

WSC 2024-2025  
Conference 9, Case 1  
Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Liver: Approximately 40% of the section is replaced by multifocal to coalescing areas of lytic necrosis which are composed of a large central area of often lamellated acellular eosinophilic necrotic debris **(1pt)**, which is surrounded by a thick rim of foamy epithelioid macrophages **(1pt)** admixed with variable combinations and concentrations of neutrophils **(1pt)**, lymphocytes and lesser numbers of plasma cells, and foreign body type giant cells **(1pt)** admixed edema which are in turn surrounded by dense fibrous connective tissue and active fibroblast. The fibrous connective tissue bridges and markedly expands portal areas **(1pt)**, effaces hepatocytes and contains congested vessels and numerous biliary ductules and an infiltrate of moderate numbers of previously described inflammatory cells. This connective tissue fingers into and replaces adjacent hepatocytes **(1pt.)**, and remaining hepatocytes at the edges of inflammatory foci are often shrunken and atrophic. Interspersed among the inflammatory cells and lytic debris are numerous 15-25um round amebic trophozoites **(1pt.)** with a moderate amount of finely vacuolated eosinophilic cytoplasm and a single round nucleus with a prominent karyosome **(1pt.)**.

Lung: Approximately 50% of the section is effaced by nodular areas of parenchymal (lytic) necrosis **(1pt.)** and hemorrhage which are often bounded by a dense band of basophilic cellular debris. Adjacent to these areas, alveoli are filled by varying combinations and concentrations of viable and degenerate neutrophils and foamy macrophages (often with phagocytized debris), admixed with abundant cellular debris, hemorrhage **(1pt.)** fibrin, and edema. Within this exudate, there are numerous 15-25um amoebic trophozoites **(1pt.)** with basophilic vacuolated cytoplasm, a 6um magenta nucleus with a prominent karyosome. Occasional amoeba have phagocytized erythrocytes. Within these areas, alveolar septa are variably congested, necrotic **(1pt.)**, or expanded by fibroblasts and or collagen. **(1pt.)** Airway lumina often contain refluxed exudate and trophozoites and there is multifocal necrosis of lining epithelium. **(1pt.)** Vessel walls are multifocally necrotic (vasculitis), and or thrombosed and trophozoites may be seen in vascular lumina. **(1pt.)** Within these areas there is patchy type II pneumocyte hyperplasia. The pleura is markedly thickened and expanded by granulation tissue **(1pt.)**, polymerized fibrin and hemorrhage, and small numbers of lymphocytes, plasma cells, and histiocytes, edema and dilated lymphatics, and is lined by hyperplastic mesothelium.

**MORPHOLOGIC DIAGNOSIS:** 1. Liver: Hepatitis, necrotizing **(1pt.)**, chronic-active, multifocal to coalescing, severe, and numerous amebic trophozoites **(1pt.)**  
2. Lung: Pneumonia, interstitial, necrohemorrhagic, **(1pt.)** chronic-active, diffuse, severe, with pleural granulation tissue and numerous amebic trophozoites. **(1pt.)**

Cause: Entamoeba histolytica **(1pt.)**

WSC 2024-2025  
Conference 9, Case 2  
Tissue from a dog.

**MICROSCOPIC DESCRIPTION:** Lung: There are multiple concurrent but independent processes occurring in the two submitted sections of lung. Multifocally, there are extensive areas in which alveolar septa are markedly expanded by congestion, abundant polymerized fibrin **(1pt)**, edema fluid and hypertrophied intra-alveolar macrophages **(1pt)**, and multifocally intermittently lined by type II pneumocytes. **(1pt)** Alveoli in these areas contain varying combinations and combinations of polymerized fibrin and hemorrhage, **(1pt)** alveolar macrophages, and fewer neutrophils, lymphocytes and plasma cells **(1pt.)** In some areas not affected by this process, alveoli contain small amounts of hemorrhage, edema and alveolar macrophages contain granular intracytoplasmic pigment **(1pt)** (“heart failure cells”) **(1pt)**. Surrounding alveolar septa are often expanded by congestion **(1pt)**, edema **(1pt)**, rare fibrin thrombi, and low to moderate amounts of fibrous connective tissue. **(1pt)** There is diffuse dilation of pleural and periarterial lymphoatics (edema). Multifocally, primarily within subpleural alveoli are filled by macrophages containing abundant intracytoplasmic homogeneous, amphophilic, mildly anisotropic hyaline material **(1pt)** admixed with moderate numbers of alveolar macrophages with foamy eosinophilic cytoplasm and lesser numbers of neutrophils, lymphocytes, plasma cells and multinucleated foreign-body macrophages, fibrin, and edema. Within affected areas, alveolar septa are expanded markedly by fibroblasts and collagen**(1pt)**, macrophages, lymphocytes, and rare plasma cells, as well as type II pneumocyte hyperplasia **(1pt)**. Finally, at the margin of one of the sections, there is marked expansion of alveolar septa by abundant fibrous connective tissue, which coalesces and entraps remaining airways. Airway epithelium occasionally extends into adjacent alveoli, resulting in a “honeycomb” pattern. The fibrous connective tissue contains numerous lymphocytes and plasma cells, and at the periphery of this lesion, remnant and ectatic alveolar lumina contain numerous alveolar macrophages.

**MORPHOLOGIC DIAGNOSIS:** 1. Lung: Pneumonia, interstitial, **(1pt)** necrotizing **(1pt)** and fibrinous, focally extensive, moderate.  
2. Lung: Congestion, chronic **(1pt)**, diffuse, mild to moderate with alveolar siderophages **(1pt)** and and septal congestion and edema.  
3. Lung: Pneumonia, interstitial, granulomatous **(1pt)**, chronic, multifocal, moderate, with abundant intracytoplasmic hyaline material **(1pt)**.  
4. Lung: Pneumonitis, lymphocytic, chronic, focal, marked.

O/C: **(1pt)**

WSC 2024-2025  
Conference 9 Case 3.  
Tissue from a drill.

**MICROSCOPIC DESCRIPTION:** Eye (globe): Unilaterally expanding the uvea **(1pt.)** and elevating the ciliary body and root of the iris **(1pt.)** is a degenerating multilocular hydatid cyst**(1pt.)** composed of irregular, intact and ruptured, often collapsed, 2mm diameter cysts **(1pt.)** surrounded and separated by bands of collagen containing profound a profound immune response. Cysts are lined by a 10-50 um thick eosinophilic, hyaline outer membrane **(1pt.)** and an single layered inner germinal epithelial layer. Additional features and protoscolices are not evident, although some smaller intact cysts contain a flocculent basophilic material. **(1pt.)** Ruptured cysts are collapsed, surrounded, and occasionally infiltrated by variable combinations and concentrations of degenerate neutrophils, epithelioid macrophages **(1pt.)**, eosinophils **(1pt.)**, and fewer lymphocytes, plasma cells, multinucleate giant cells macrophages of the foreign-body type, **(1pt.)** which are admixed with abundant brightly eosinophilic granular cellular debris. Granulomatous inflammation extends into the subjacent sclera **(1pt.)** both beneath the cestode larva as well as under the iris root on the other side of the globe, and small amounts of inflammation are present in the peripheral cornea **(1pt.)**. There are large aggregates of lymphocytes and plasma cells, and fewer macrophages, within the conjunctiva **(1pt.)** immediately subjacent to the parasite, and multifocal lymphoplasmacytic infiltration of lacrimal glands. **(1pt.)**

**Morphologic Diagnosis:** Eye: Panophthalmitis **(1pt.)** , granulomatous **(1pt.)**, focally extensive, severe, with lymphohistiocytic conjunctivitis **(1pt.)** and hydatid cyst **(1pt.)**.

**CAUSE:** *Echinococcus multilocularis* **(3pt.)**

O/C - **(1pt.)**

WSC 2024-2025

Conference 9 Case 4.

Tissue from a rhesus macque

**MICROSCOPIC DESCRIPTION:** Uterus: Approximately 60% **(1pt.)** of the endometrium is necrotic **(1pt.)** and is replaced by an infiltrate of large numbers of necrotic and fewer viable neutrophils **(1pt.)**, and fewer macrophages **(1pt.)** admixed with abundant hemorrhage, **(1pt.)** polymerized fibrin **(1pt.)**, and cellular debris. Blood vessels in this area are markedly congested **(1pt.)**, and occasionally contain fibrin thrombi. **(1pt.)** The inflammatory infiltrate, often admixed with numerous fibroblasts and small amounts of collagen infiltrates into the underlying myometrium. **(1pt.)** In less affected areas, endometrial glands are preserved, and both endometrial glandular epithelium and fewer stromal cells are swollen with vacuolated cytoplasm **(1pt.)** (decidual change) **(1pt.)**. The less affected endometrium is infiltrated by numerous lymphocytes **(1pt.)**. The inflammatory change in the endometrium dissects downward into the myometrium, often following perivascular interstitial collagen. **(1pt.)** There is multifocal vacuolation and eosinophilia and rare necrosis of individual myometrial cells. **(1pt.)** The serosa is multifocally expanded by mats of polymerized fibrin **(1pt.)**, which in one area contains large numbers of viable and degenerate neutrophils and cellular debris. **(1pt.)**

**MORPHOLOGIC DIAGNOSIS:** Uterus: Endometritis **(1pt.)**, necrohemorrhagic **(1pt.)**, diffuse, marked with endometrial decidual change **(1pt.)**, multifocal myometrial necrosis and fibrinosuppurative peritonitis **(1pt.)**.

O/C: **(1pt.)**