

Primary pulmonary tuberculosis



Digital Pathology Collection

Case 2 2009

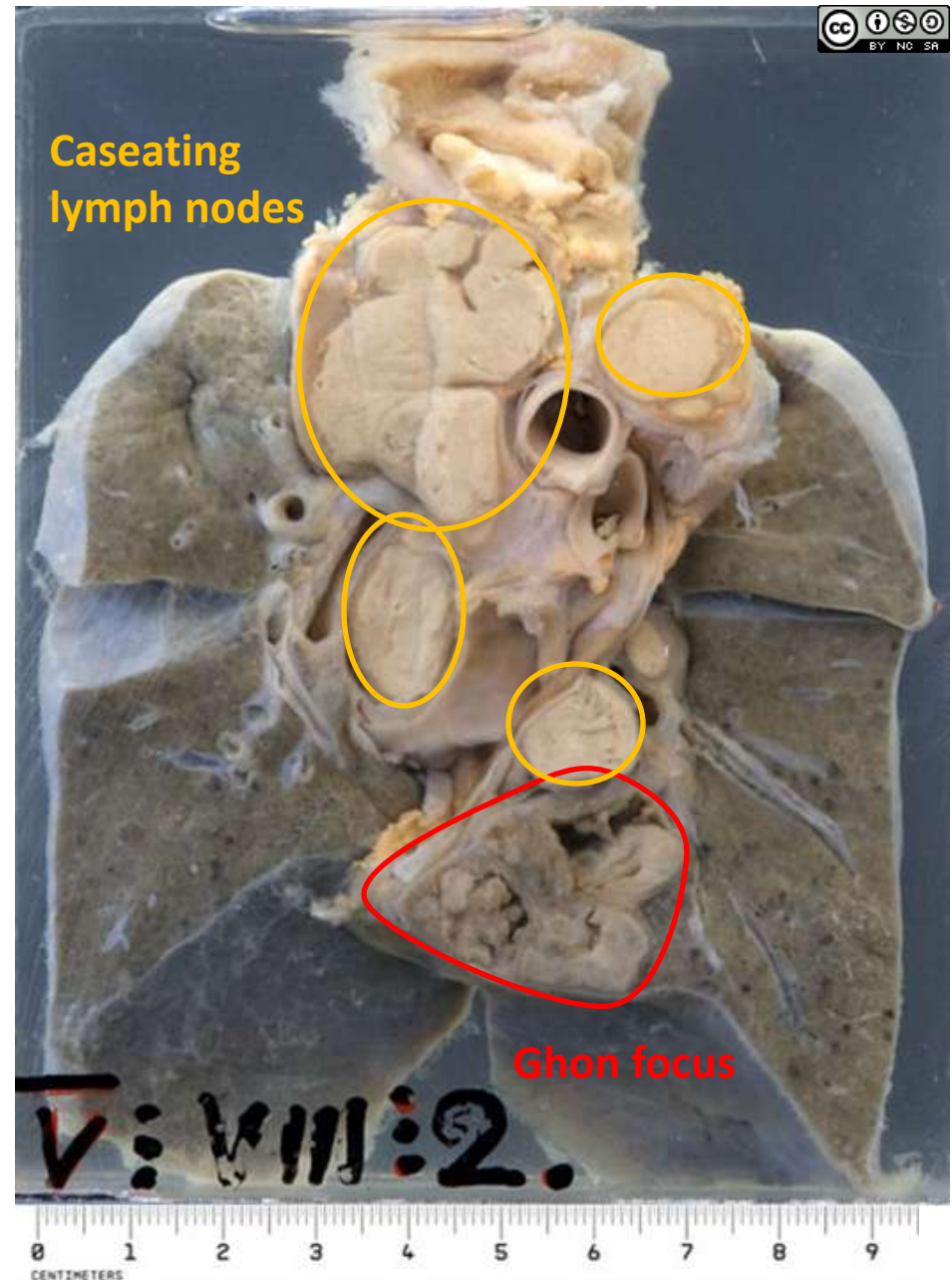
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- There is no clinical history recorded.
- The specimen consists of the hilum and lungs of an infant.



- In the lower lobe of the left lung on its medial aspect there is a caseous focus, the Ghon focus.
- There is prominent caseation of the draining tracheobronchial and mediastinal nodes.
- The Ghon focus in the lung together with the involved hilar nodes form the 'primary complex' or Ghon complex.



- The Ghon focus typically occurs in lower part of an upper lobe or upper part of a lower lobe, and is usually subpleural.
- The subpleural lesion quite often causes a small pleural effusion.
- The immune response to TB infection is primarily cell mediated and comes at the cost of “hypersensitivity” to mycobacterial antigens which causes caseating granulomas and ultimately tissue destruction.



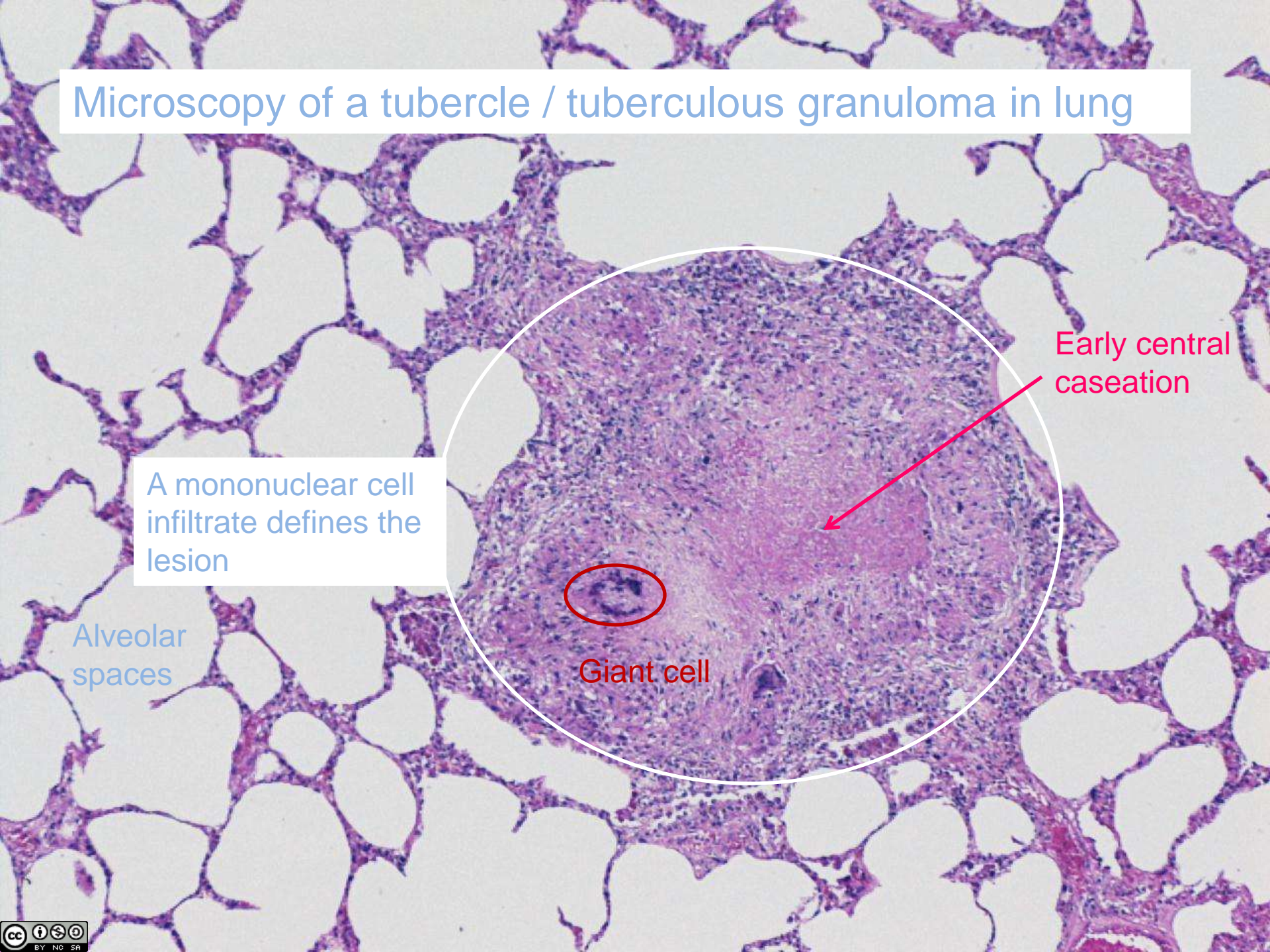
Microscopy of a tubercle / tuberculous granuloma in lung

A mononuclear cell infiltrate defines the lesion

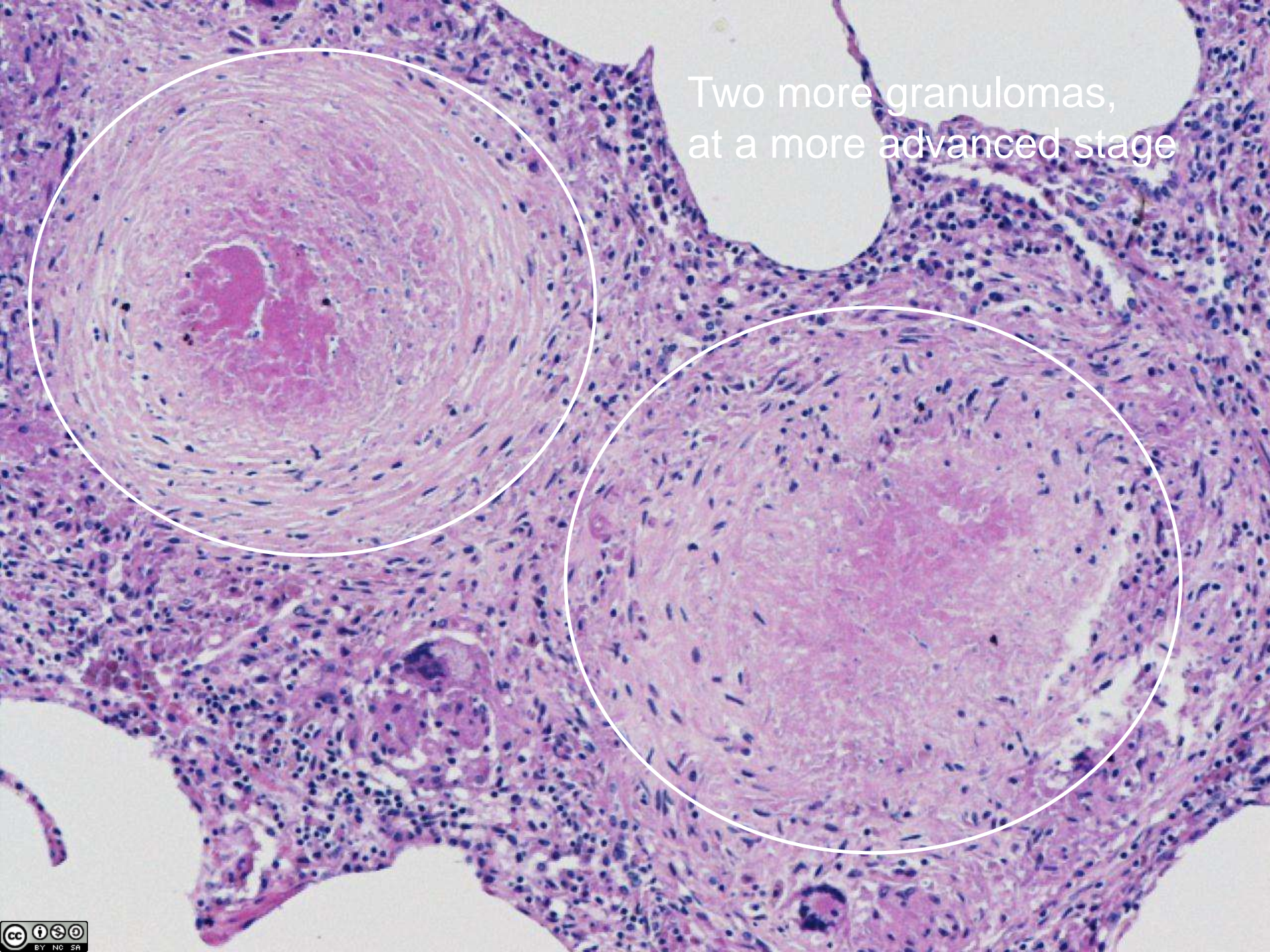
Alveolar spaces

Early central caseation

Giant cell



Two more granulomas,
at a more advanced stage



Further developments

- Most cases of primary tuberculosis heal at this stage, leaving a small fibrocalcific scar in the lung, sometimes visible on x-ray. Viable organisms may remain dormant in this lesion for decades.
- In children (< 2 years) the primary complex may not be contained. Rupture into a bronchus can cause tuberculous bronchopneumonia or haematogenous dissemination can cause miliary tuberculosis.
- In some persons (usually immunocompromised) primary tuberculosis may immediately progress as “progressive primary tuberculosis”; in the lungs this may be radiologically indistinguishable from reactivation tuberculosis .





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