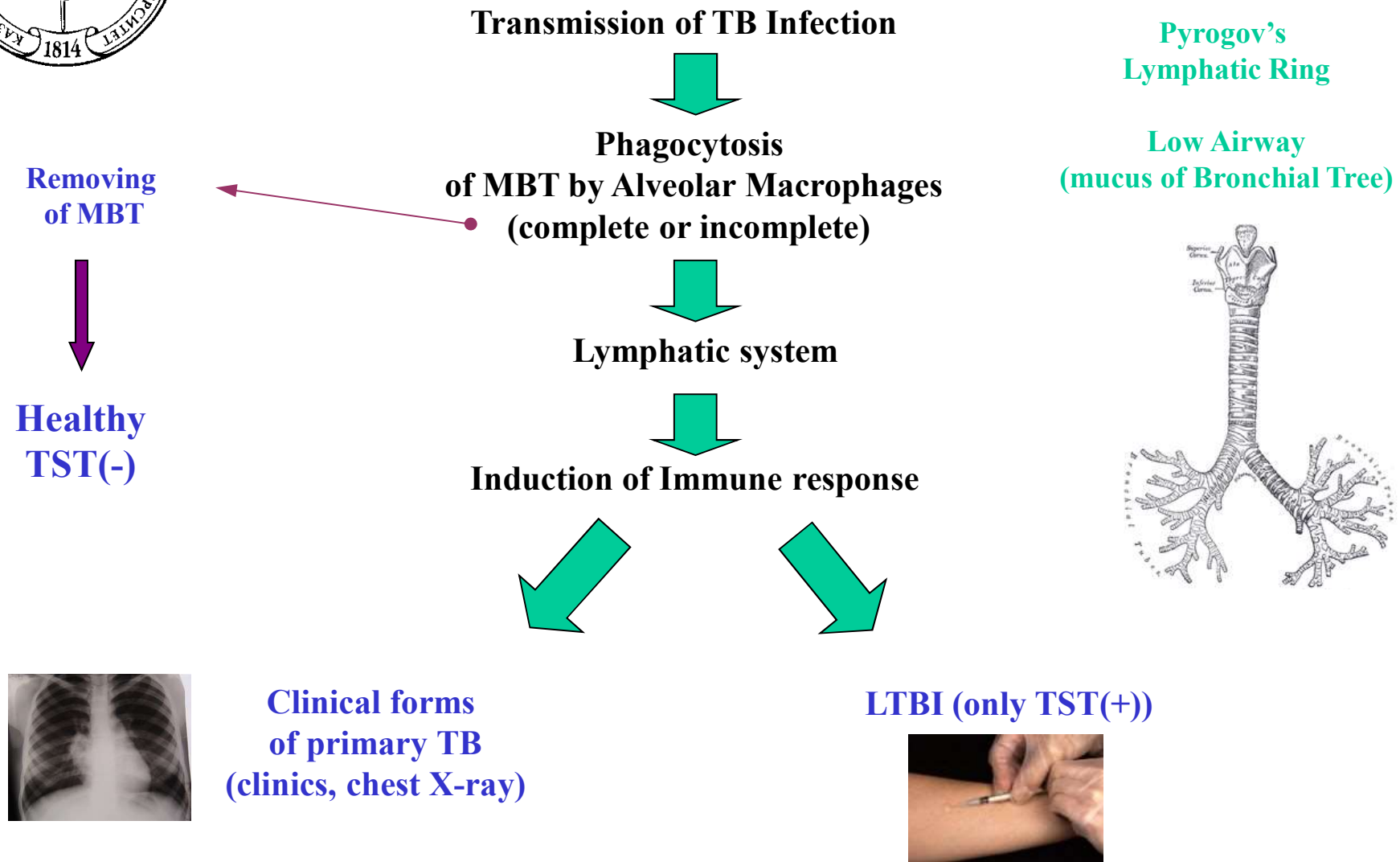


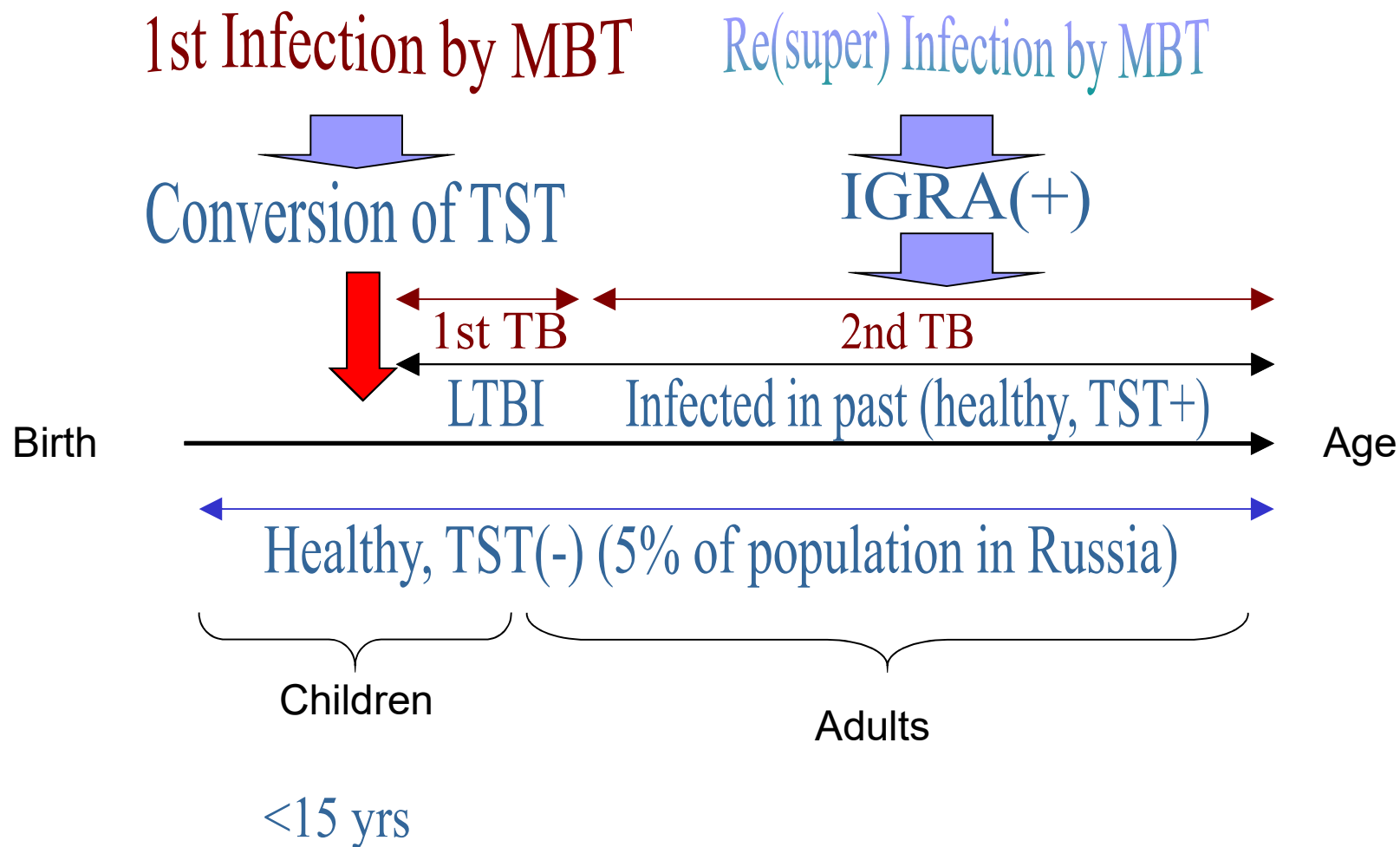


Pathogenesis of primary TB





Waves of TB Infection



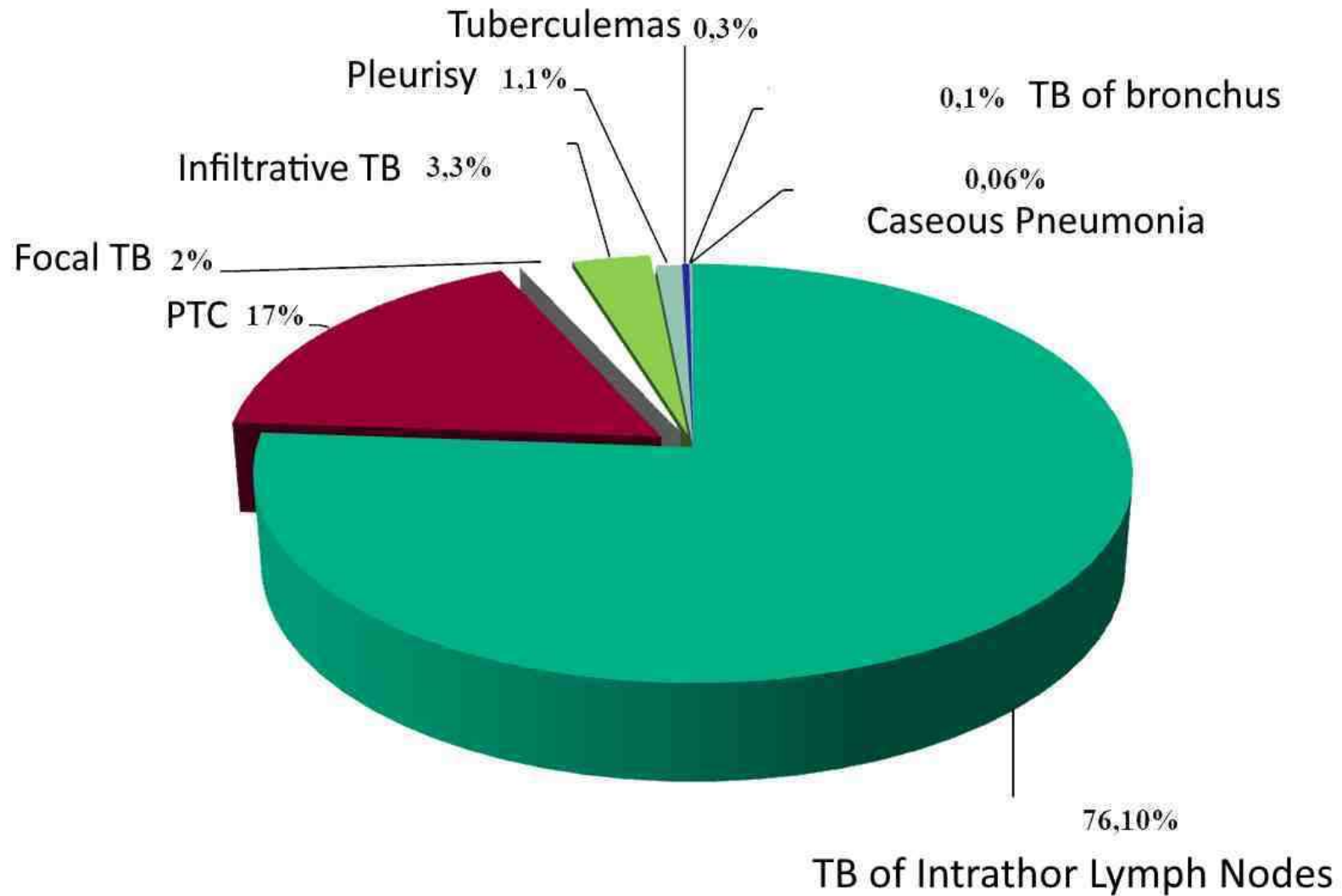
Primary TB

(TB caused by primary infection of TB)

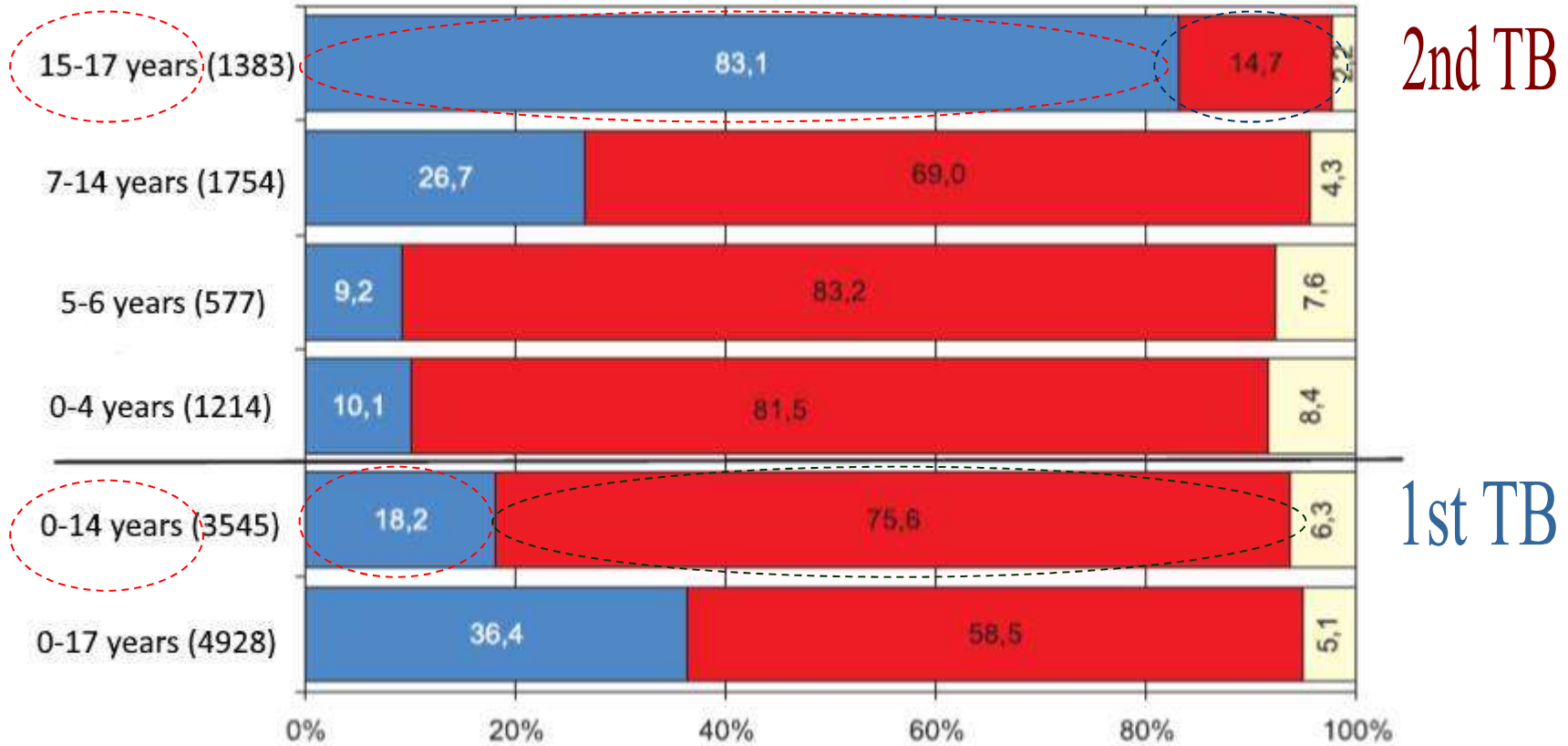
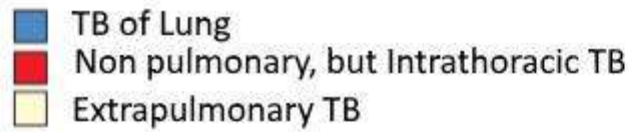
- **Age:** *children and teenagers; before 25-30 yrs*
- **Conversion of TST :** *changes in TST due to primary TB infection*
- **Lymphatic system involvement:** *Intrathoracic lymph nodes (root of lung), peripheral lymph nodes (neck, axillary, inguinal)*
- *Atelectasis (collapse) of S_{3,4,5}*
- *TB of bronchus*
- *Paraspecific reactions (catarrh, rheumatoid Poncet (knee, coxofemoral joints), keratitis, erythema nodosum etc.)*
- *Calcification*



Clinical Structure of Children TB (Omsk)

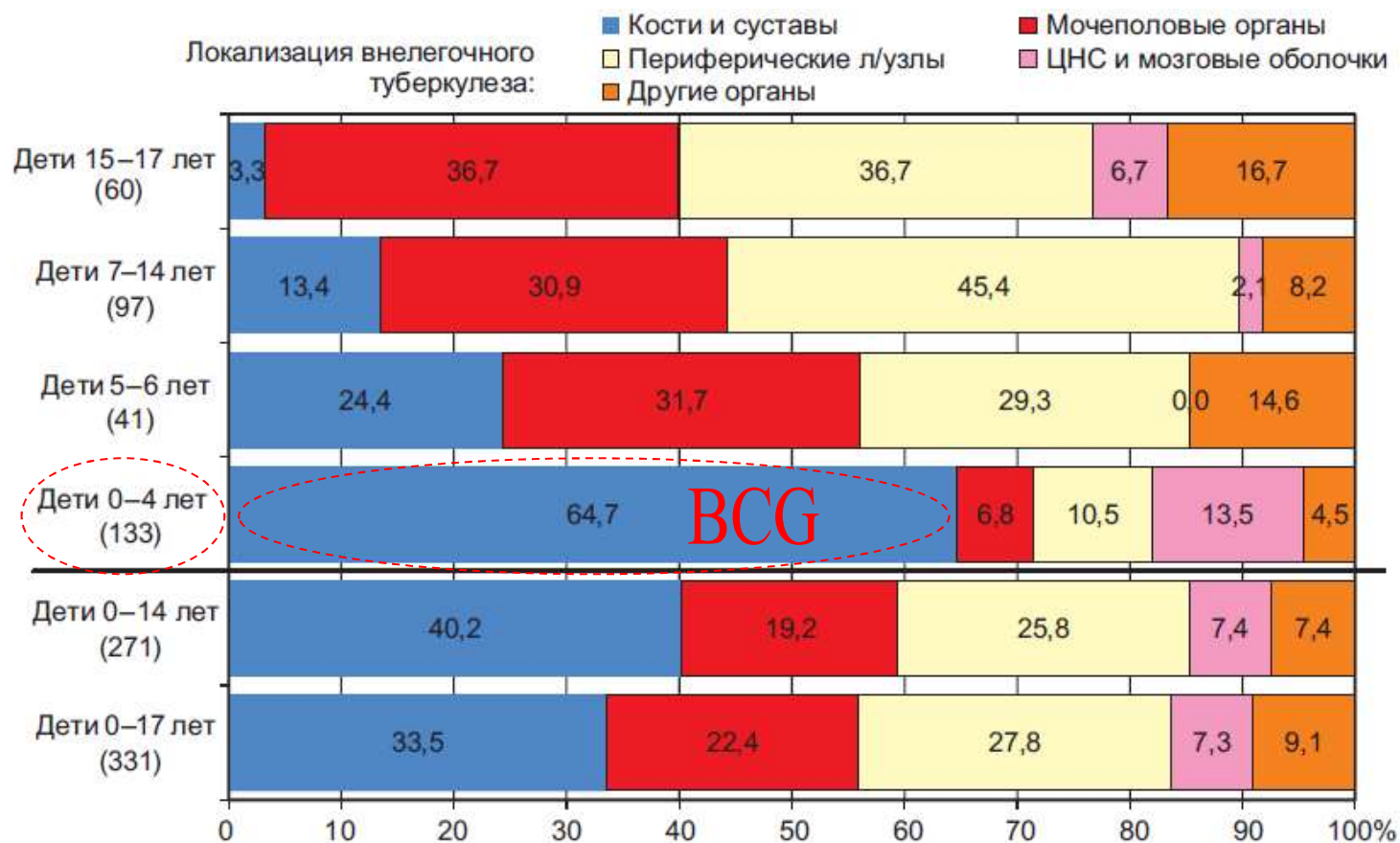


Location of TB



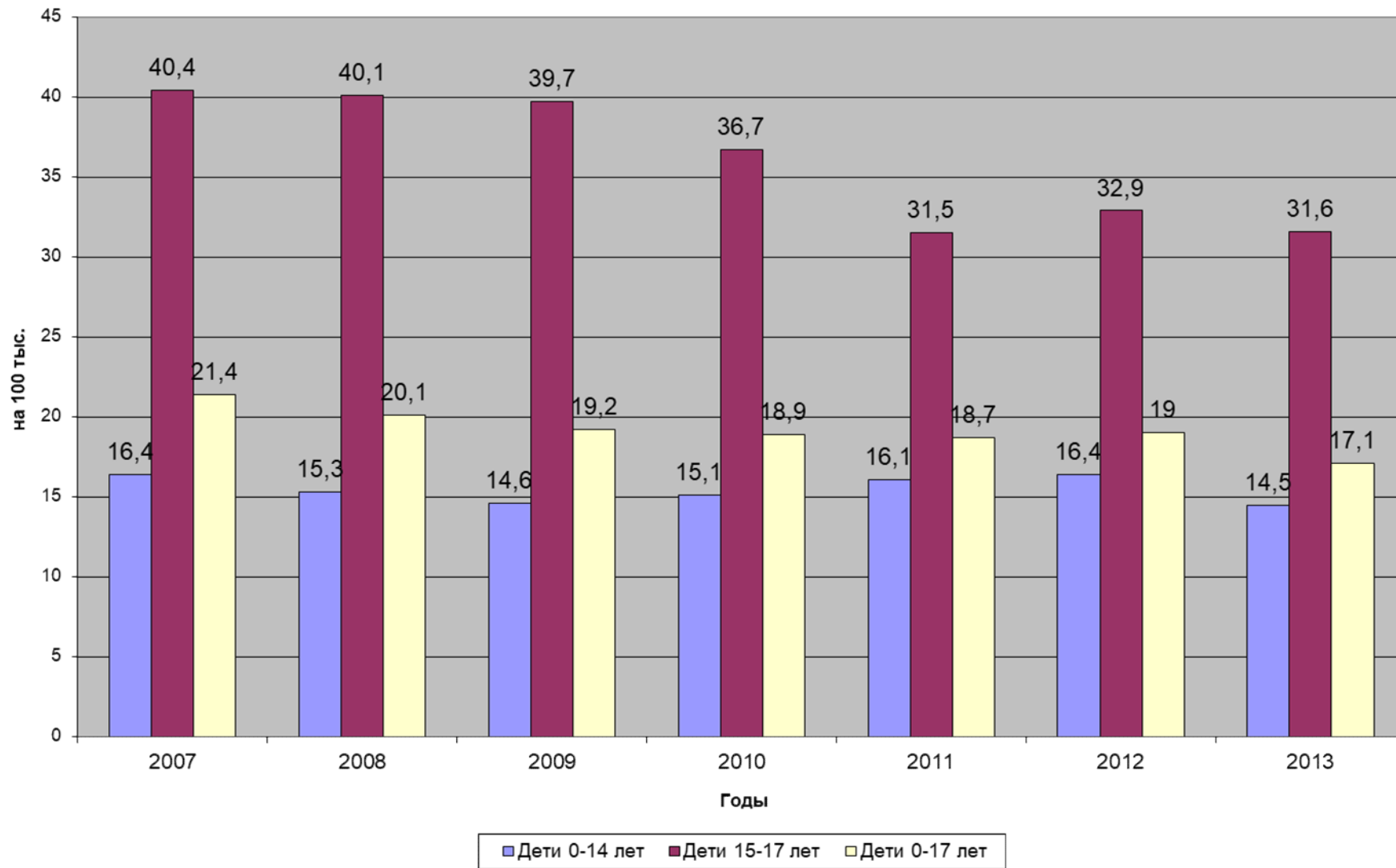
Clinical structure of new cases of TB in children & teenagers

Extrapulmonary TB in children



б) Локализация внелегочного (внереспираторного) туберкулеза. В скобках боковика указано число зарегистрированных впервые выявленных детей, больных внелегочным туберкулезом, данной группы возрастов

Morbidity of TB in Children & Teenagers in Russia





Clinical Classification of TB

(Приказ МЗ РФ №109, 2003)

1.1.1. TB intoxication of children and teenagers

1.1.2. Pulmonary TB

- Primary TB complex
- TB of Intrathoracic Lymph Nodes
- Disseminated TB
- Miliary TB
- Focal TB
- Infiltrative TB
- Caseous Pneumonia
- Tuberculomas
- Cavernous TB
- Fibrous cavernous TB
- Cirrhotic TB





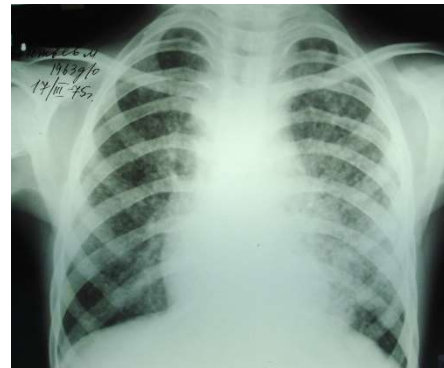
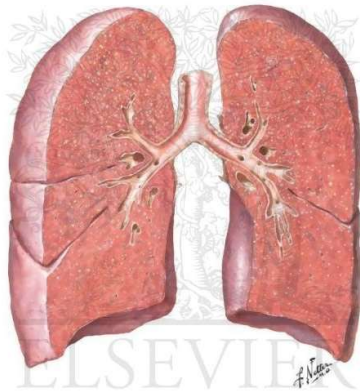
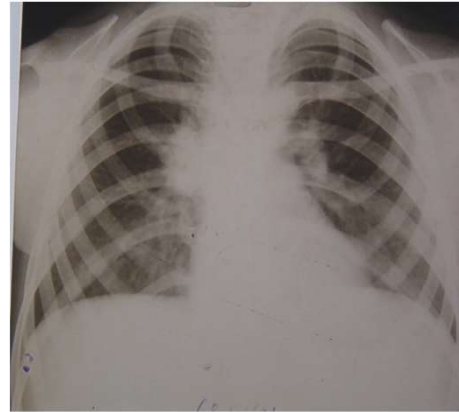
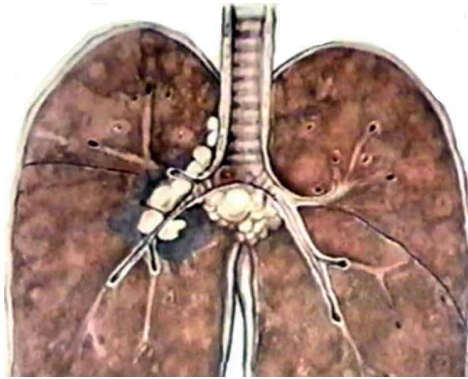
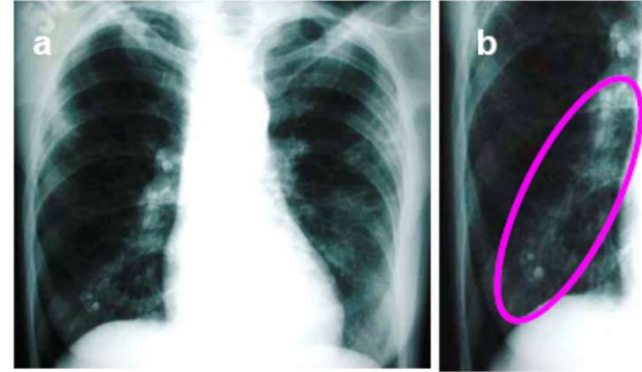
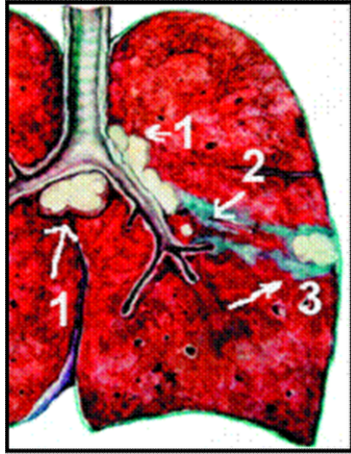
Clinical Classification of TB

- TB Pleurisy (including empyema)
- TB of bronchi, trachea, upper airway
- Pulmonary TB, combined with occupational lung diseases

1.1.3. Non-pulmonary TB

- Central nervous system and meningeal TB
- TB colitis, peritoneal and mesenteric lymph nodes TB
- TB of bones and joints
- Genitourinary TB
- Skin and subcutaneous TB
- TB of peripheral lymph nodes
- TB of eyes
- TB of other organs







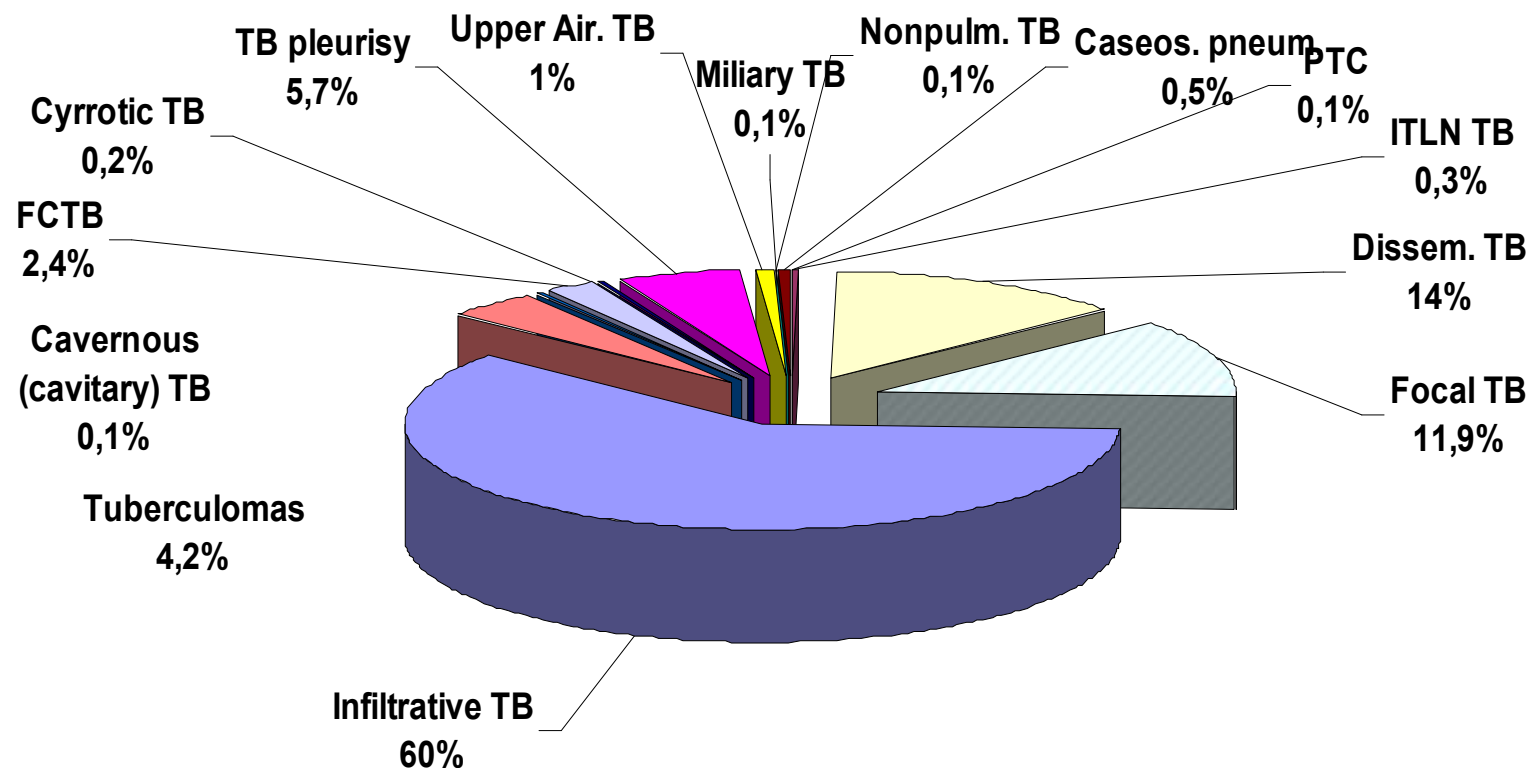
Primary TB

(clinical forms, classification)

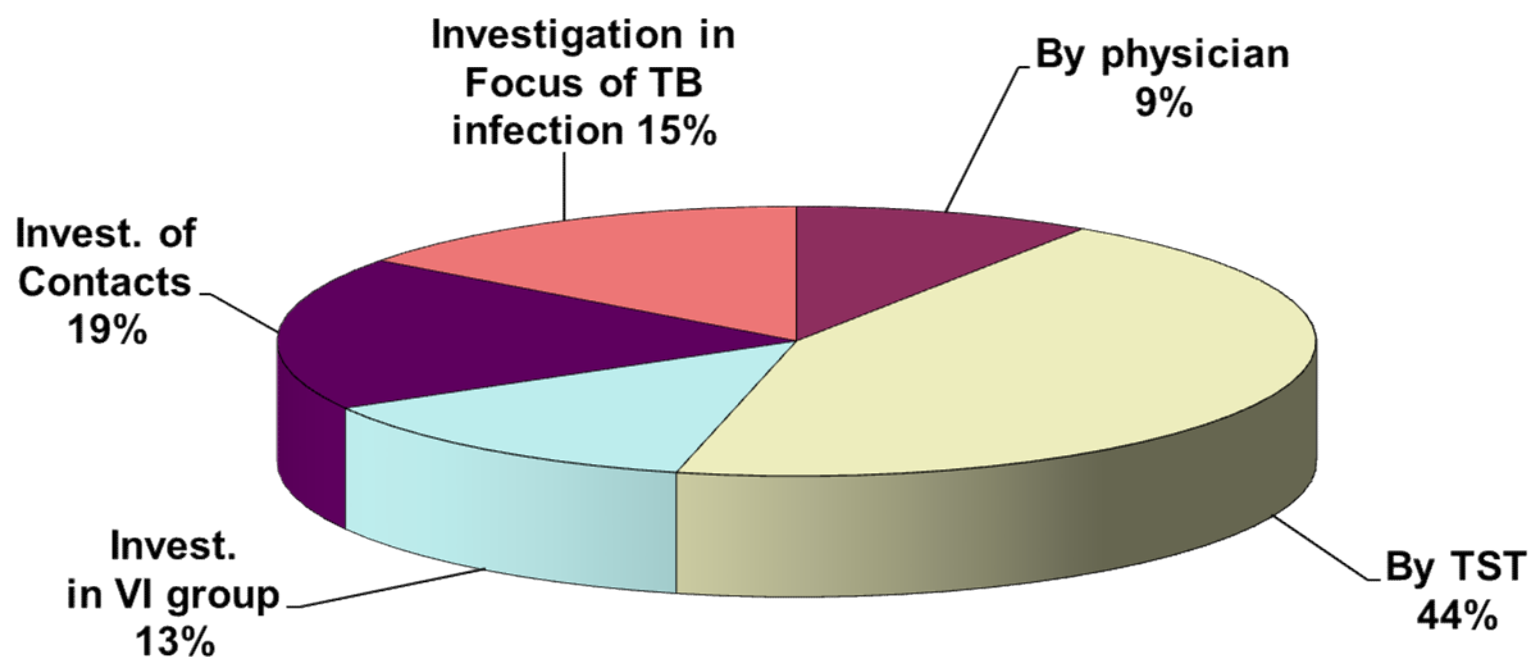
- TB Intoxication of children and teenagers
 - TB of Intrathoracic Lymph Nodes
 - Primary TB complex
 - **Lung forms** (*focal, infiltrative, disseminated u dp.*) 18%
 - TB Pleurisy
 - TB of Peripheral Lymph Nodes
 - TB Meningitis
 - TB of bones
 - Others **Extra-pulmonary** TB
- Local forms (76%)**
- 6%**



Clinical Forms of New TB cases in RF

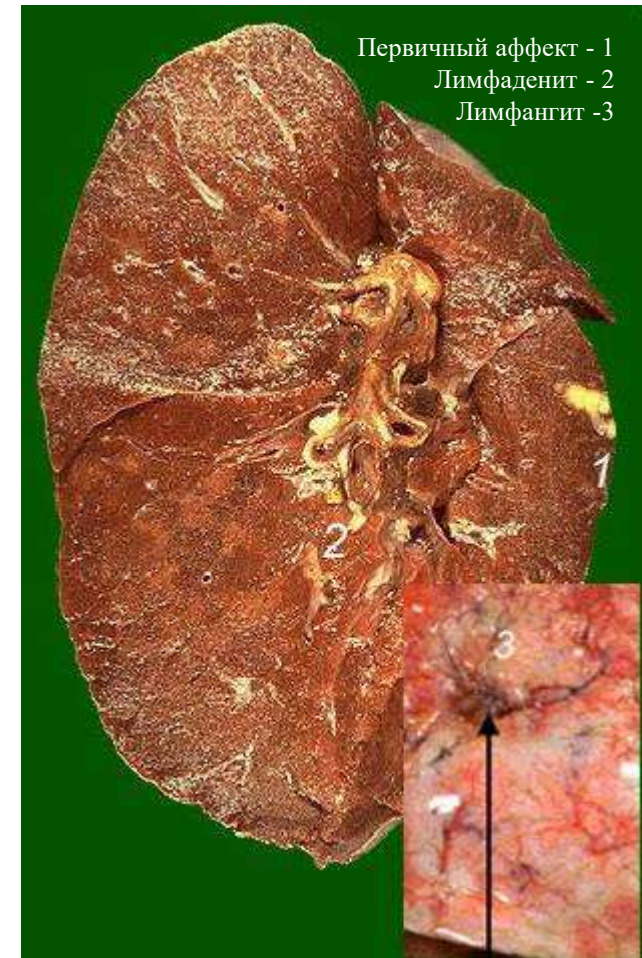
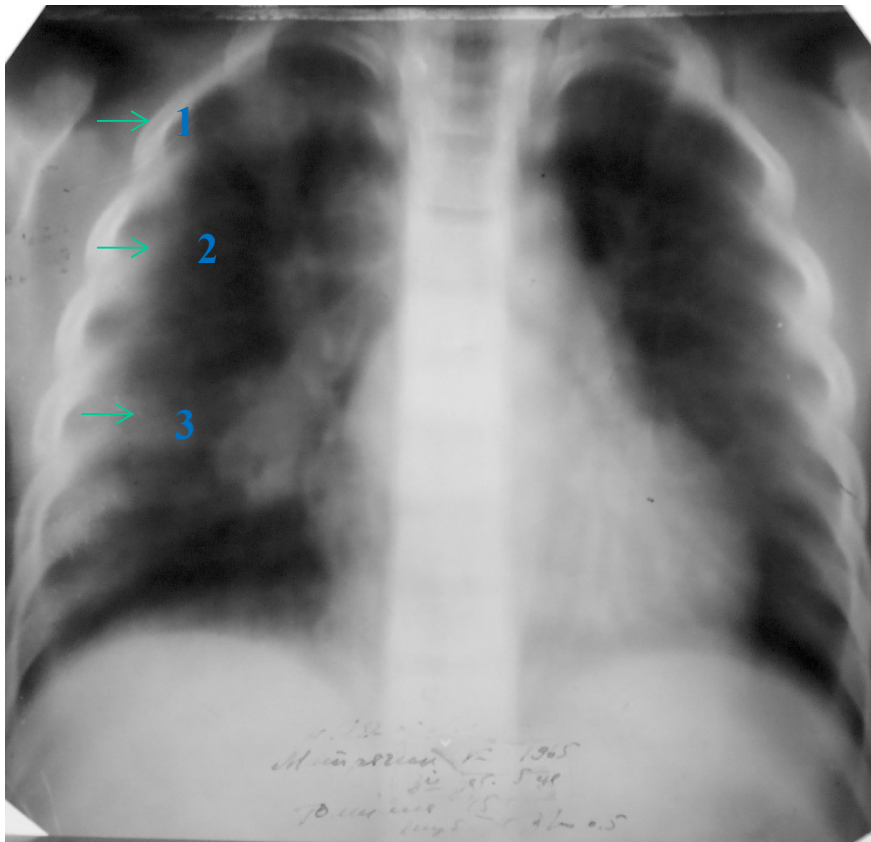


Detecting of TB in Children & teenagers in Rep. Tatarstan



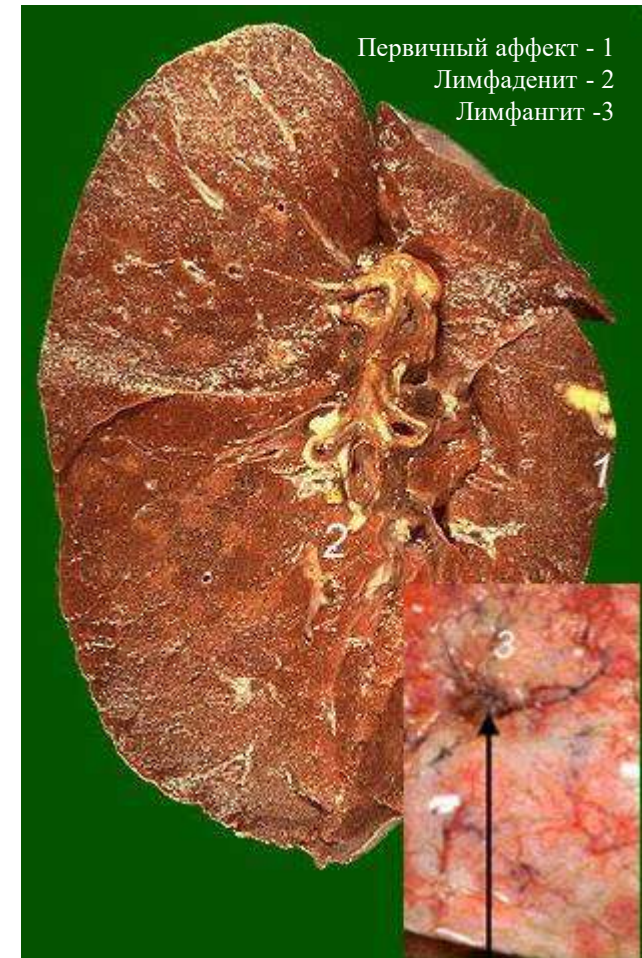
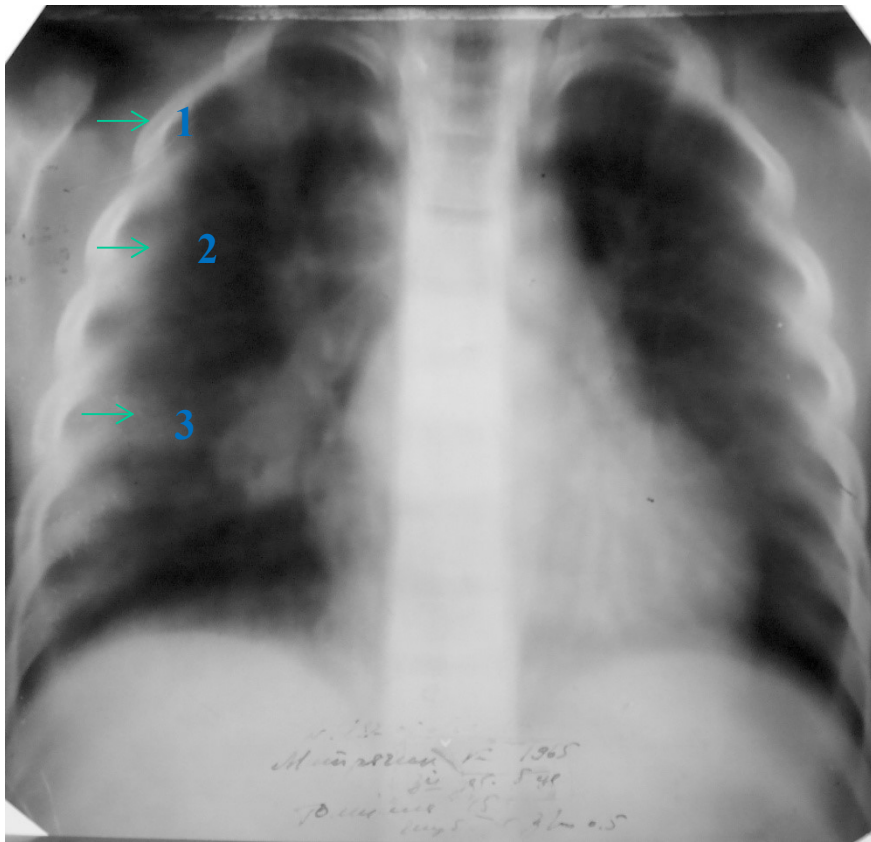
Primary TB complex

Clinical form of primary TB for which triad on chest X-ray is typical

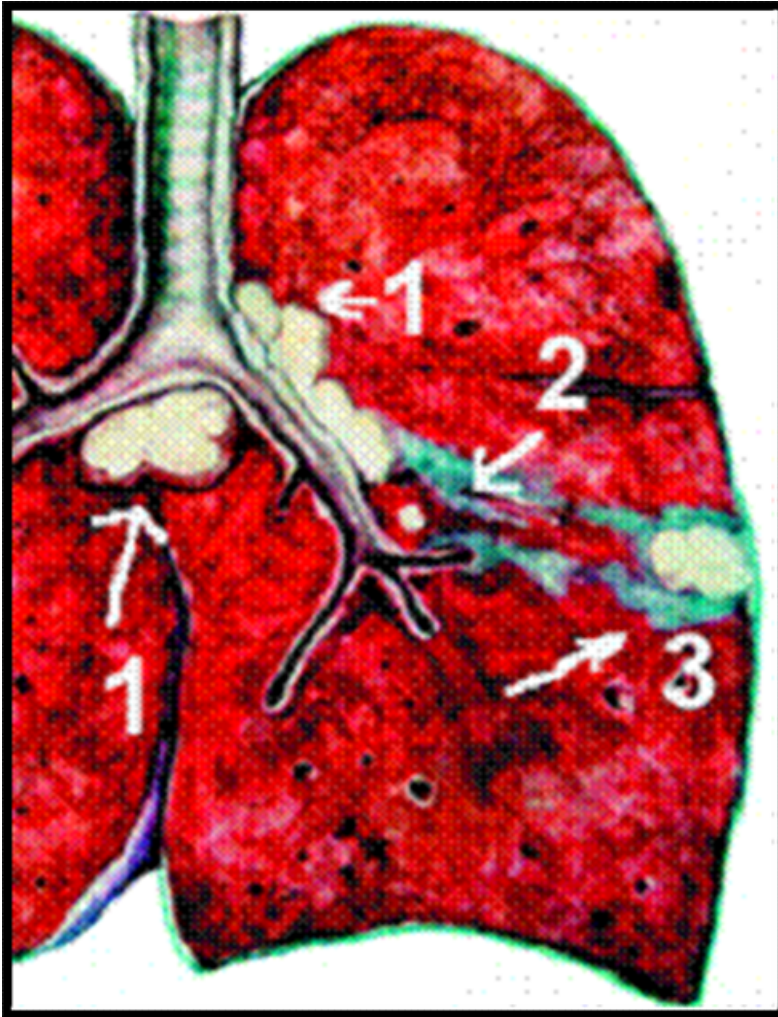


Primary TB complex

Clinical form of primary TB for which triad on chest X-ray is typical



Primary TB complex



Triad

Lymphadenitis (1)

Lymphangitis (2)

Primary affect (3)



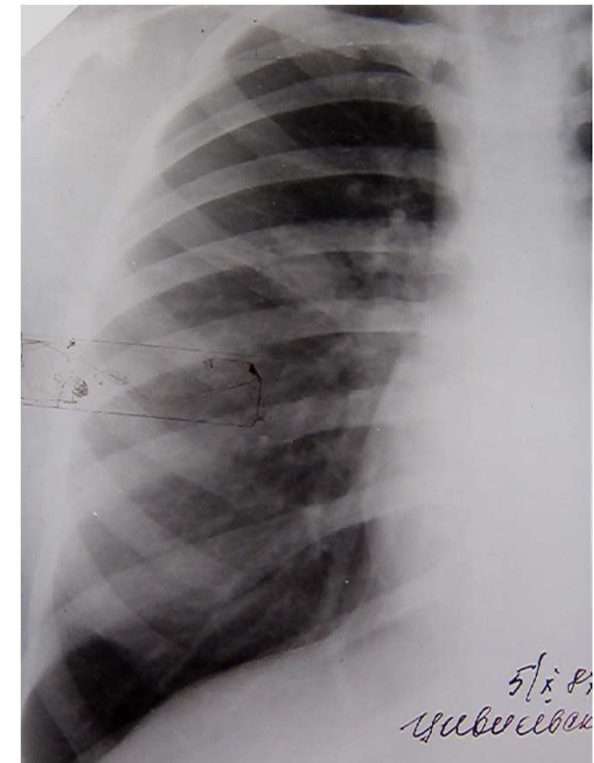
Primary TB complex

➤ Pathogenesis

- *classic way – from lung (primary affect in lung) to lymph nodes (lymphadenitis)*
- *non direct way – from lymph nodes (lymphadenitis) to lung (primary affect in lung)*

➤ Chest X-ray: ‘triad’ – complex:

- *primary affect (2-3 cm shadow in lung, several lobules)*
- *lymphadenitis (changes in lymph nodes)*
- *lymphangitis (path to root of lung)*





Primary TB complex

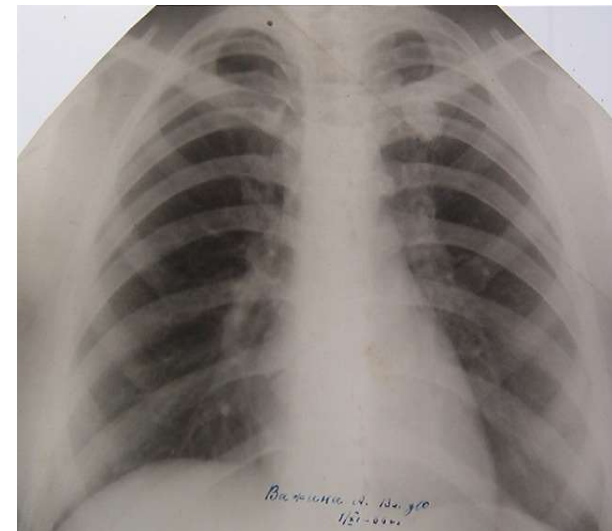
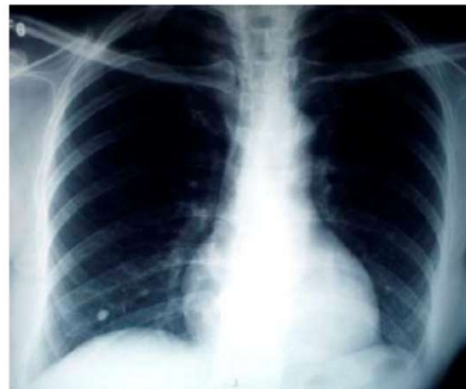
Clinical form of primary TB for which triad on chest X-ray is typical

➤ Clinics

- *Intoxication syndrome*
- *Peripheral lymph adenitis (enlargement of lymph nodes in more than 4 groups)*
- *Para-specific reactions*

➤ Diagnosis

- *Conversion of TST*
- *BK(-)*
- *Chest X-ray – ‘triad’*

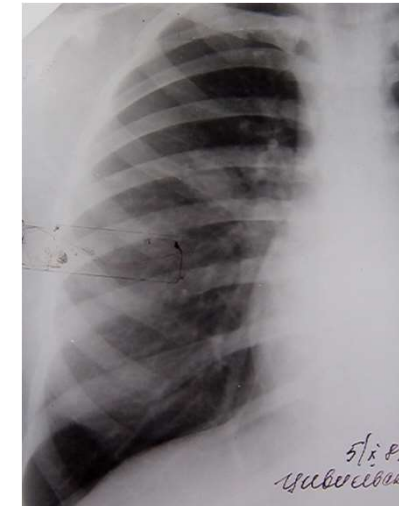




Primary TB complex

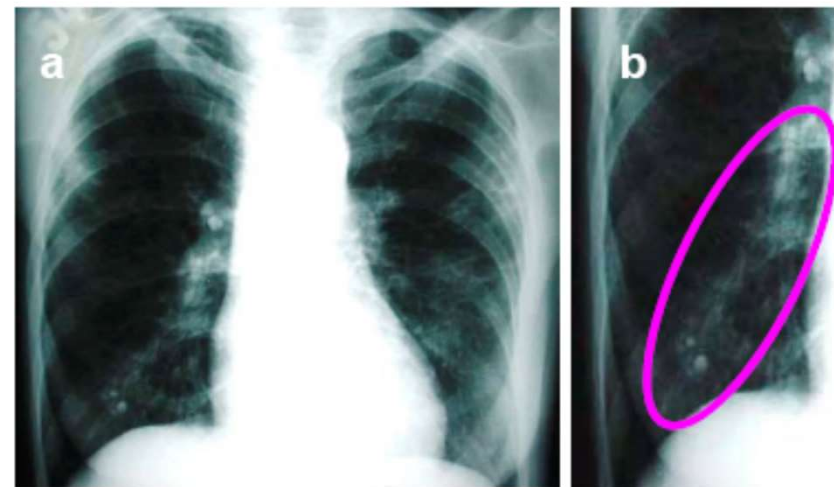
➤ Stages

- *1st – Infiltrative-pneumonic (infiltration in lung)*
- *2nd – resolution (bipolarity)*
- *3rd – condensation*
- *4th – calcification (Gohn's focus)*

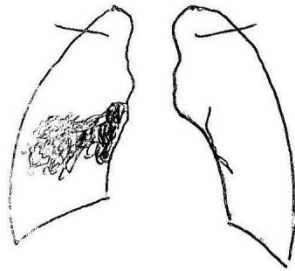


➤ Differential Diagnostics

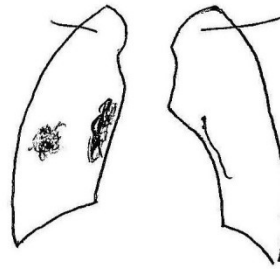
- *Pneumonia*



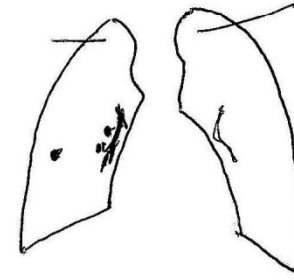
PHASES OF PRIMARY TUBERCULOUS COMPLEX



infiltrative or
pneumonic

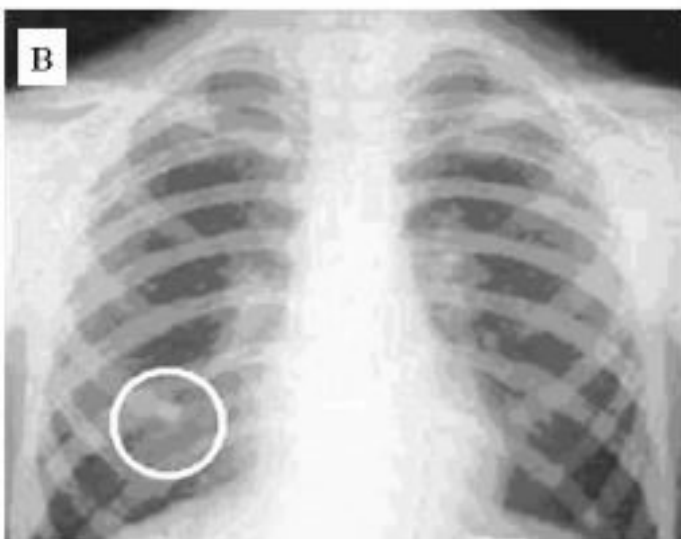
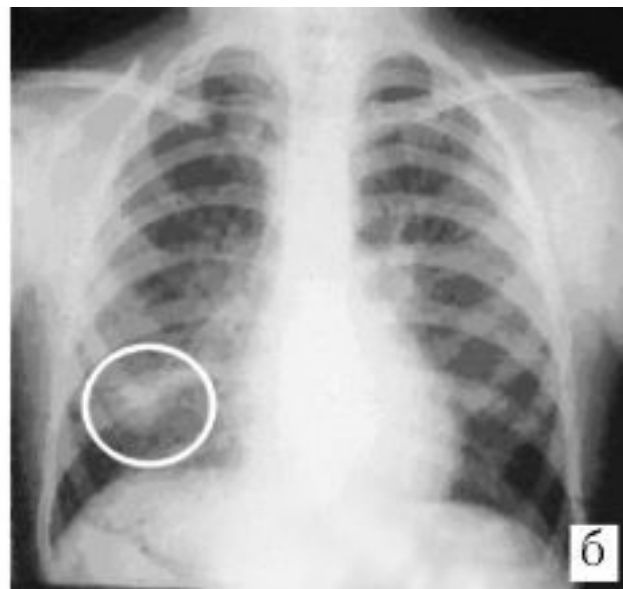


resorbtion
(suction,bipolarities)



calcification

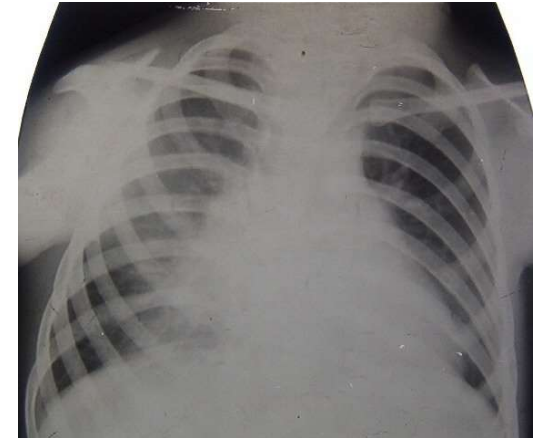
Stages of PTC



TB of Intrathoracic Lymph Nodes

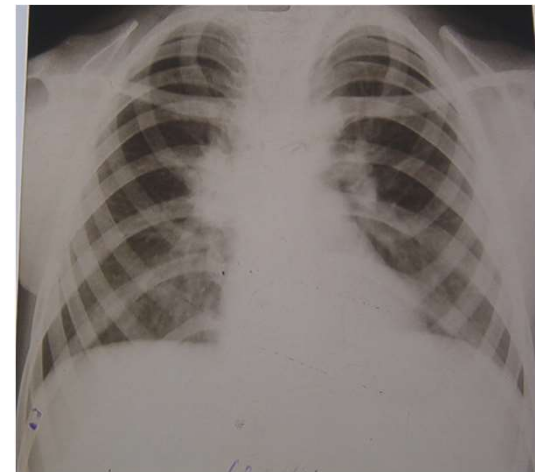
➤ Classification (according to Chest X-ray)

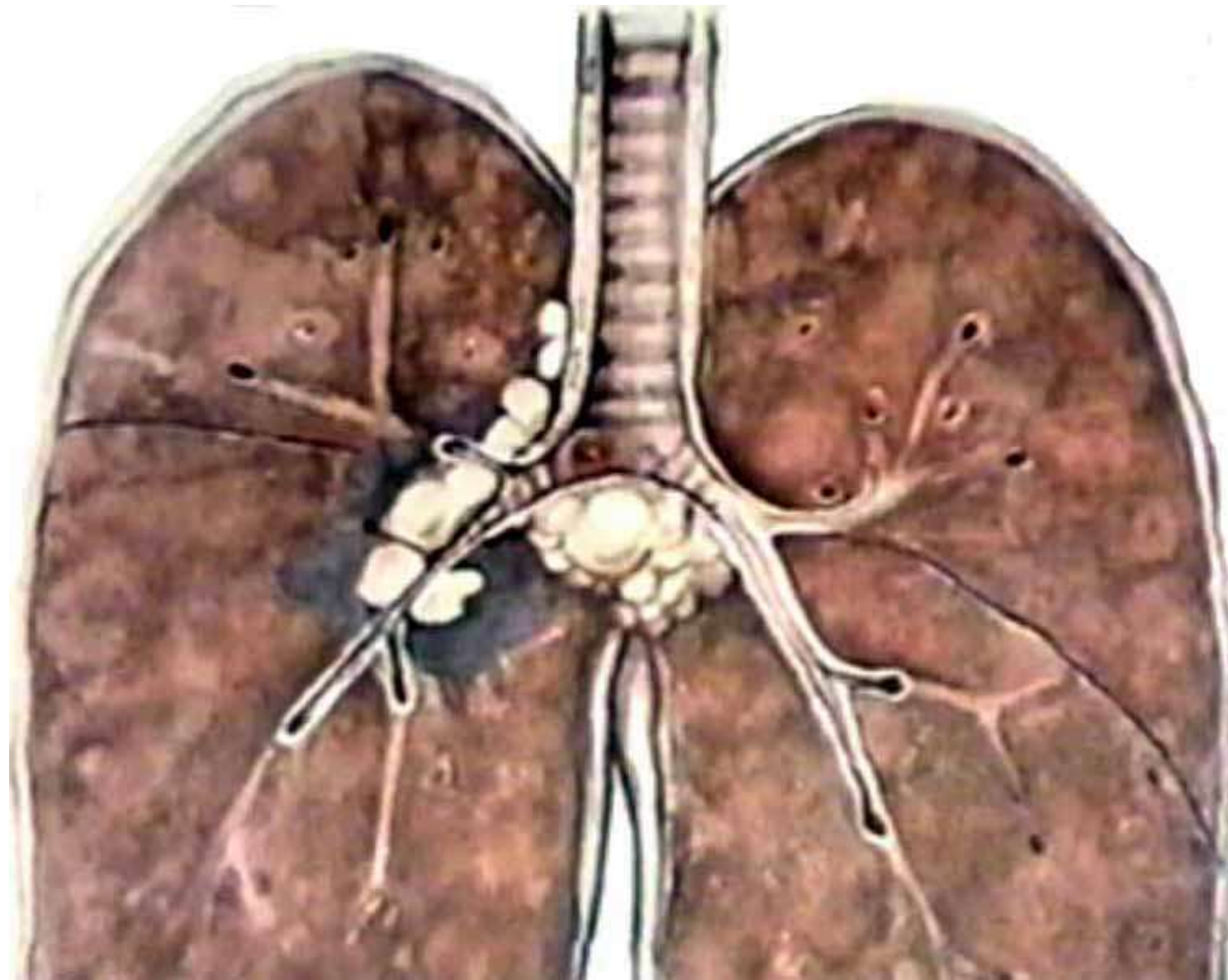
- *Tumor form (precise contour)*
- *Infiltrative form (non-precise contour)*



➤ Clinics

- *Intoxication syndrome*
- *Peripheral lymph adenitis (enlargement of lymph nodes in more than 4 groups)*
- *Paraspecific reactions*





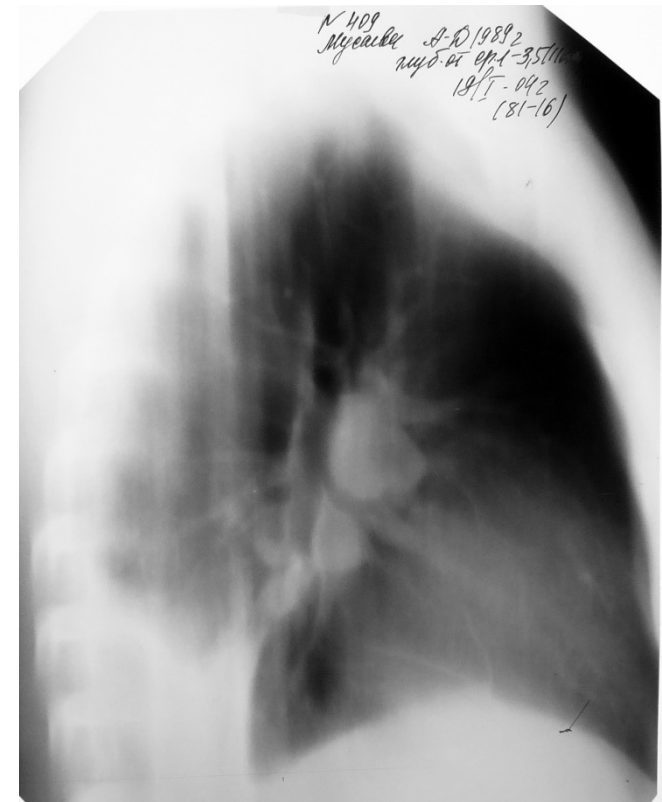
TB of Intrathoracic Lymph Nodes

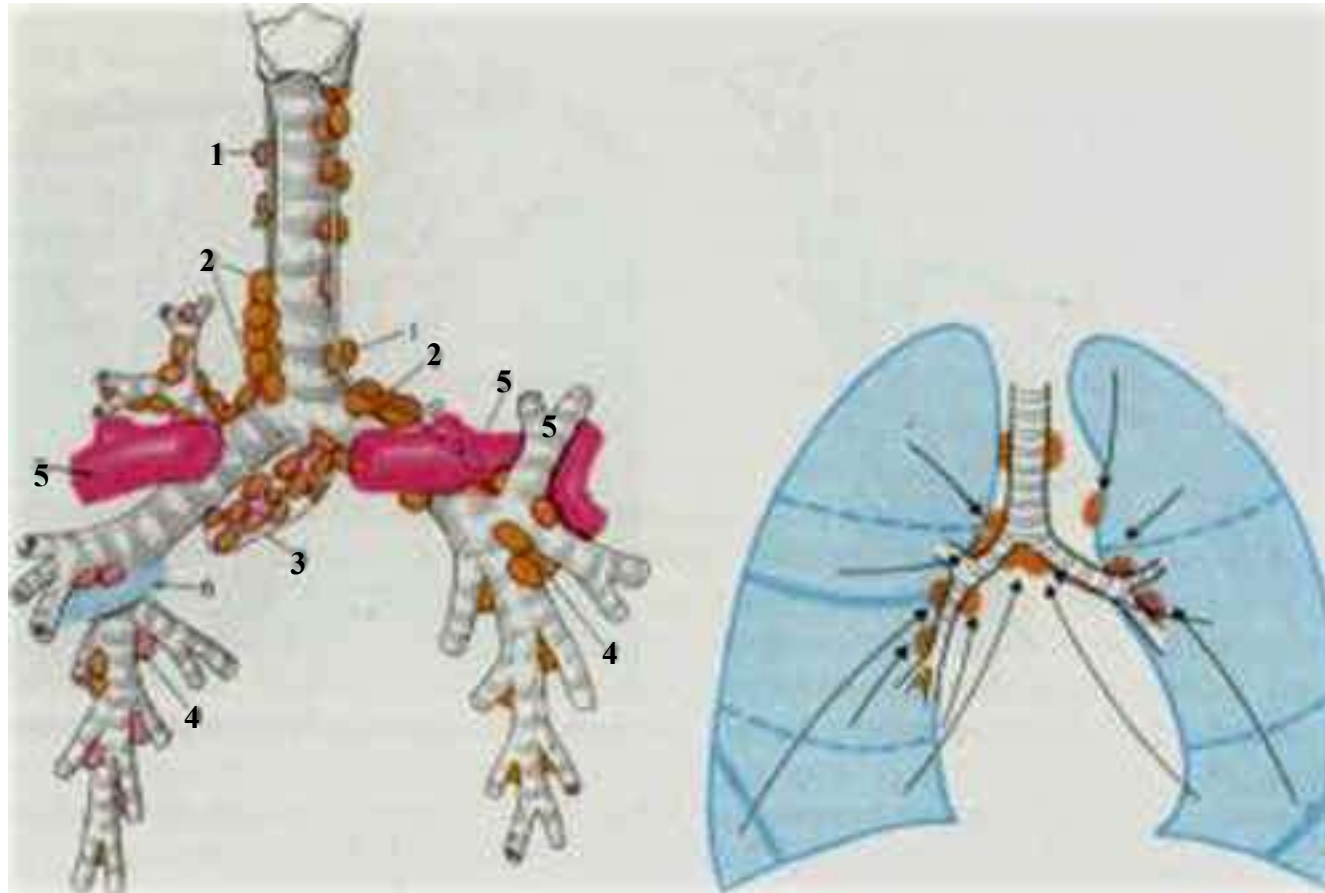
➤ Diagnostics

- *Conversion of TST*
- *Minimal changes in TBC*
- *MBT(-)*
- *Chest X-ray: syndrome of changed root of lung ; broncho-pulmonary group of lymph nodes, non-symmetric, atelectasis of S_{3,4,5}*

➤ Differential diagnostics

- *Hodgkin disease, Nonspecific lymphadenitis, Sarcoidosis ???, Lymphomas, Rubella, Infectious mononucleosis*





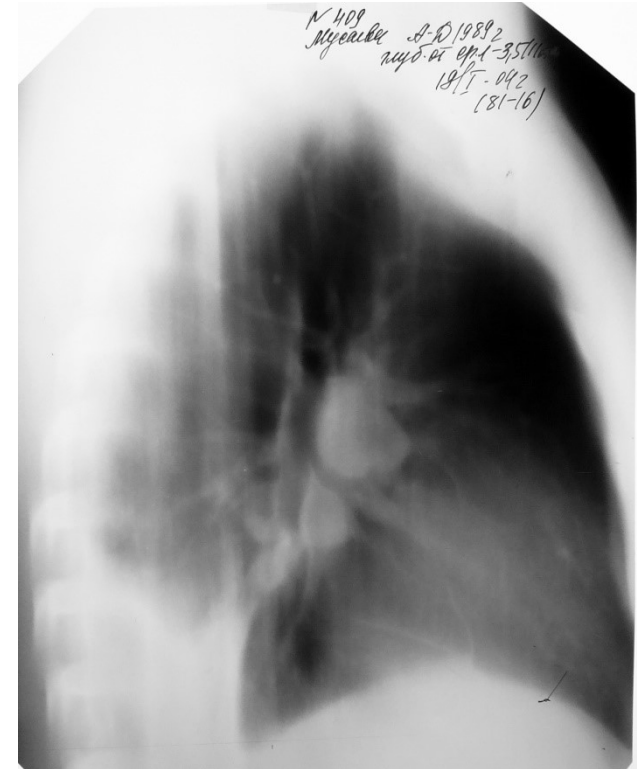
Scheme of mediastinum lymph nodes

- 1 — paratracheal lymph nodes;
- 2 — tracheo-bronchial lymph nodes;
- 3 — bifurcation lymph nodes;
- 4 — broncho-pulmonalis lymph nodes;
- 5 — branches of a.pulmonalis;
- 6 — v.pulmonalis.

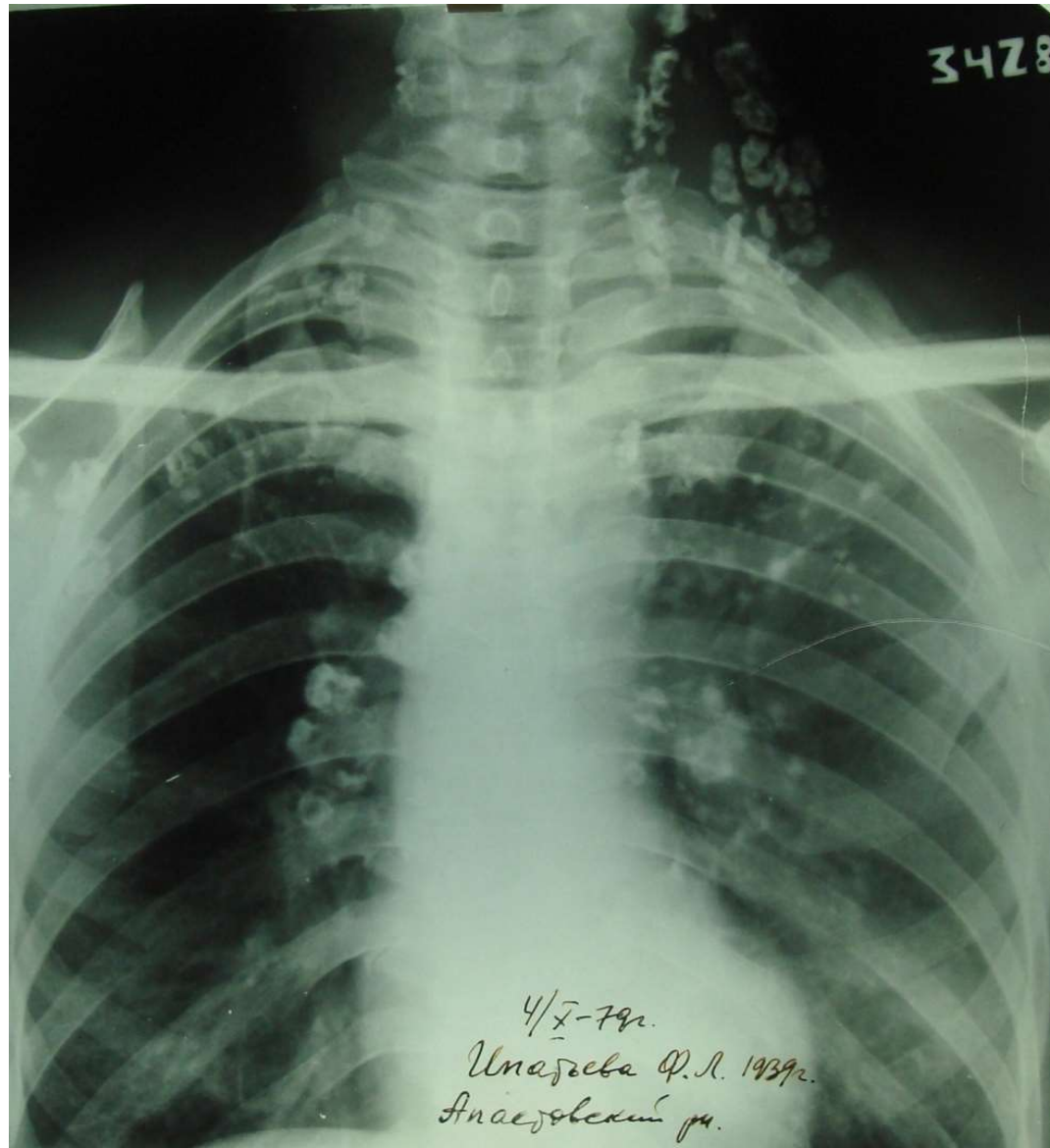
The current of the lymph in lungs
[Розенштраух Л.С. и др.1987].

Complications due Intrathoracic Lymph Nodes TB

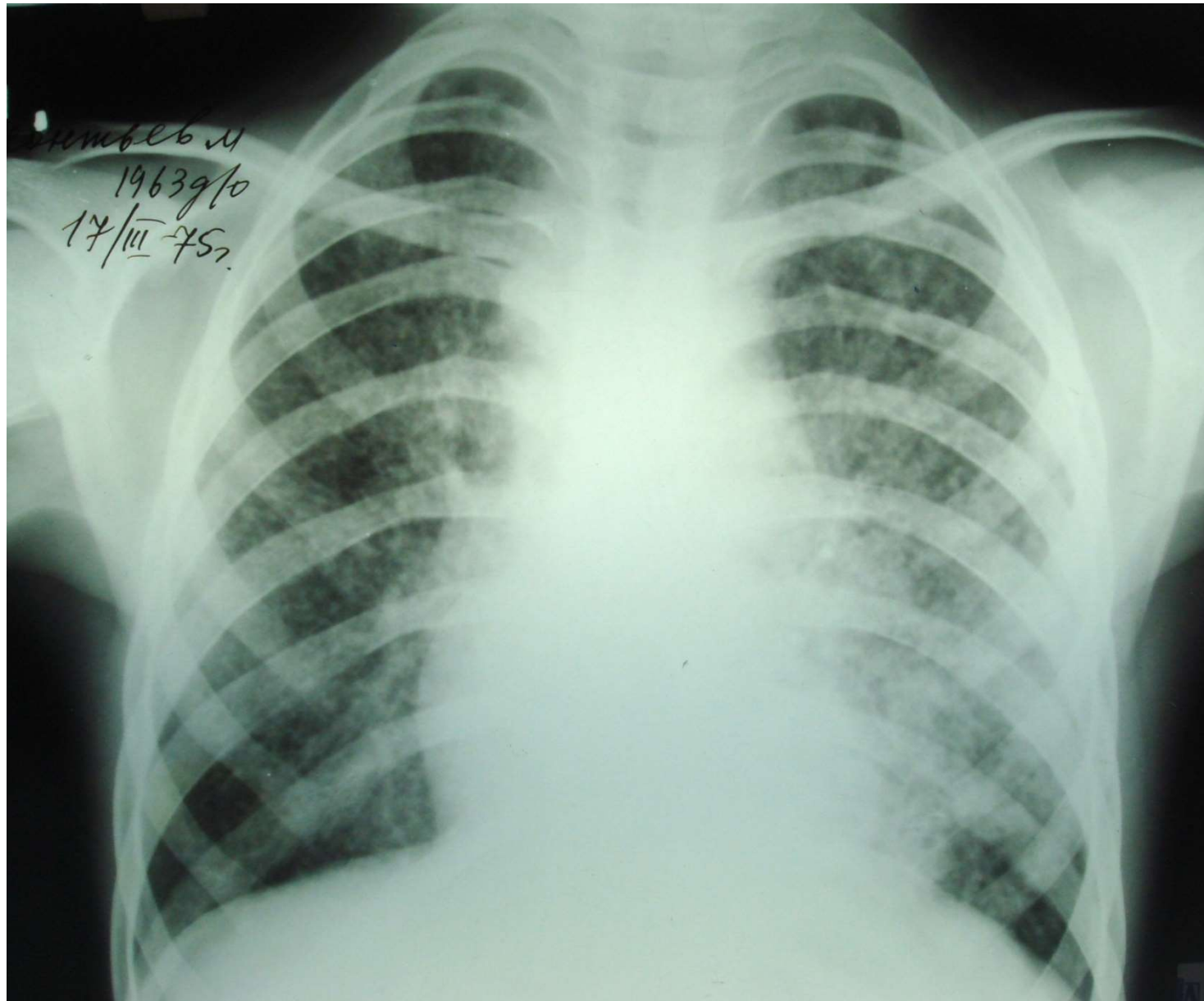
- **Compression of the bronchi**
- **Collapse of segments**
- **Atelectasis of middle lobe of right lung**
- **Fistula (caseous dilution of lymph node & walls of bronchi)**
- **Dissemination to other groups of lymph nodes**
- **Pleurisy**
- **Lymphohematogenic dissemination to lungs (apex, Symon's foci)**



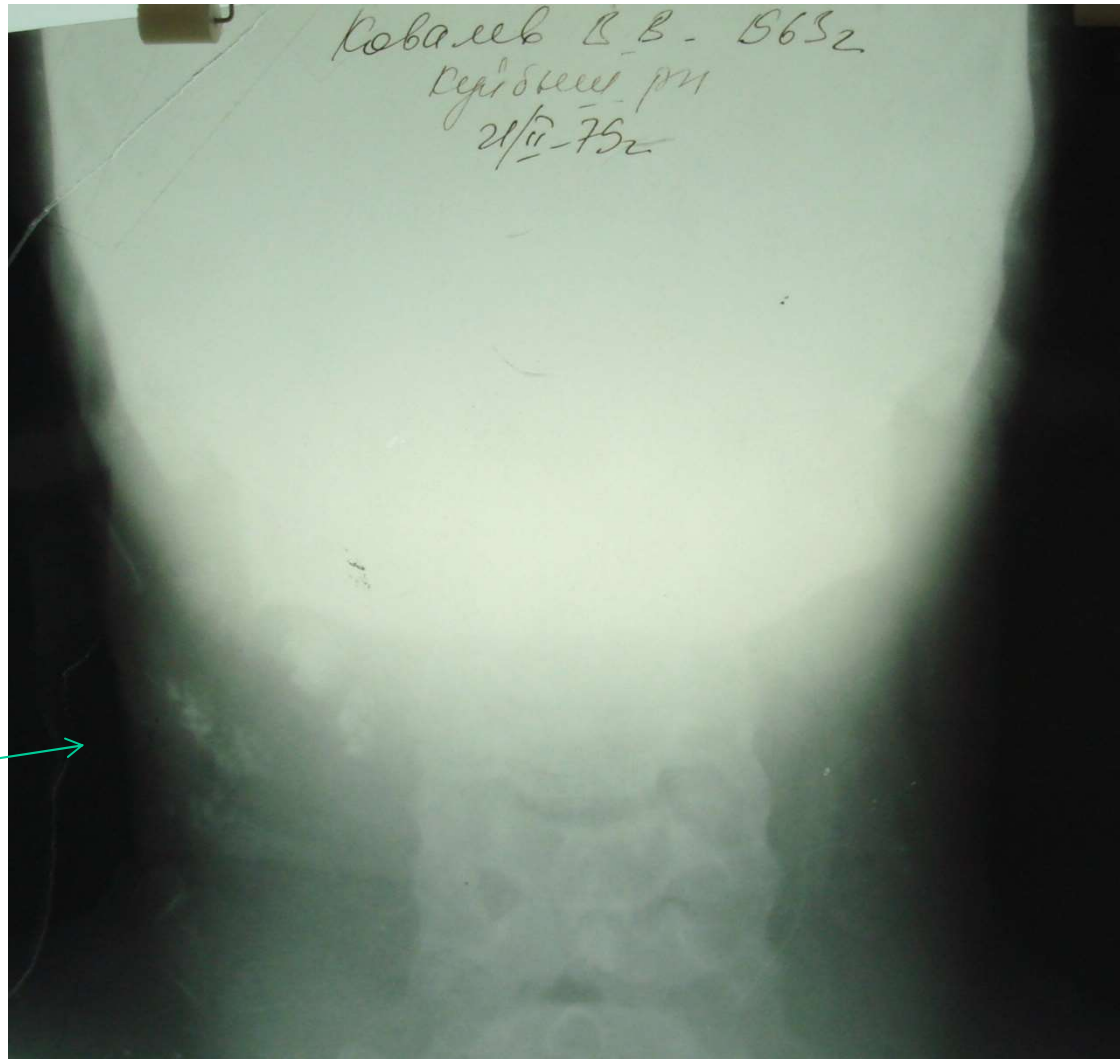
Tb of Intrathoracic lymph nodes, haematogenous dissemination



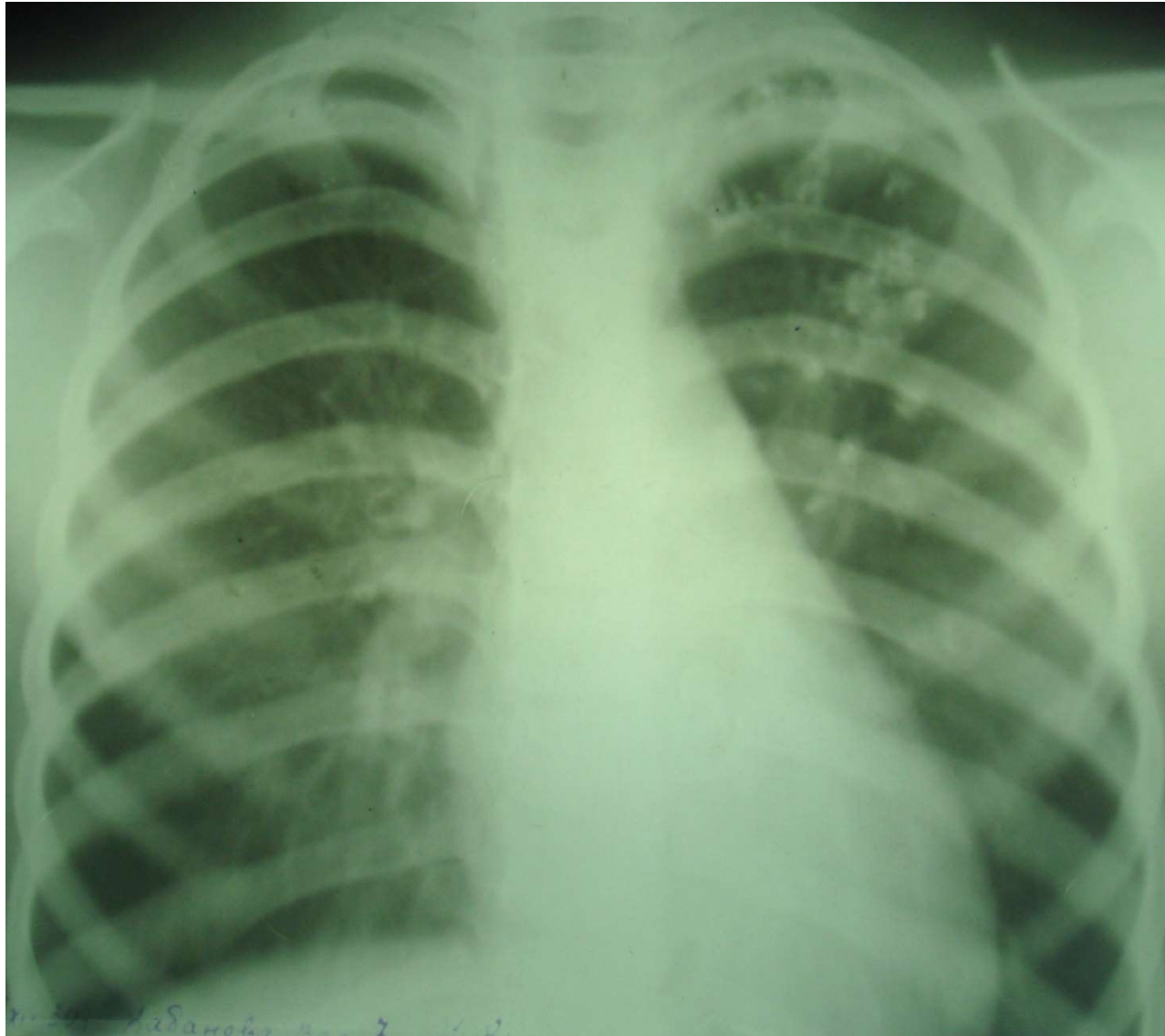
Miliary TB (primary)



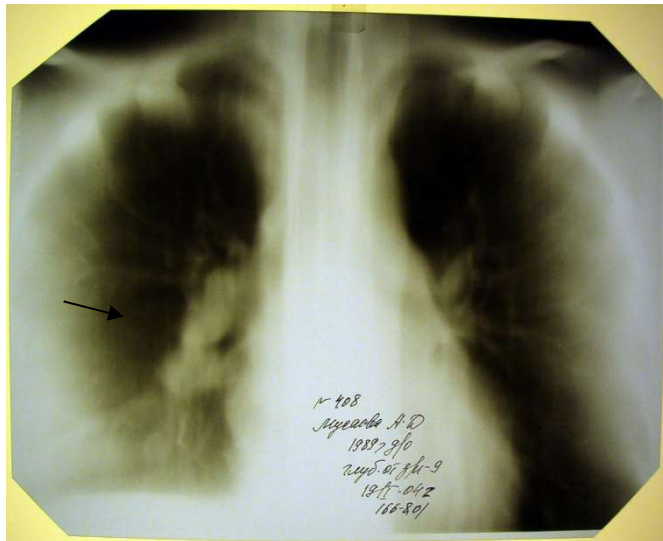
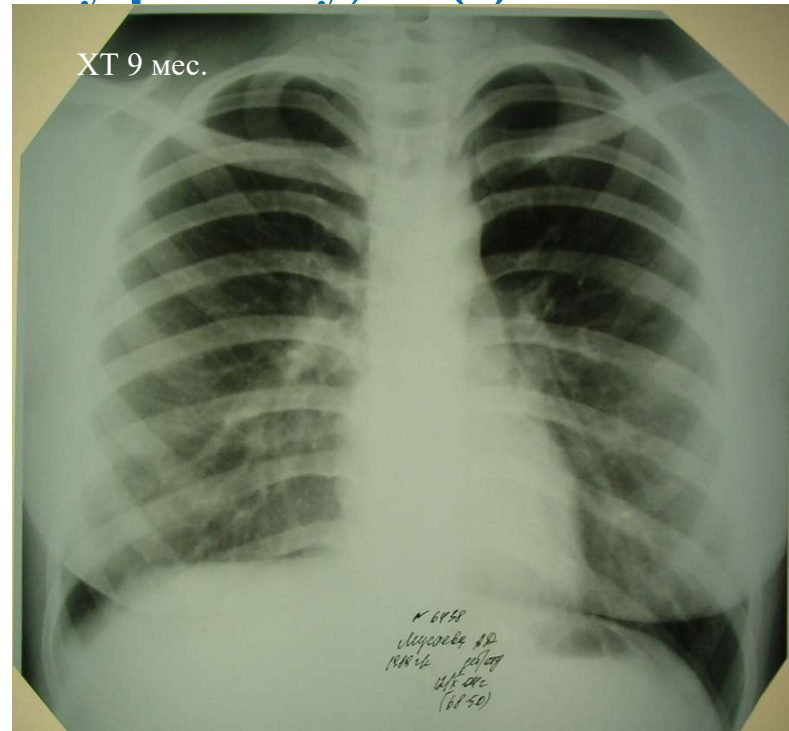
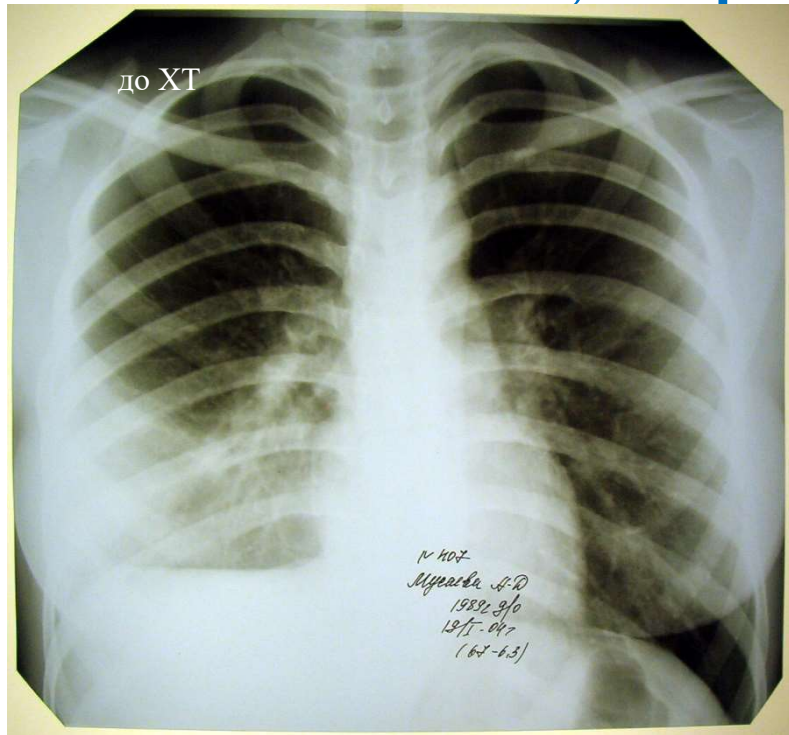
TB of peripheral lymph nodes



Tb of ITLN with haematogenous dissemination



TB ITLN, complicated by pleurisy, SS(-)





Hodgkin's disease (Lymphogranulomatosis)

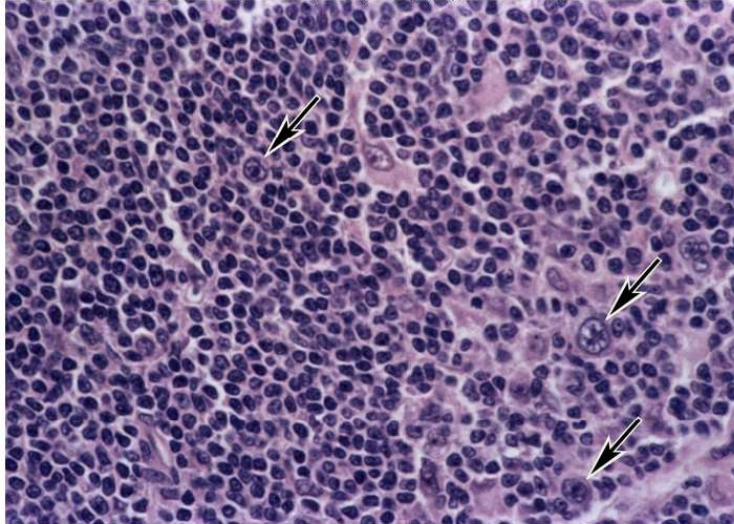
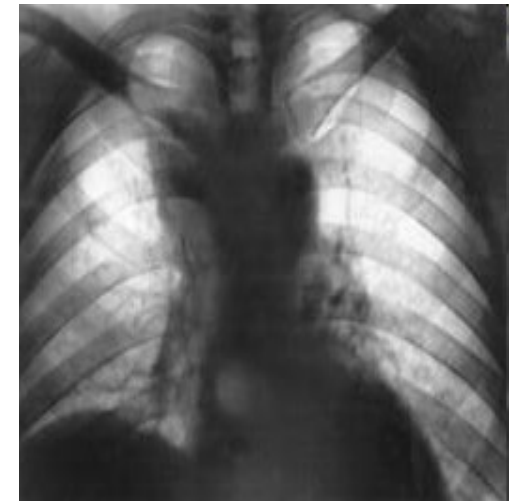
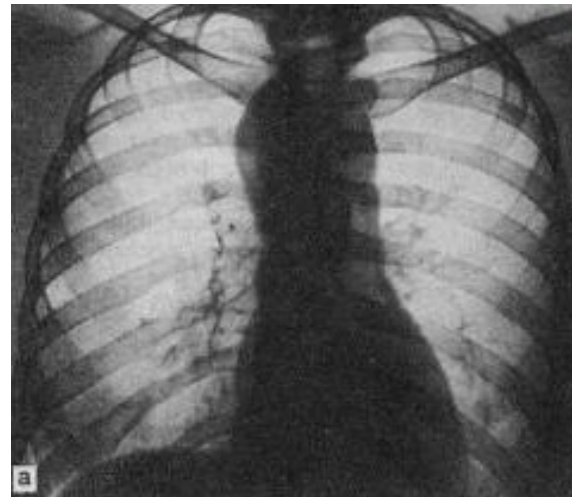
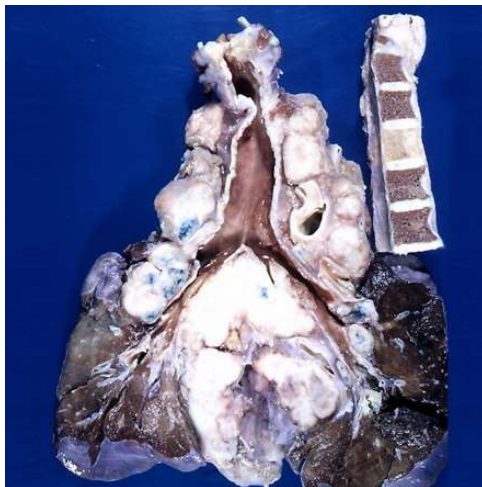
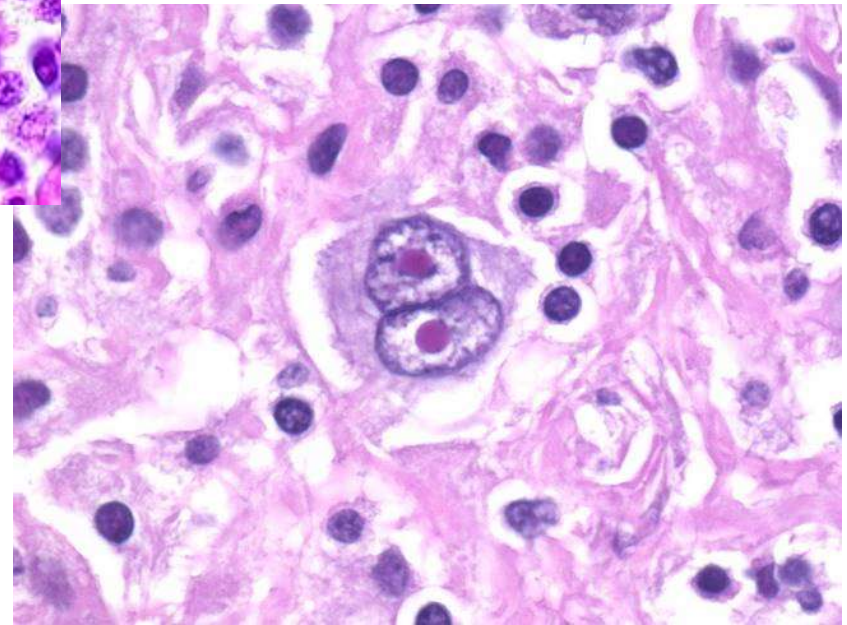
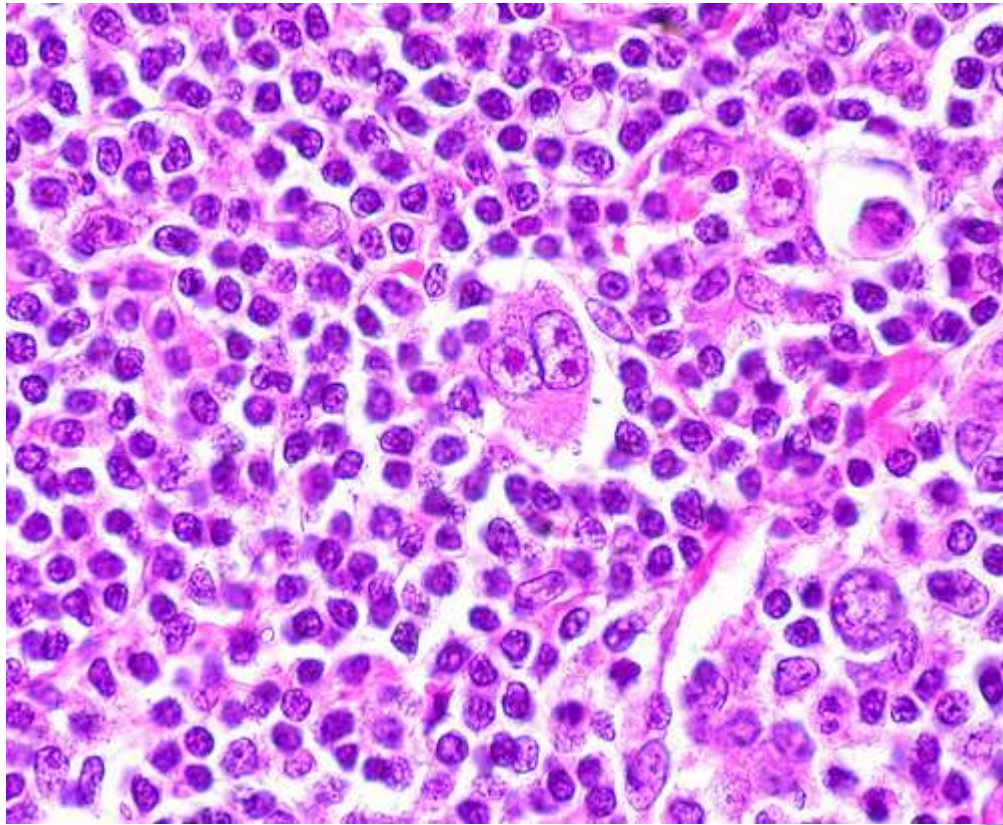


Рис. 1. Микропрепарат лимфатического узла при лимфогранулематозе: стрелками указаны клетки Березовского — Штернберга; окраска гематоксилином и эозином, $\times 250$.



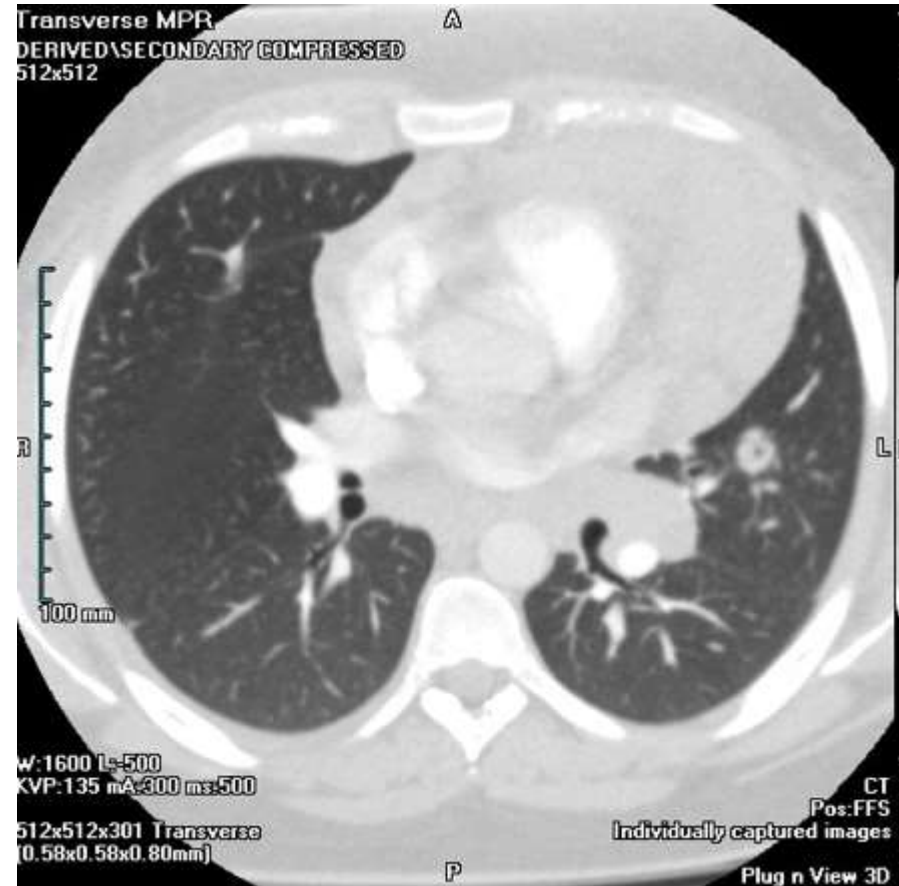


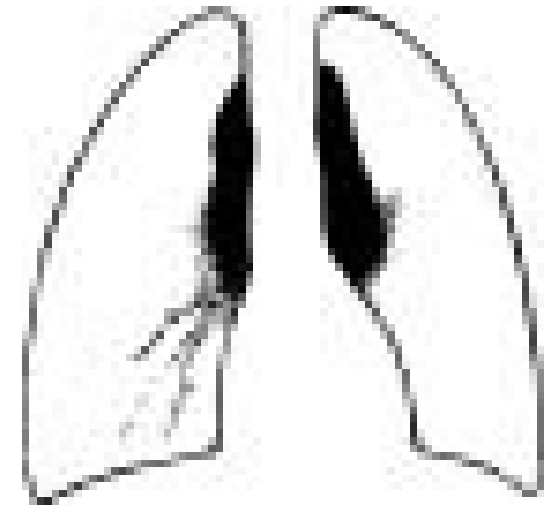
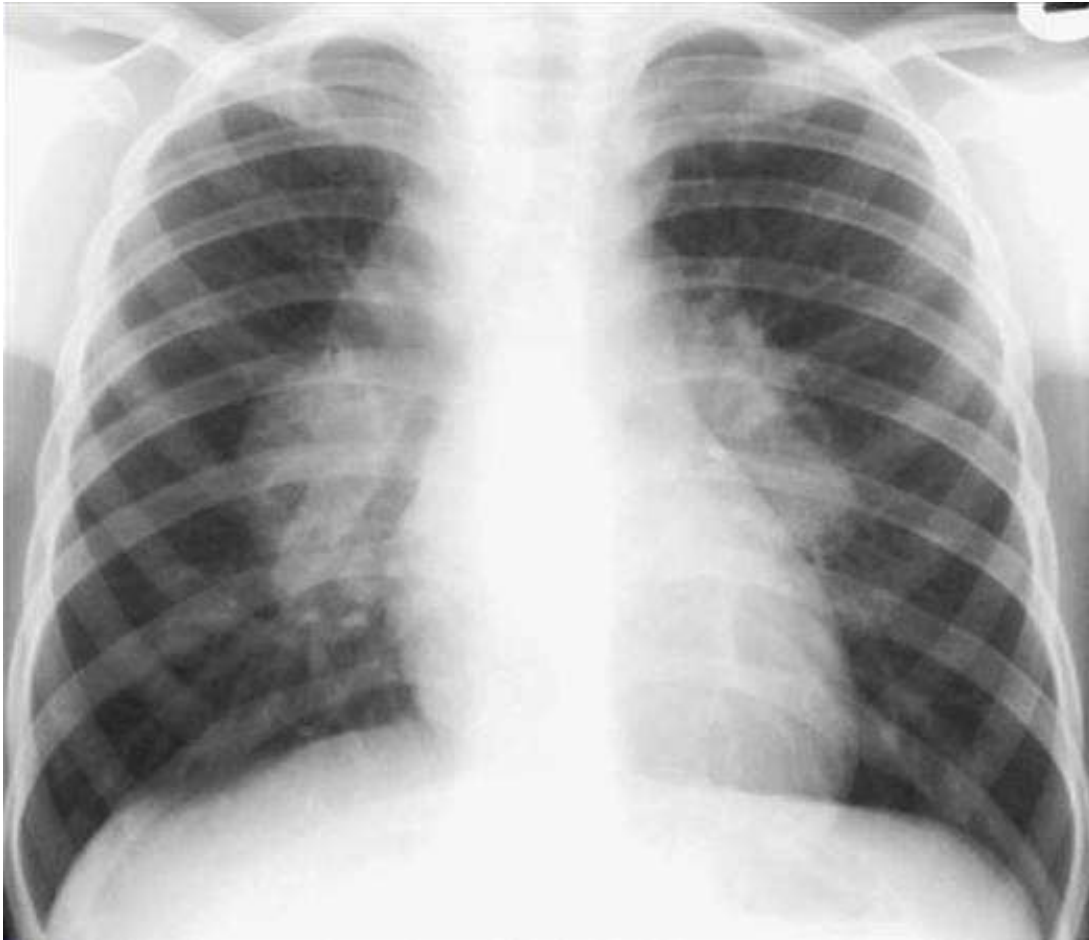




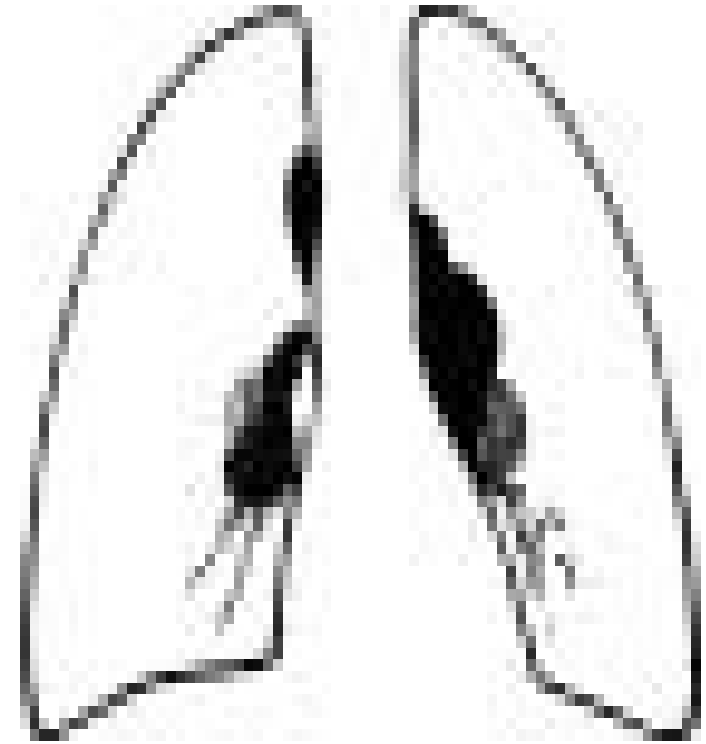


Lymphogranulomatosis





Lymphogranulomatosis.

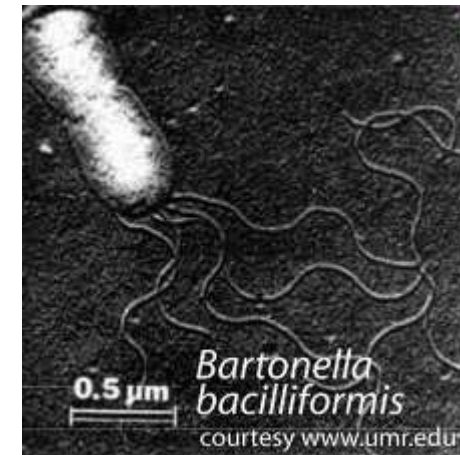


Sarcoidosis of intrathoracic lymphatic nodes.

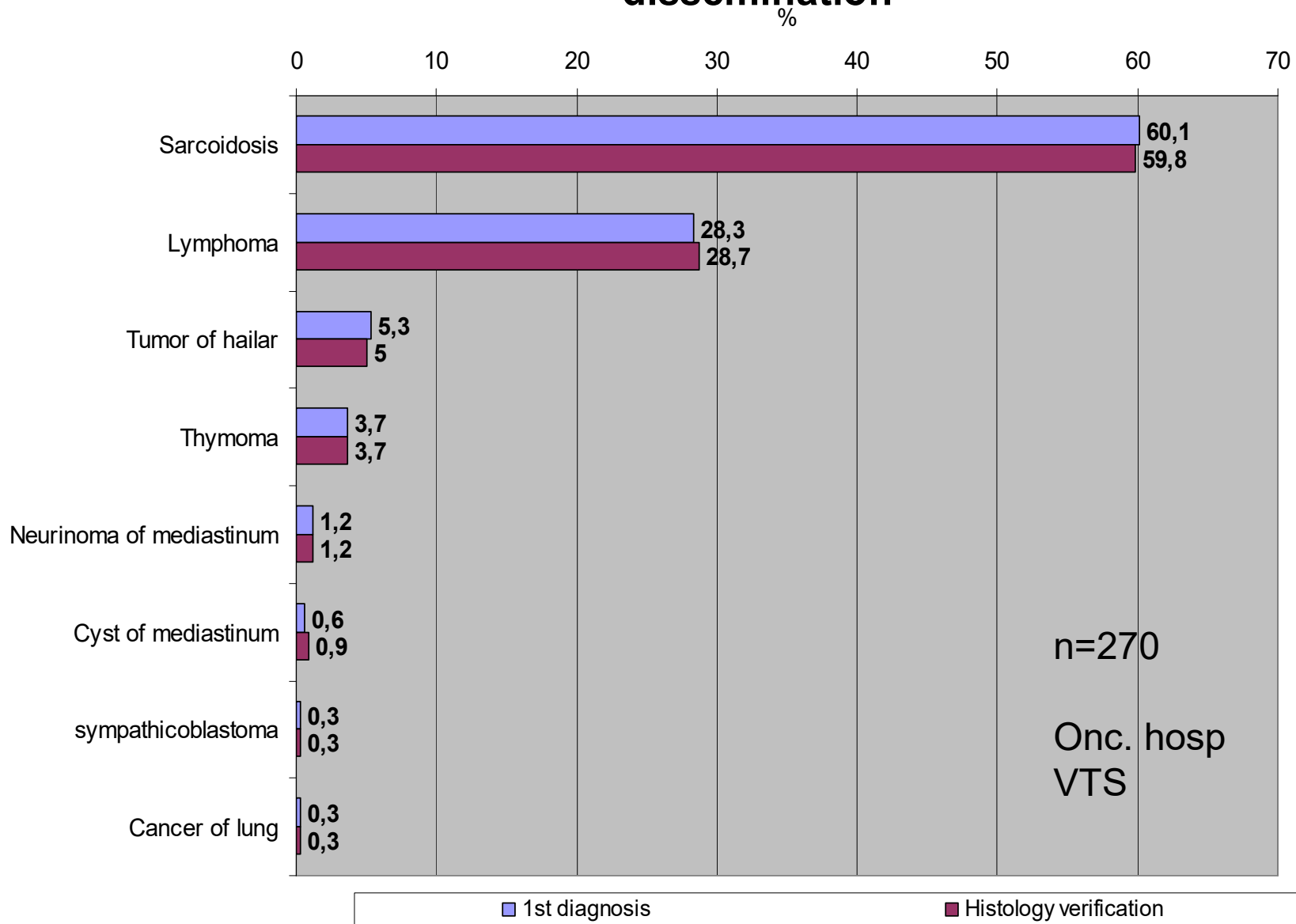


Cat scratch disease (CSD)

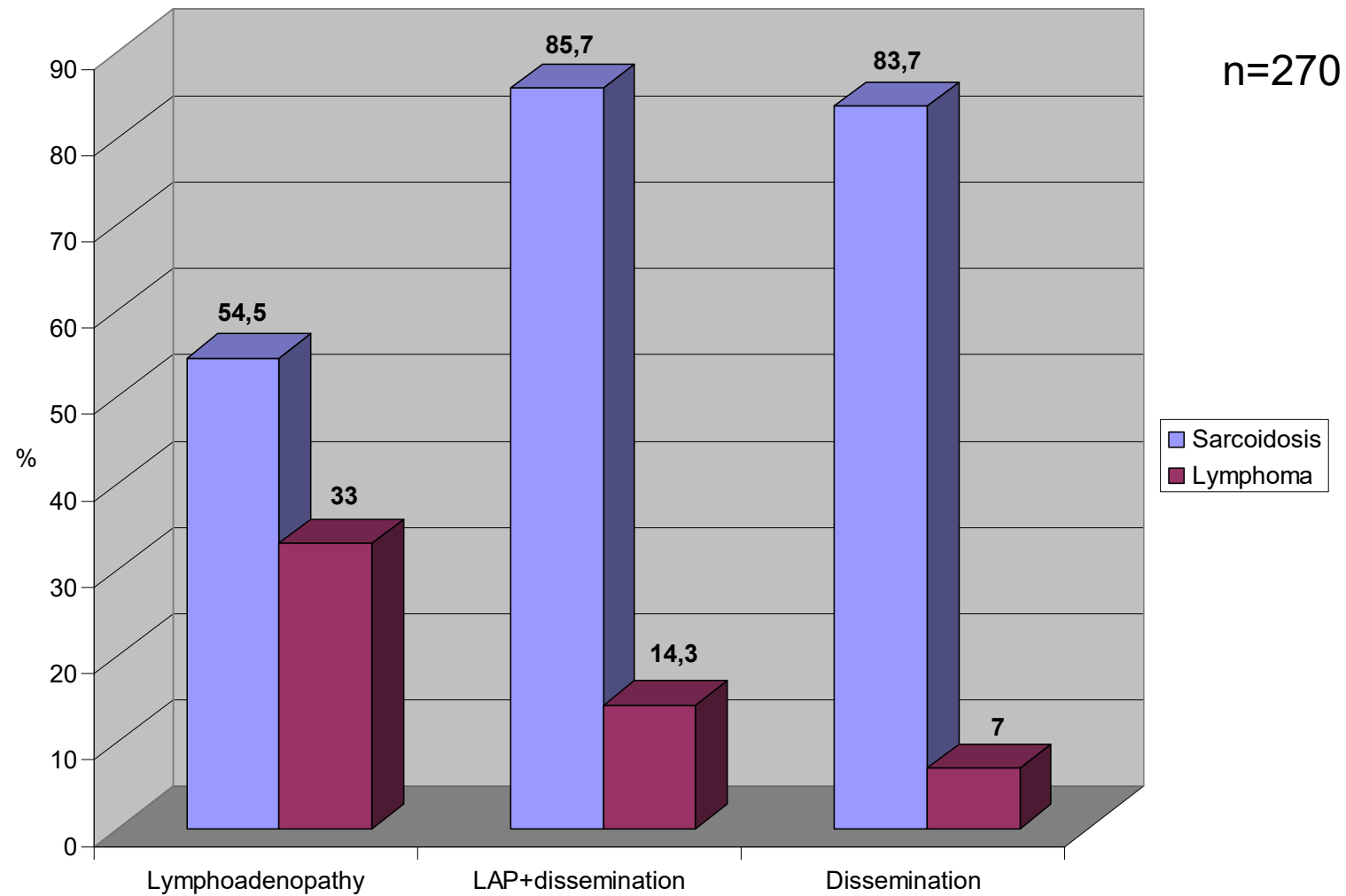
(Cat scratch fever, МКБ-10 A28.1)



Differential diagnosis of lymphadenopathy & dissemination

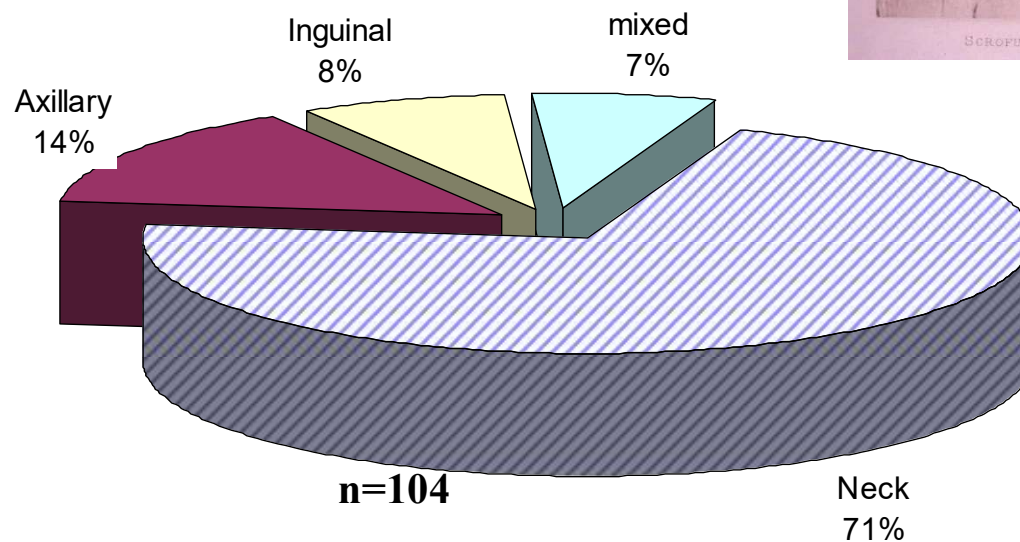


Sarcoidosis & Mediastinal lymphoma in different CXR syndroms





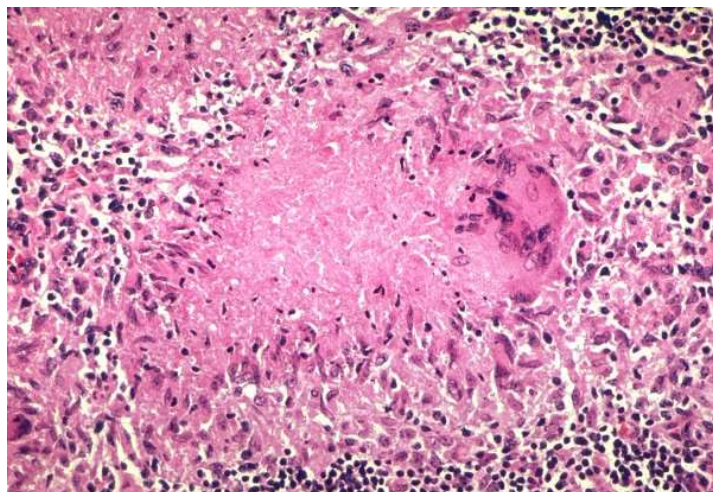
TB of Peripheral Lymph Nodes (localization)





TB of Peripheral Lymph Nodes (localization)

method	Sensitivity	Specificity
Histological	94,4%	100%
PCR of lymph node	84,0%	82,4%
Microscopy of lymph node	8,3%	100%
Culture of lymph node	15%	100%



Внелегочный туберкулез. Руководство для врачей
(под рук. А.В.Васильева, 2000)