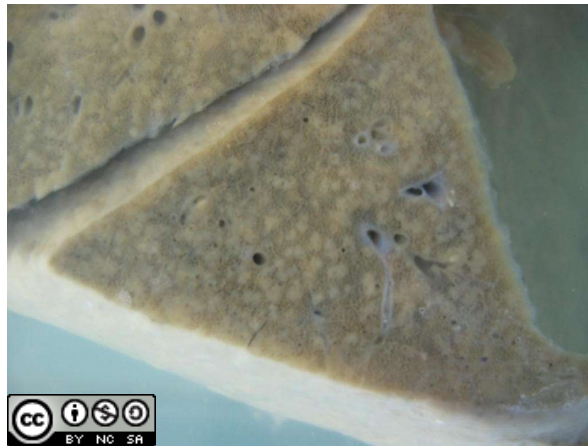


# Miliary tuberculosis

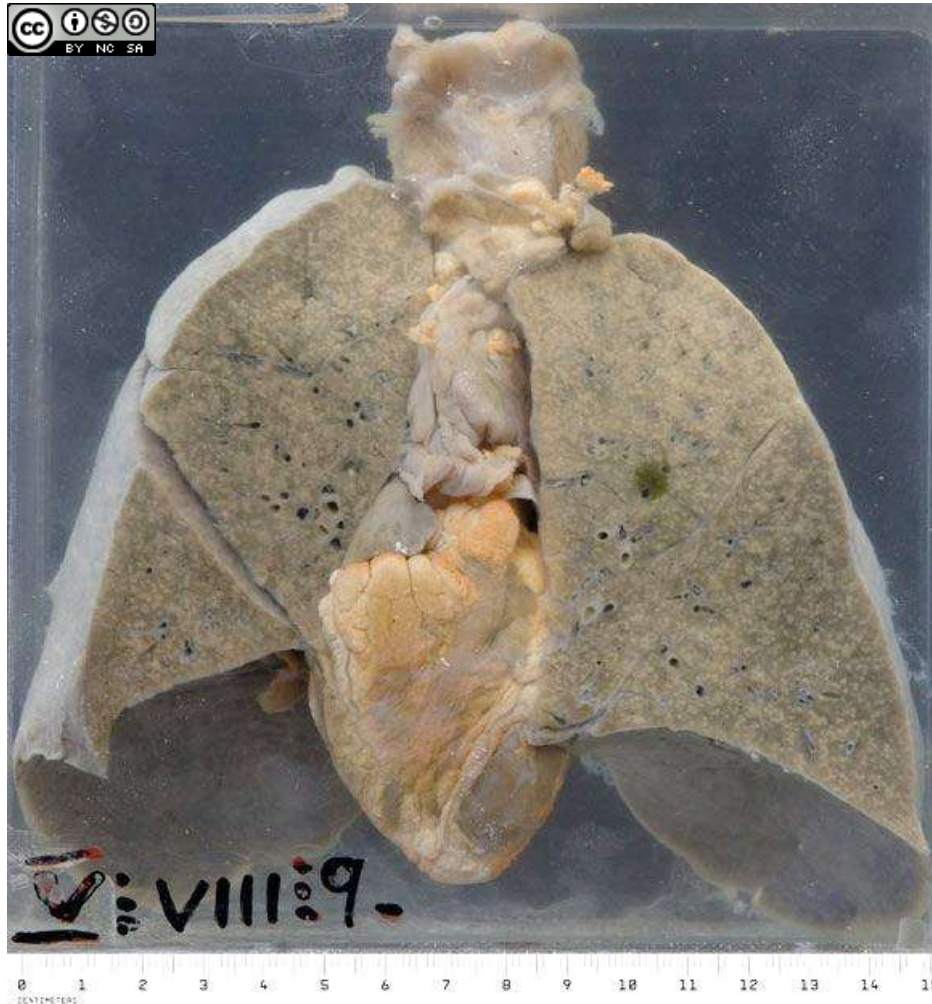


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Case 3 2009

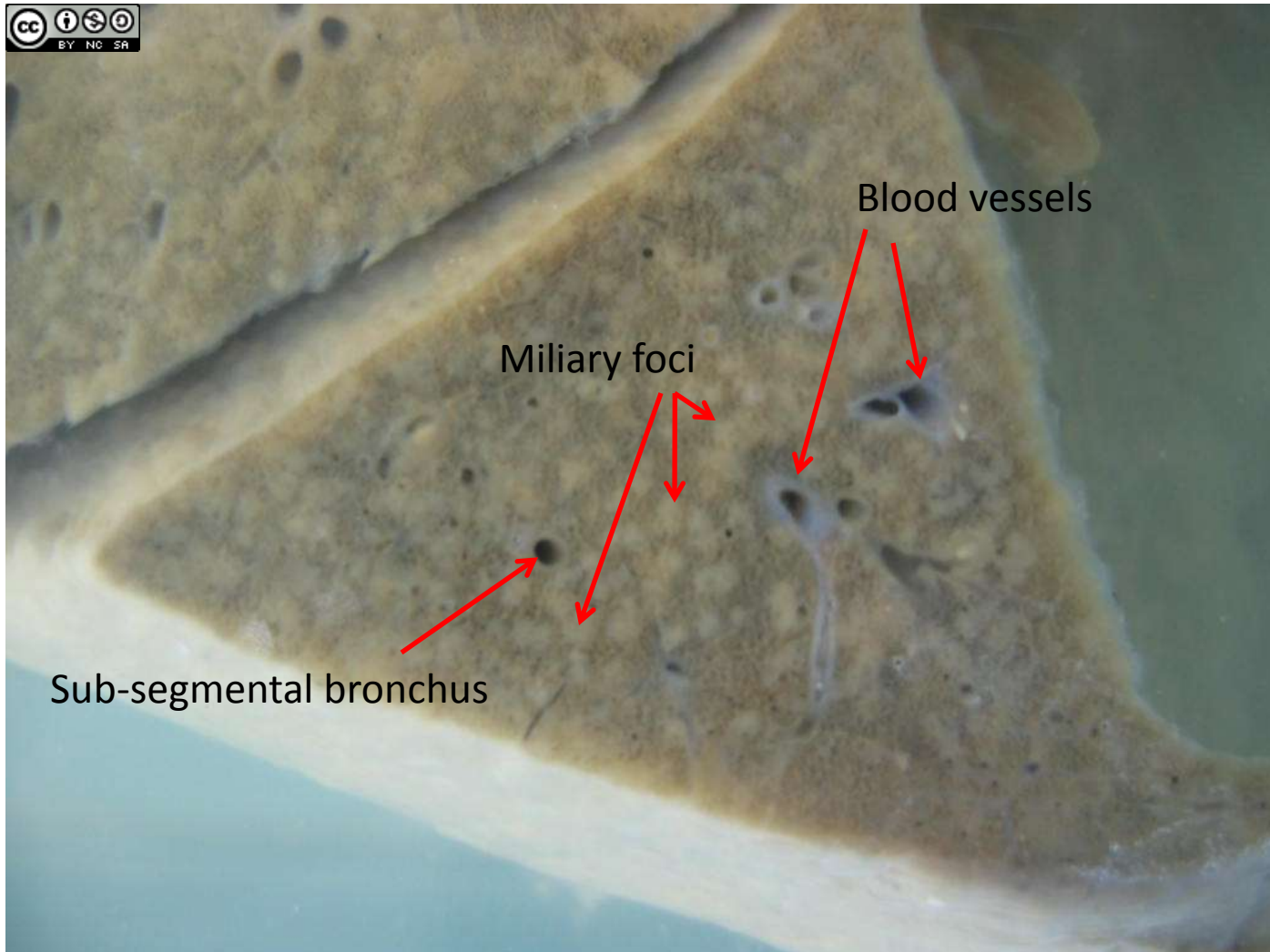
Ref. V:viii:9





- The specimen is the heart and lungs of a child.
- Numerous pale miliary foci, all  $\leq 1\text{mm}$  in diameter, are uniformly distributed throughout both lungs





# Chest x-ray in miliary tuberculosis

- <http://www.meddean.luc.edu/lumen/MedEd/medicine/pulmonar/cxr/atlas/miliary1.htm>



Millet seeds.

- The patient was 6 years old and had just started treatment for spinal tuberculosis.
- Miliary tuberculosis is usually a complication of primary tuberculosis in children, but it can occur as a late (often terminal) consequence of chronic untreated organ tb.



# Pathogenesis

- Whether in primary or secondary tuberculosis, miliary tuberculosis occurs when organisms draining through lymphatics enter venous blood and there is consequent dissemination of bacteria via the blood stream.
- This specimen shows **miliary pulmonary disease**, the result of diffuse spread to the lungs via recirculation through the pulmonary artery.
- The child may well have had **systemic miliary disease** (organisms disseminated to the left side of the heart and systemic arterial system) as well.
- The two forms of miliary spread can occur independently or together. It is therefore usually a generalised condition, with many organs affected. Death is commonly due to tuberculous meningitis.





## ANOTHER EXAMPLE

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- The liver, lungs and spleen from a 3 month old child who died of extensive miliary tuberculosis.
- The miliary foci are a little larger than in the first example, but they seldom expand beyond a few mm since death intervenes before this can occur.





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