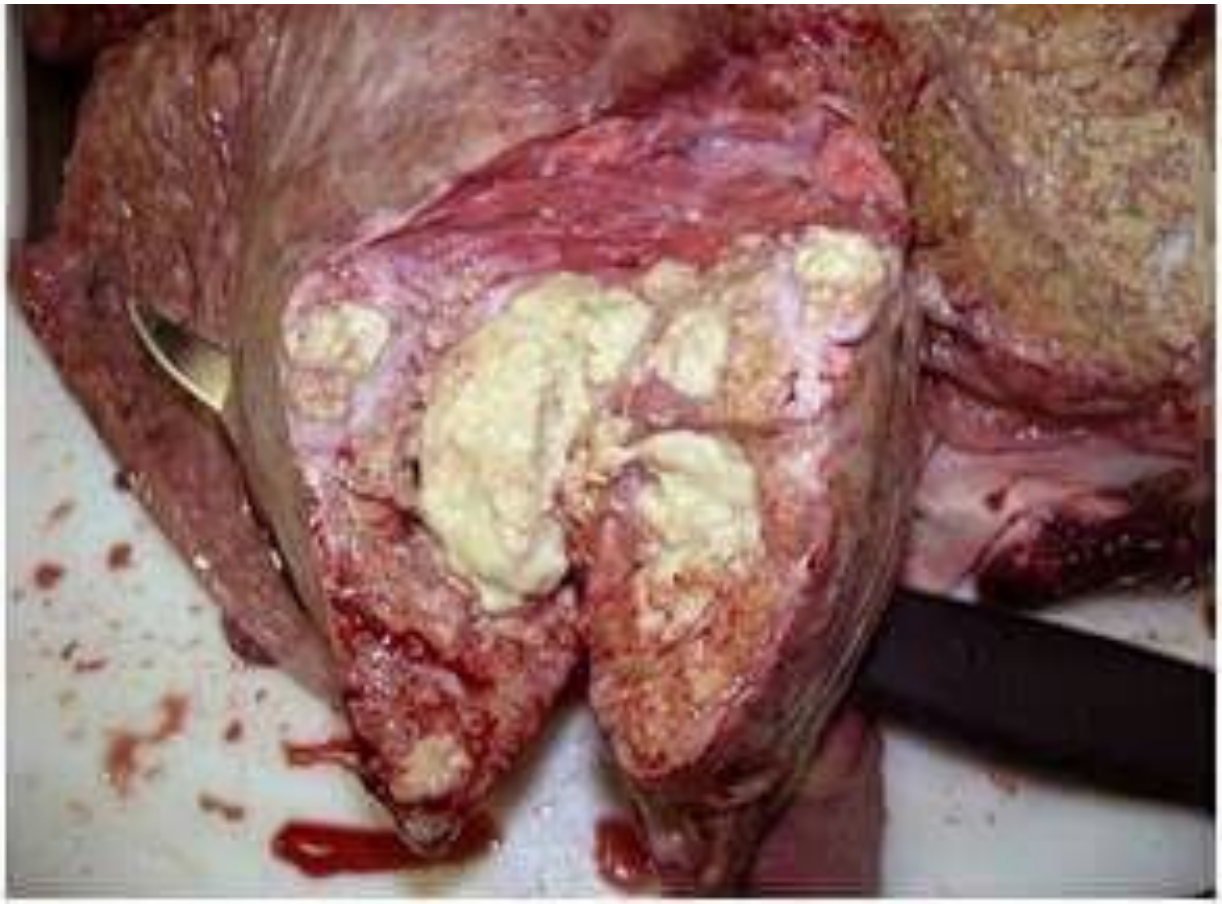
1- **Organ:** Lung

Lesion: Multiple areas of caseous necrosis undergo liquefaction; the lesion replaced the lung parenchyma.

Etiology: *Mycobacterium bovis*

Diagnosis: T.B.



10-Organ: L.N

Lesion: The caseous necrotic center undergo mineralization which appeared blue in color and surrounded by Langhans-type giant cell, epithelioid cells, lymphocytes, and fibrosis H&E stain. (Magnification: 5×)

Etiology: *Mycobacterium bovis.*

Diagnosis: T.B.

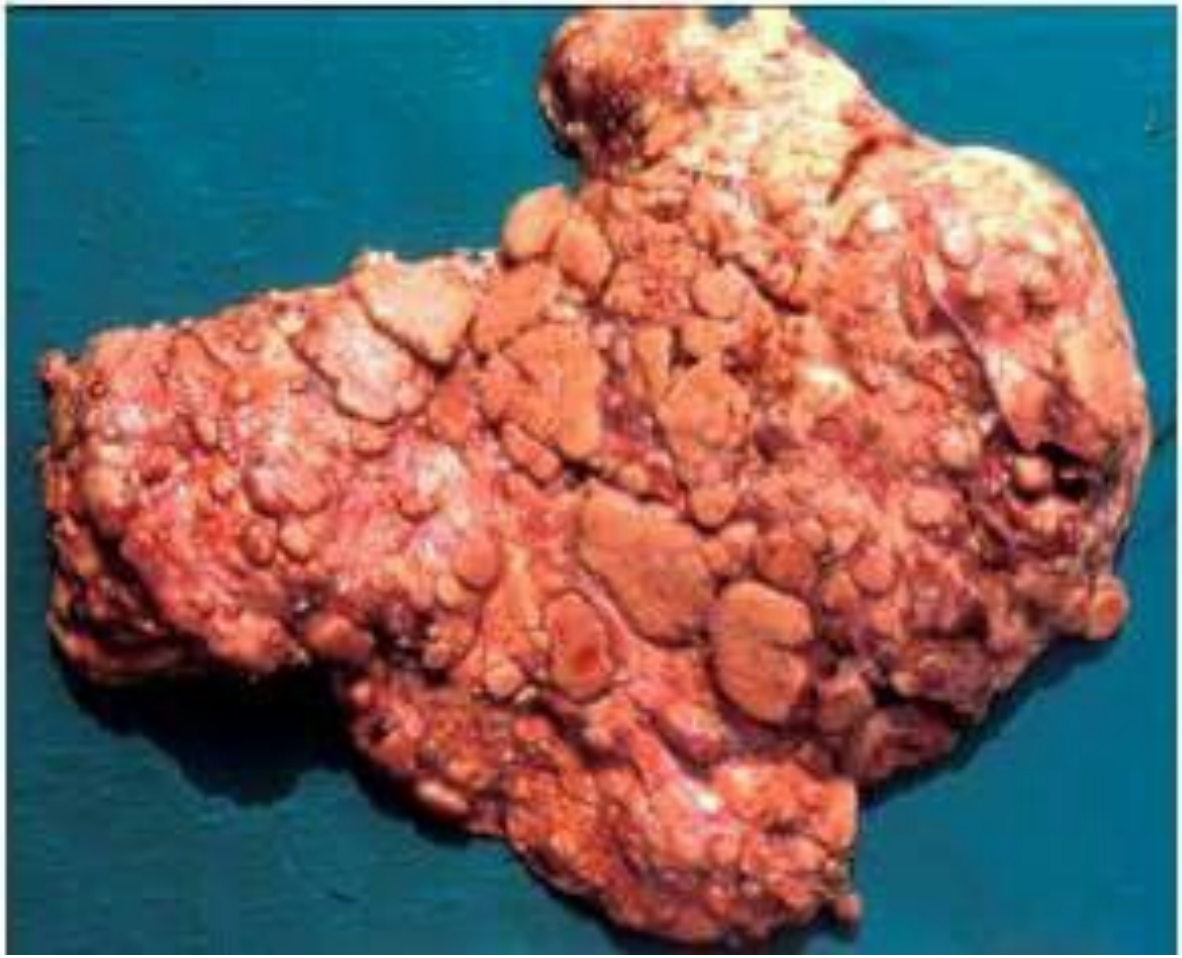
2- Organ: Lung (bovine)

Lesion: The lung parenchyma is almost entirely replaced by variably-sized, coalescing, raised pale tubercle nodules.

Etiology:

Mycobacterium bovis.

Diagnosis: T.B.

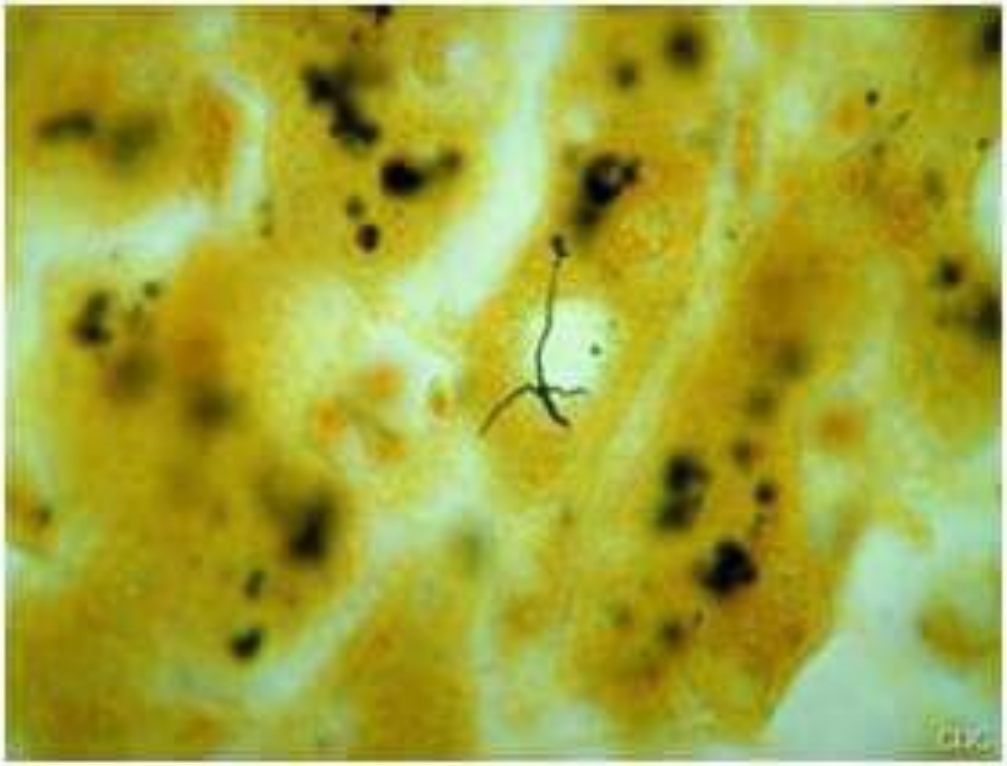


Organ: kidney

Lesion: A two spiral-like leptospira (spirochaete). (silver stain)

Etiology: *Leptospira spp*

Diagnosis: Leptospirosis

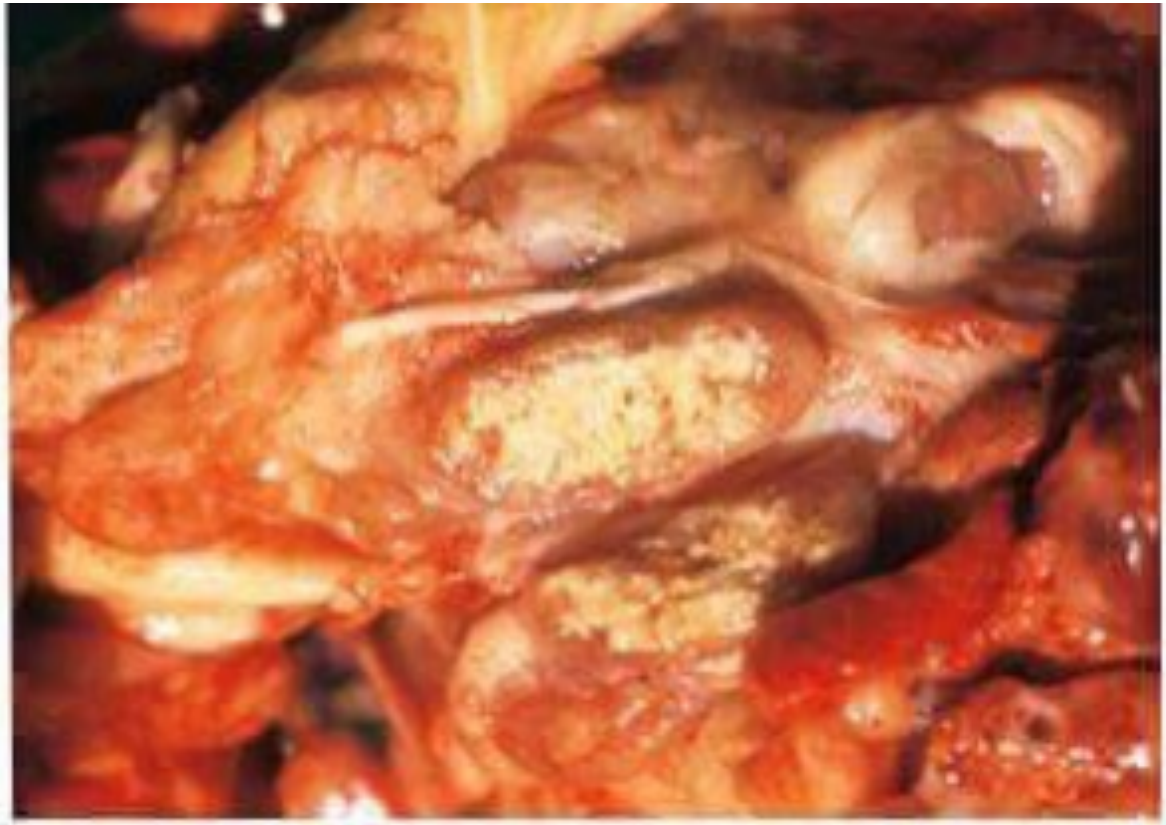


3- **Organ:** L.N (Tracheobronchial)

Lesion: The center of the sectioned node is replaced by caseous, mineralized debris.

Etiology: *Mycobacterium bovis.*

Diagnosis: T.B.

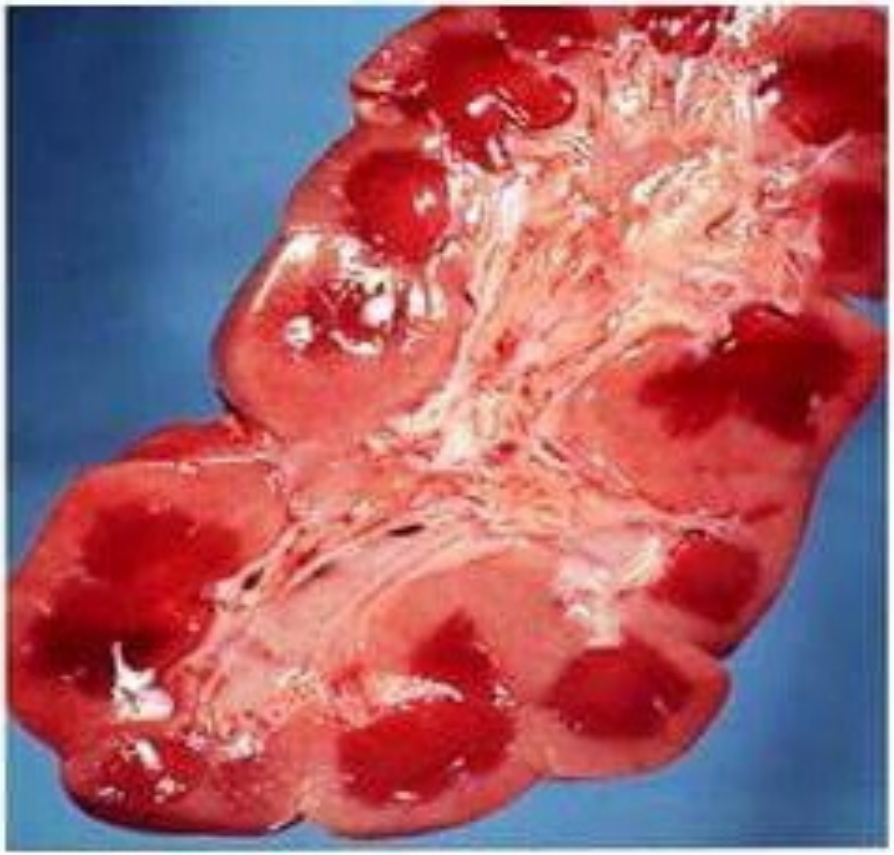


Organ: Kidney

Lesion: multiple area of hemorrhage in the enal cortex.

Etiology: *Leptospira hardjo bovis*

Diagnosis: leptospirosis

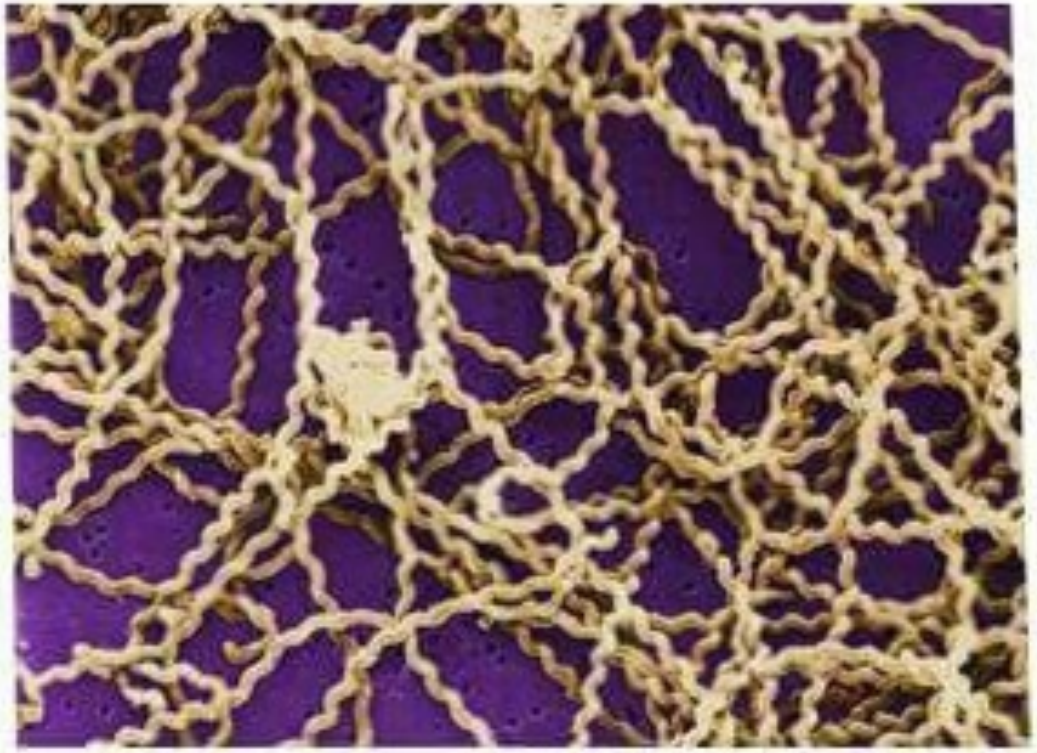


Organ:

Lesion: A number of rope-like leptospira (Spirochetes) are shown through electron microscope.

Etiology: *Leptospira spp*

Diagnosis: Leptospirosis



Organ: kidney (bovine)

Lesion: White spots of miliary distribution.

Etiology: *Leptospira hardjo bovis*

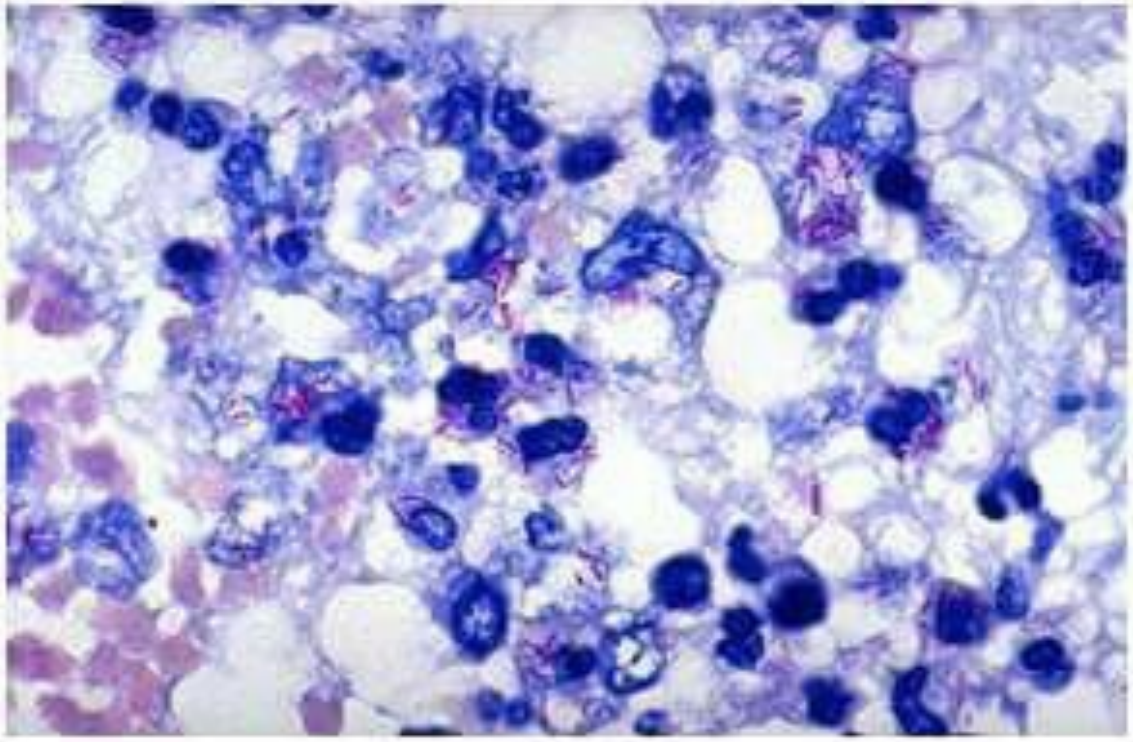
Diagnosis: Leptospirosis

11- **Organ:** Lung

Lesion: (ziehl Neelsen stain) TB organisms are identified by their red color on acid fast staining H&E stain. (Magnification: 40 ×)

Etiology: *Mycobacterium bovis.*

Diagnosis: T.B.

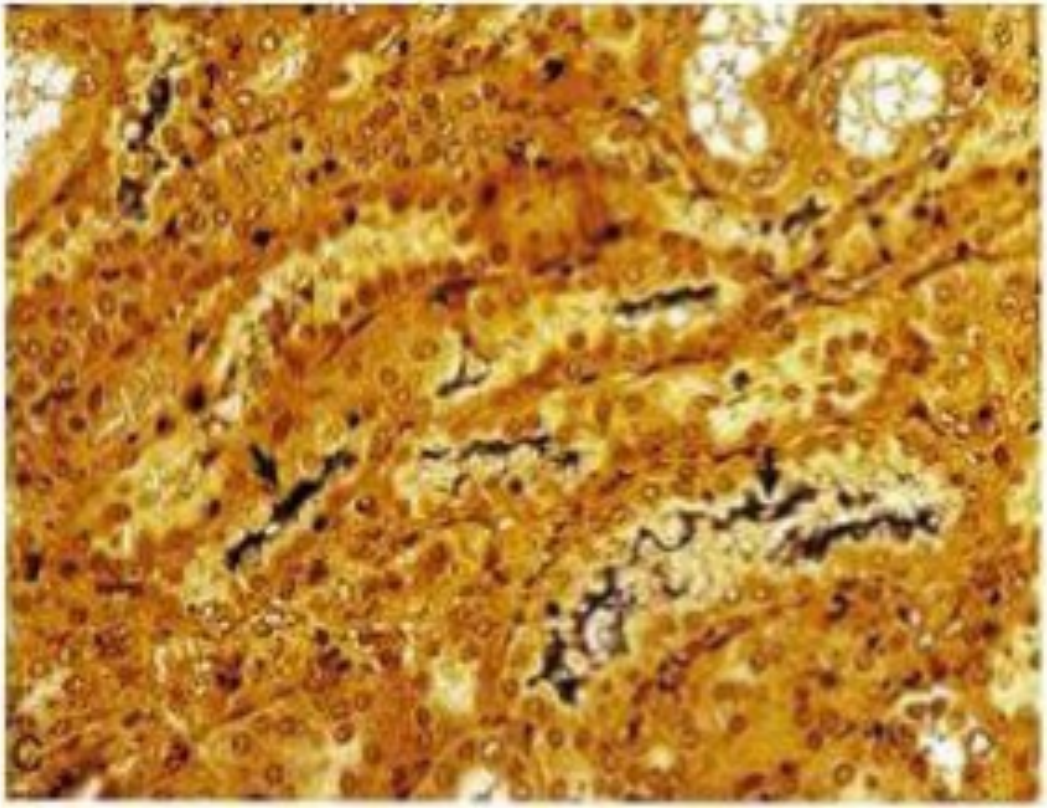


Organ: Bovine kidney

Lesion: Numerous Leptospira are present in the lumen of tubules. Leptospira colonization the tubules epithelial cell which is typical of these bacteria (Sliver stain).

Etiology: *Leptospira hardjo bovis*

Diagnosis: leptospirosis

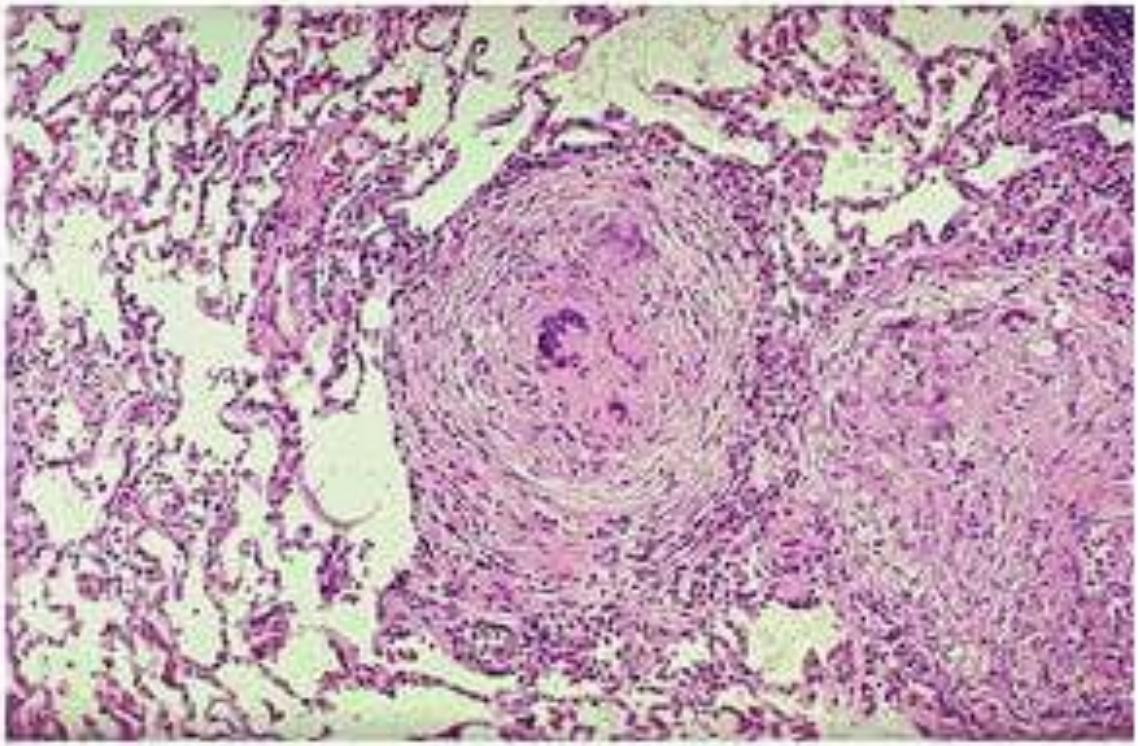


5- **Organ:** Lung

Lesion: there is multiple granulomas scattered in the lung parenchyma consist of macrophages, epithelioid cells, lymphocyte and Langhans gaint cells. H&E stain. (Magnification: 5×)

Etiology: *Mycobacterium bovis.*

Diagnosis: T.B.

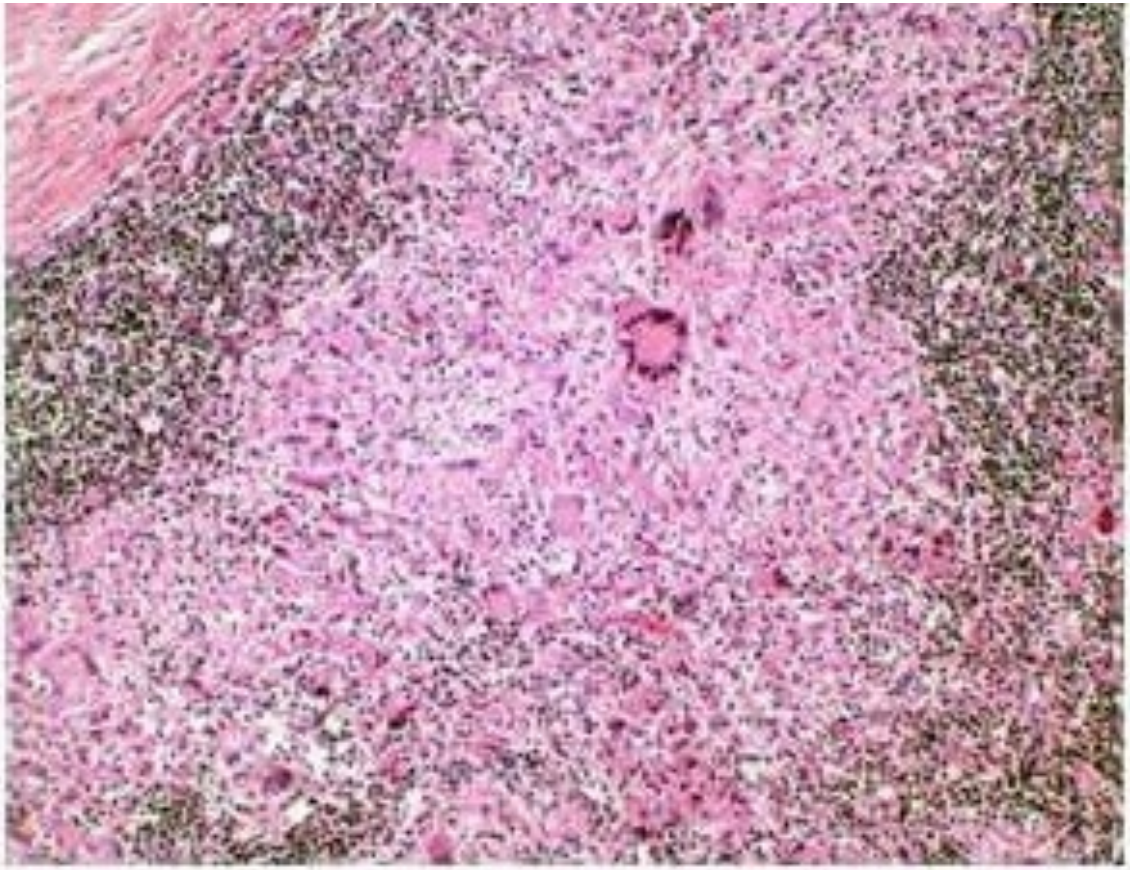


8- **Organ:** L.N

Lesion: a section through a lymph node showing a Langhans' cell caused by tuberculosis (TB) H&E stain. (Magnification: 5×)

Etiology: *Mycobacterium bovis.*

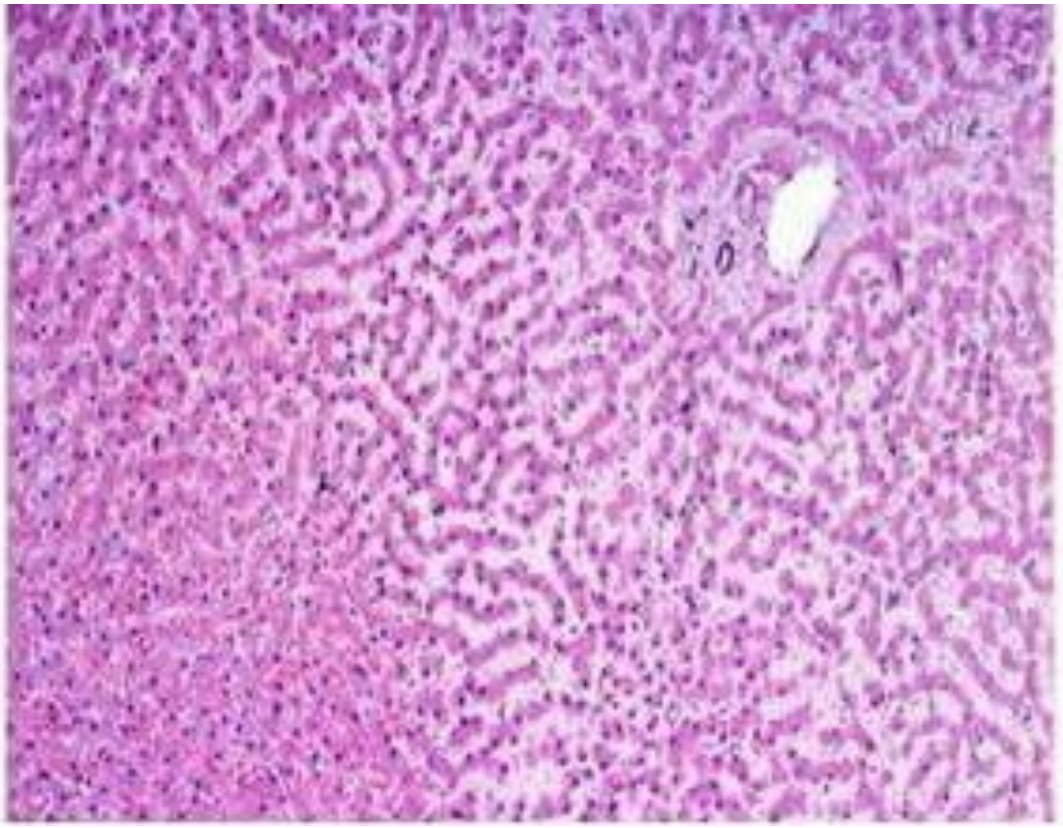
Diagnosis: T.B.



Organ: Liver

Lesion: disorganization of the hepatic cord due to dilatation of sinusoids which lead to pressure atrophy of hepatic cord, also congestion of sinusoids ( )

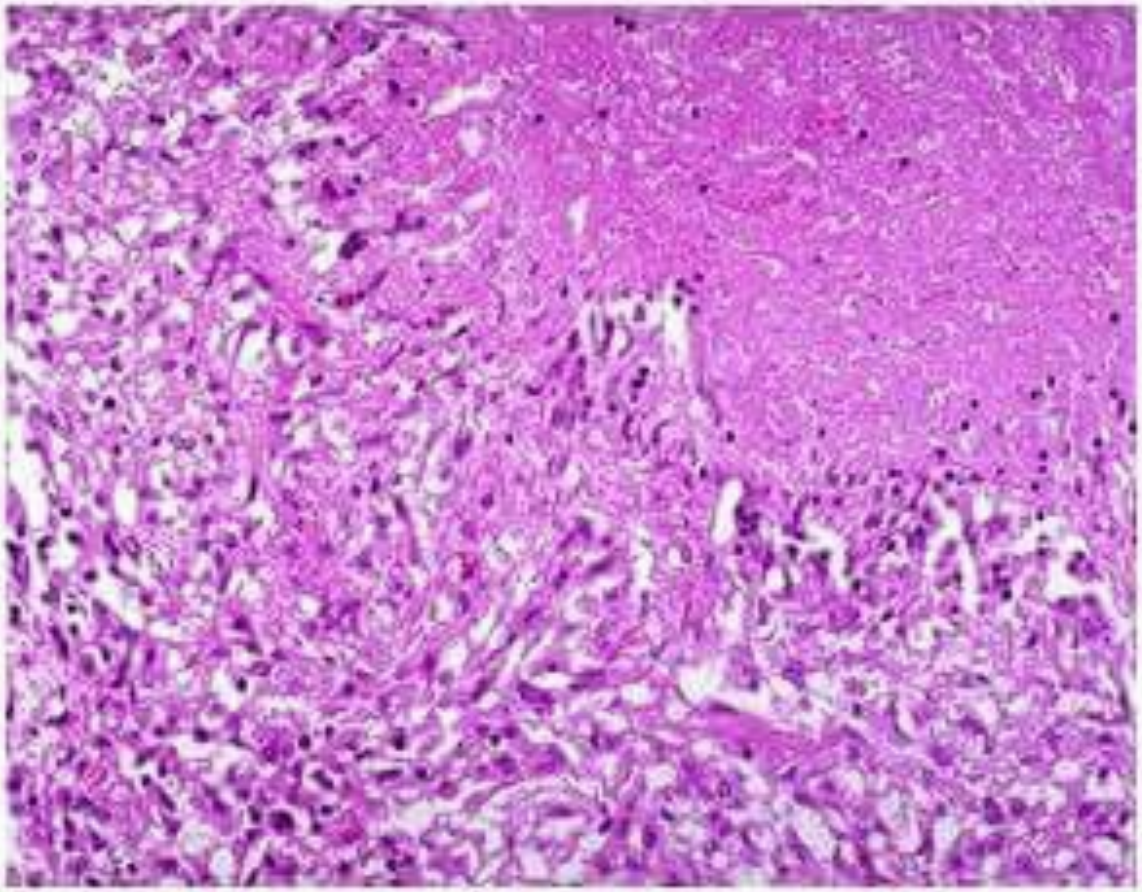
Diagnosis: leptospirosis



7- **Organ:** Lung

Lesion: The edge of a granuloma is shown here at high magnification. At the upper right is amorphous pink caseous material composed of the necrotic elements of the granuloma as well as the infectious organisms. This area is ringed by the inflammatory component with epithelioid cells, lymphocytes, and fibroblasts. H&E stain. (Magnification: 10×)

Diagnosis: T.B.



4- **Organ:** Liver, Lung and Spleen

Lesion: The cut surface showed numerous, uniformly dispersed, small sized white foci.

Etiology: *Mycobacterium bovis.*

Diagnosis: Miliary T.B.

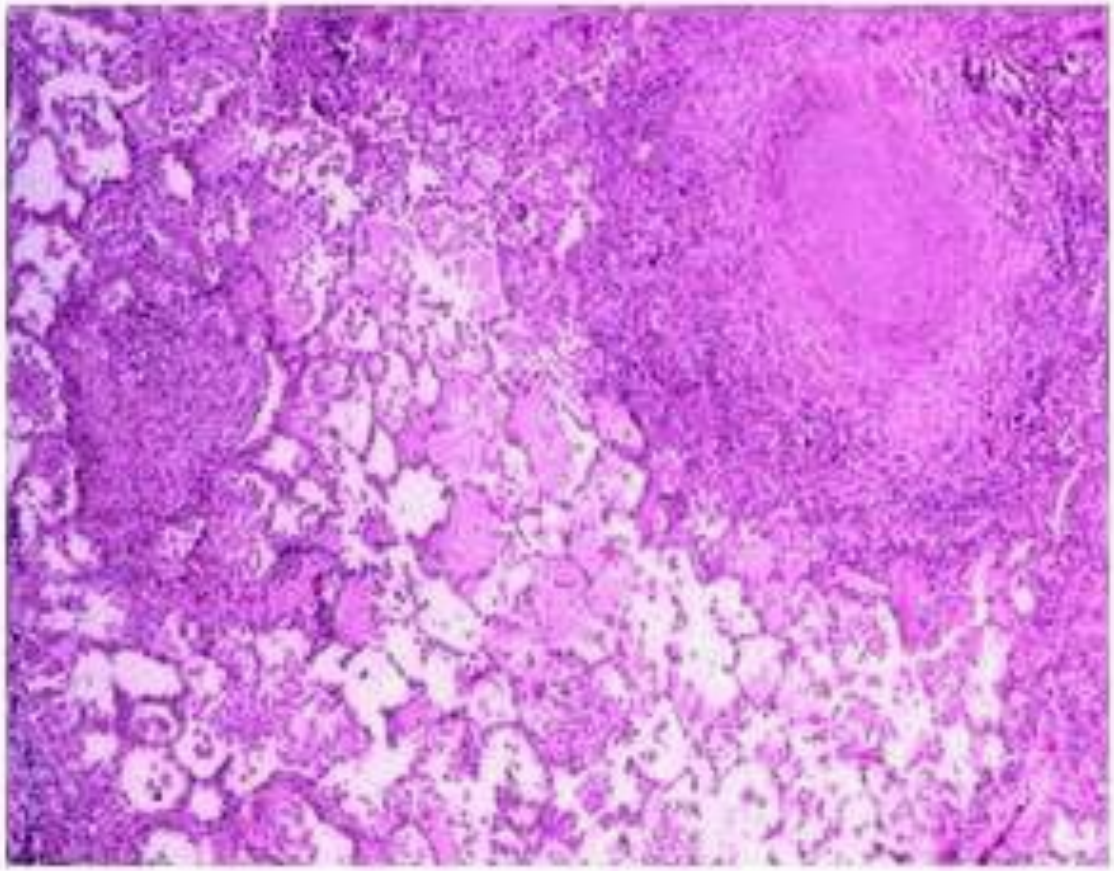
6- **Organ:** Lung

Lesion: caseous necrosis (no cellularity - upper right); edema in alveoli; inflammatory cells infiltrate (macrophages, and lymphocytes) in alveoli and around granuloma.

H&E stain. (Magnification: 5×)

Etiology: *Mycobacterium bovis.*

Diagnosis: T.B.



9- **Organ:** Lung

Lesion: Granulomatous pneumonia, Langhans-type giant cell, epithelioid cells, lymphocytes, and fibrosis.

H&E stain. (Magnification: 40×)

Etiology: *Mycobacterium bovis.*

Diagnosis: T.B.