

# Klebsiella pneumonia



Digital Pathology Collection

Case 1 2009

Ref. IV:iv:11

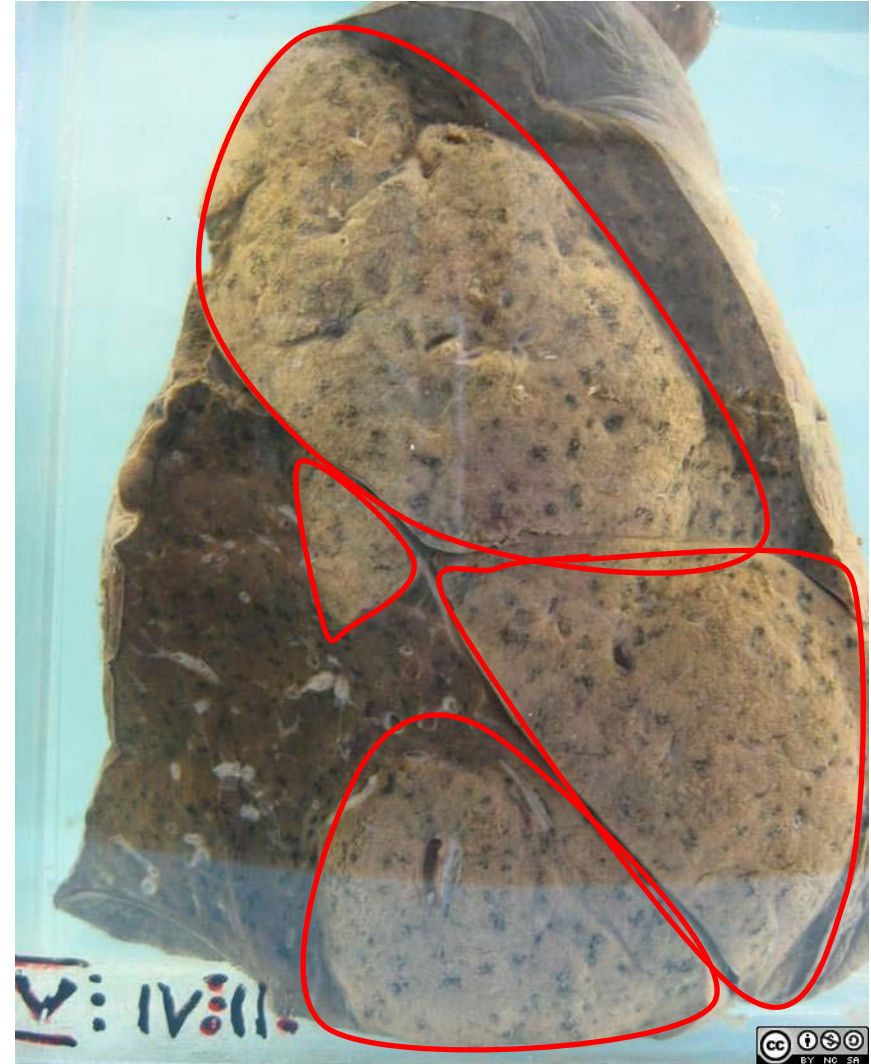


- The patient was a 27 year old man who died in 1948.
- Three days before admission he had sudden onset of pleuritic pain on the right side of his chest.
- He also had a cough with blood-stained sputum.
- On examination he was flushed and pyrexial. His respiratory rate was increased and there were signs of marked consolidation of both the left and right lungs.
- He died the day after admission despite large doses of penicillin.



- The specimen is his left lung which has been partially sectioned to show the grey-white areas of pneumonic consolidation.
  - These areas are not typically lobar (affecting the whole of a lobe) but rather lobular or segmental, that is affecting parts of the lobes.
  - This is said to be typical of *Klebsiella pneumoniae*.
  - Another feature is that the affected areas appear to be swollen or bulging, which can give rise to the bulging fissure sign on x-ray. See [http://www.radswiki.net/main/index.php?title=Bulging\\_fissure\\_sign](http://www.radswiki.net/main/index.php?title=Bulging_fissure_sign)

### Segmental pneumonic consolidation





- There is a milky-looking fibrinous exudate on the pleural surface of the lung, seen here on the hilar aspect.



- No pneumonia can be accurately identified without microbiological investigation.



- A gram negative bacillus with cultural features of *Klebsiella pneumoniae* was isolated from both lungs.
- *K. pneumoniae* produces large, mucoid colonies after 24 hours of aerobic incubation. It is a lactose fermenter so on MacConkey agar the colonies are pink, as shown here.



- The mucinous quality of Klebsiella would be noted by the pathologist at post mortem; the cut surface of the lungs appears mucinous and the knife used for sectioning would be sticky with mucous.



# Some comments

- *Klebsiella pneumoniae* and Klebsiella pneumonia are sometimes still called Friedländer's bacillus and Friedländer's pneumonia respectively, after the German physician Carl Friedländer, who described them in the 19<sup>th</sup> century.
- Klebsiella pneumonia typically occurs in men over 50 years with an underlying chronic condition such as alcoholism or diabetes.
- It is an aggressive pneumonia and has a tendency to progress to abscess formation.
- When this patient fell ill in 1948 antibiotic options were limited. Today the first line antibiotic for community acquired Klebsiella pneumonia is coamoxiclav or a 3rd generation cephalosporin (cefotaxime or ceftriaxone).







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