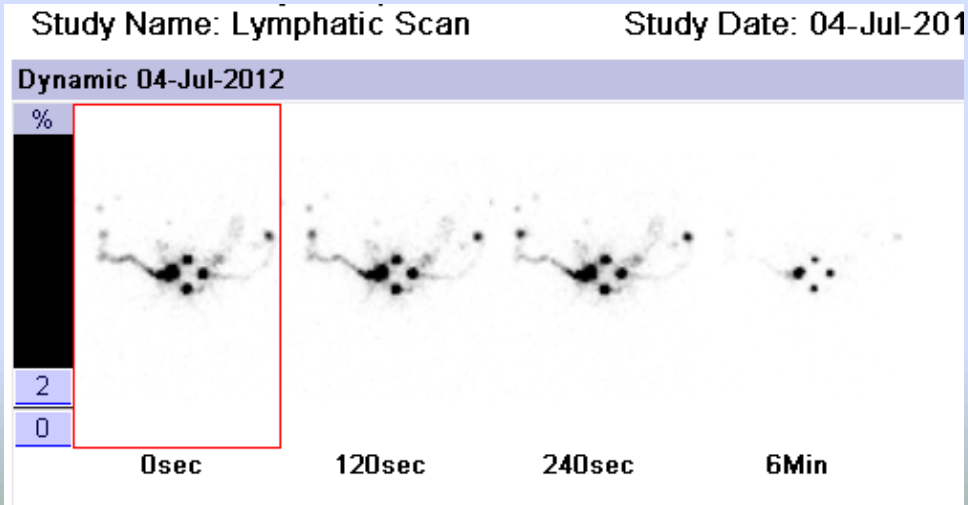


Right breast cancer: sentinel lymph nodes in the right axilla

# Melanoma of the chest wall

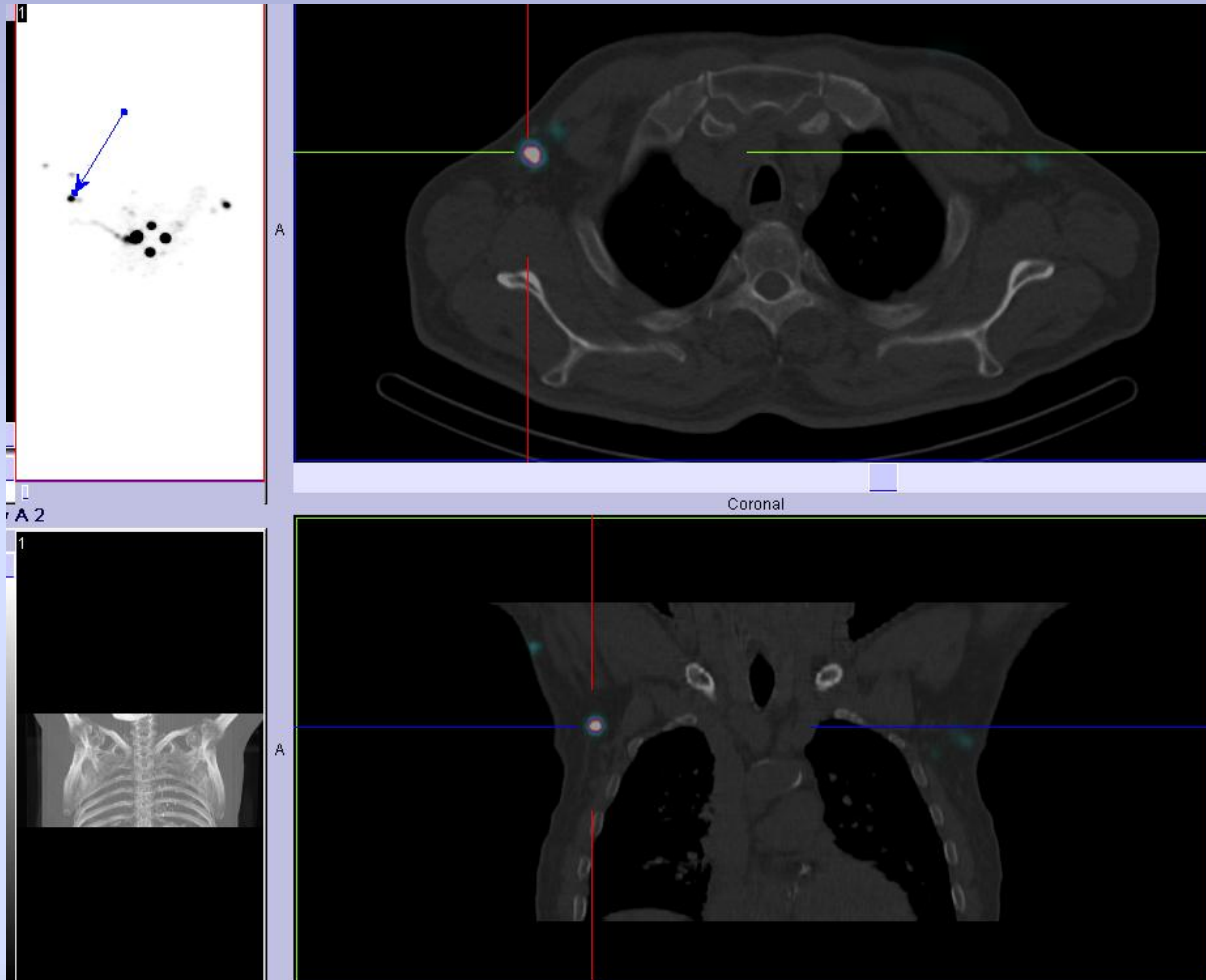


injection site



Dynamic study- lymphatic drainage in both axillas

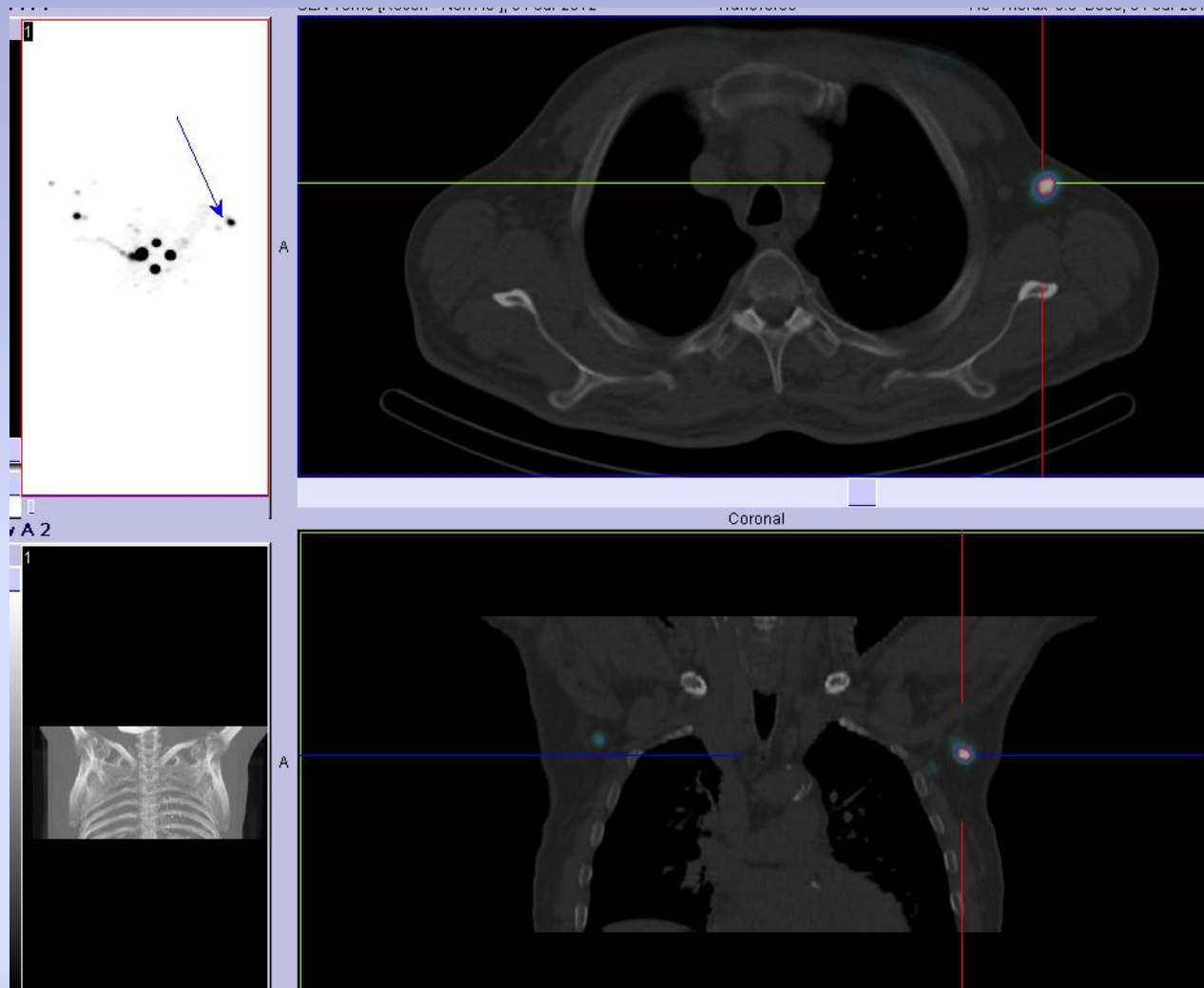
# Melanoma of the chest wall



Sentinel lymph node in the right axilla

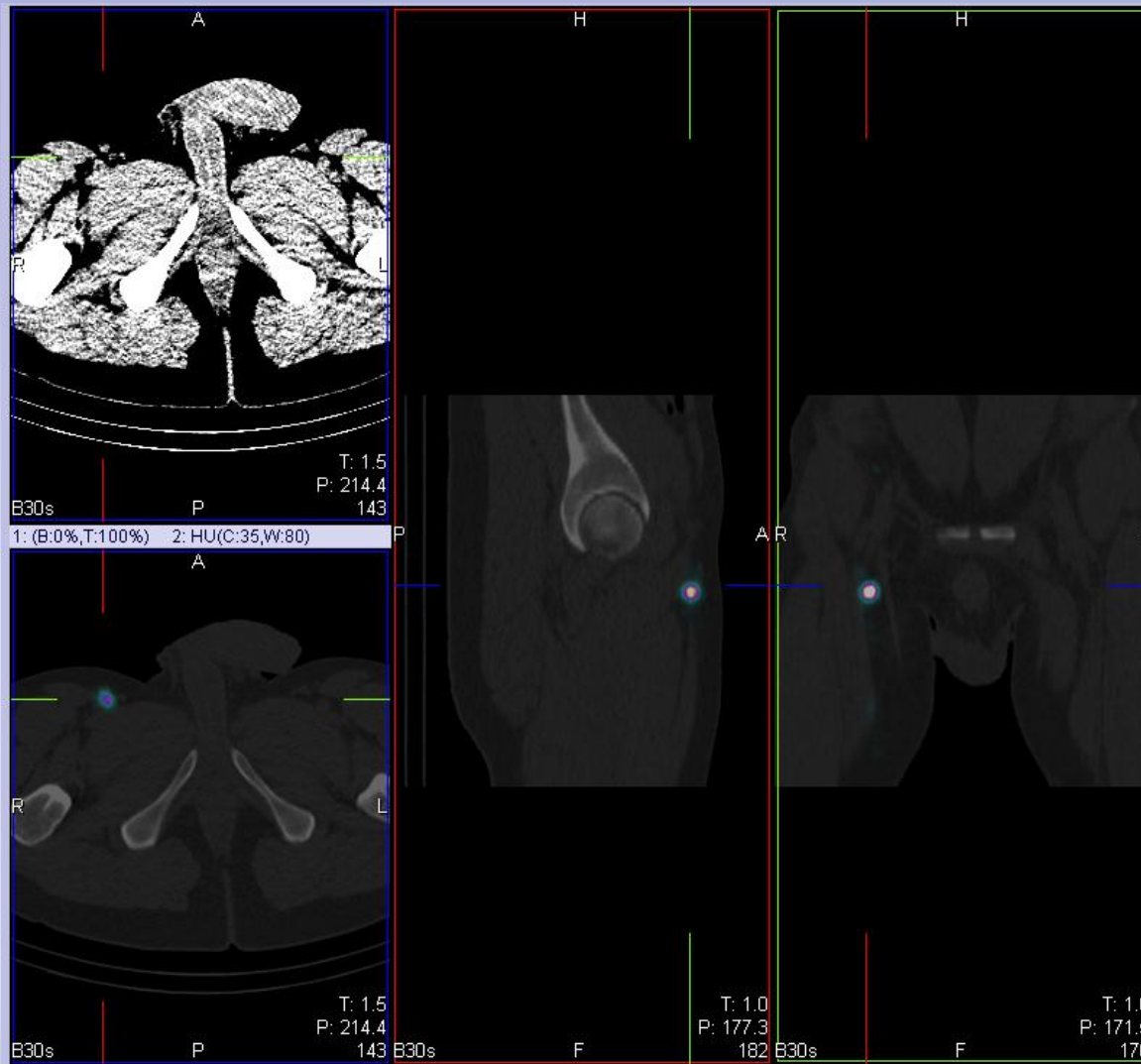


# Melanoma of the chest wall



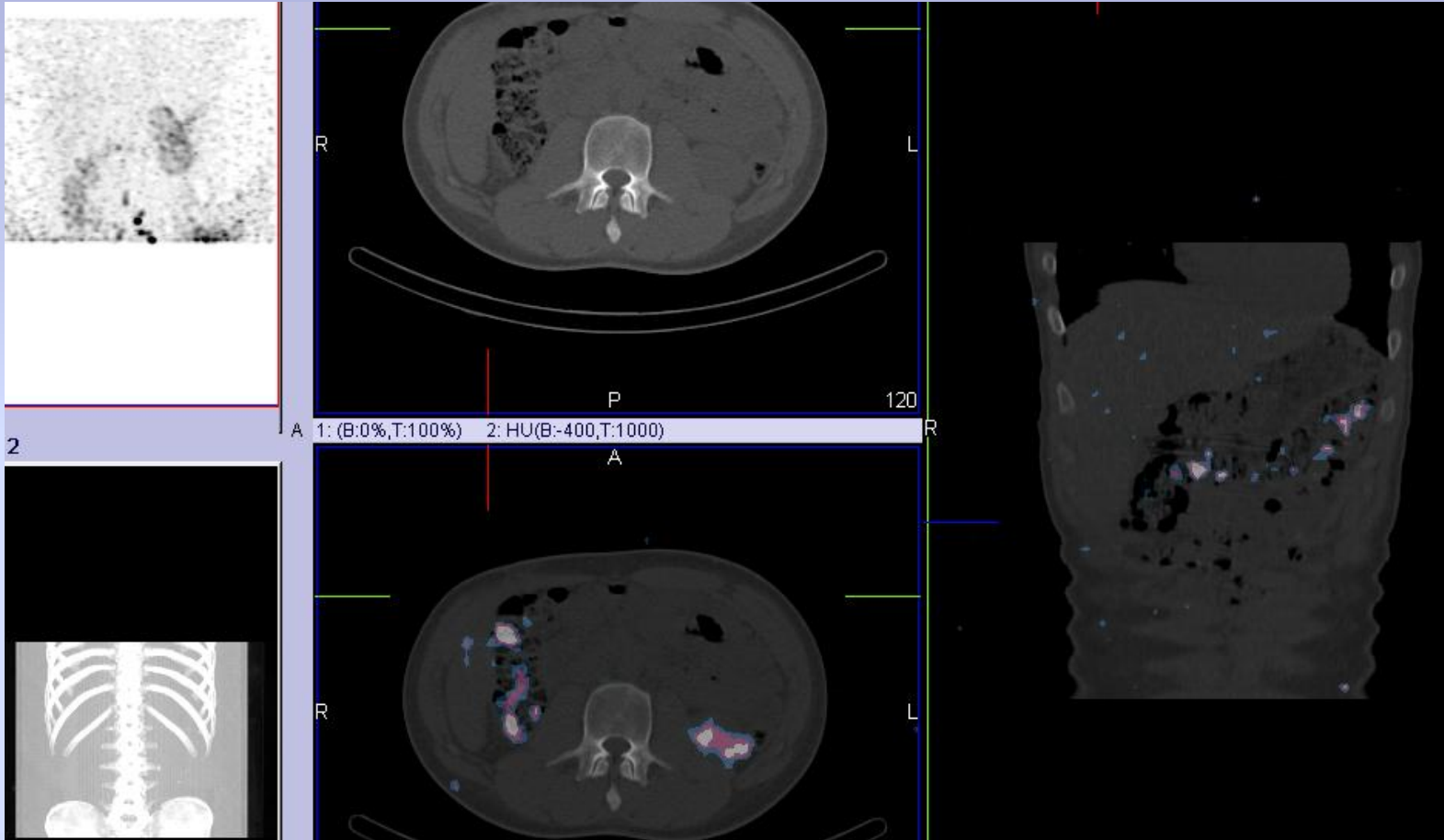
Lymphatic drainage also on the left axilla.  
Sentinel lymph node in the left axilla.

# Melanoma on the right thigh



Sentinel lymph node in the right inguinal region

# Gastrointestinal lymphorrhea



# Gastrointestinal lymphorrhea



THE END