

ECVP/ESVP Summer School in Veterinary Pathology

Summer School 2015 – Histology

Case 6

DOUBLE LESION

OVINE

HD: Lung.

Approximately 80% of the lung is affected by two pathological processes. The more extensive lesion consists of replacement of 70% of the lung by an infiltrative, non-demarcated, unencapsulated, densely cellular neoplasm extending to cut borders. The least severe lesions consist of focal substitution of the lung by two, approximately 0,5 cm in diameter, encapsulated, necrotic inflammatory nodules.

A) The neoplasm is composed of tubules and acini of epithelial cells embedded in abundant stroma composed of elevated numbers of spindle to stellate cells with oval to elongated and plump nuclei (fibroblasts) and lightly eosinophilic cytoplasm embedded in abundant collagen (interpreted as desmoplasia). Associated with desmoplasia, there are elevated numbers of mature plasma cells and small mature lymphocytes with rare viable neutrophils and foamy reactive macrophages.

Neoplastic tubuli and acini are lined by flat to cubical epithelial cells arranged in single or multiple layers occasionally producing papillary endoluminal projections. Neoplastic cells have intermediate N/C ratio, variably distinct cell borders and eosinophilic cytoplasm with occasional clear vacuoles. Nuclei are basal to paracentral (nuclear polarization), round to oval, with finely granular to vesicular chromatin and variably evident 1-2, small, basophilic oval nucleoli.

Mild to moderate anisokaryosis and anisocytosis are present. Mitoses are rare. The lumen of neoplastic structures occasionally contains sloughed epithelial cells, aggregates of neutrophils and rare foamy reactive macrophages.

Alveoli and bronchioles in unaffected areas contain numerous viable and degenerated neutrophils (karyolysis and karyorrhexis), lesser numbers of foamy alveolar macrophages and a minority of mature lymphocytes and plasma cells admixed with necrotic debris and lightly eosinophilic (protein poor) fluid (edema).

The residual pulmonary interstitium is expanded by similar inflammation and by hyperaemia. Residual large bronchi are characterized by epithelial cell detachment (autolytic change).

B) There are two, nodular inflammatory foci of up to 0,5 cm in diameter compressing the adjacent pulmonary parenchyma. The centre of the nodules is composed by abundant amorphous, granular, eosinophilic material (colliquative/lytic necrosis) admixed with moderate amount of granular, basophilic to purple amorphous material (dystrophic mineralization). Surrounding the necrosis, there is a thin layer of small mature lymphocytes and mature plasma cells admixed with lesser numbers of foamy reactive macrophages. Nodules are bordered by elevated numbers of plump reactive fibroblasts admixed with abundant dense collagen (thick fibrous capsule) that at the periphery comprises large numbers of newly formed hyperaemic capillaries (angiogenesis).

MD:

A) Lung: Bronchial adenocarcinoma.

B) Lung: Mild, multifocal, chronic, necrotizing and granulomatous pneumonia

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ND:

- A) Ovine Pulmonary Adenocarcinoma or Pulmonary Adenomatosis
- B) Caseous lymphadenitis

E:

- A) Jaagsiekte virus (Ovine retrovirus type B/D)
- B) *Corynebacterium pseudotuberculosis*

Histologic Description	Points
Style	1
Approximately 80% (0,5) of the lung is affected by two 0,5 pathological processes	1
Replacement of 70% of the lung (0,5) by an infiltrative (0,5), non-demarcated, unencapsulated, densely cellular neoplasm extending to cut borders (0,5).	1,5
Focal substitution (0,5) and compression of 10% of the lung by two, approximately 0,5 cm in diameter (0,5), encapsulated (0,5), necrotic inflammatory nodules.	1,5
TUMOR	
Tubules, acini	0,5
Stroma composed of spindle to stellate cells with oval to elongated and plump nuclei and lightly eosinophilic cytoplasm (fibroblasts) embedded in abundant collagen (desmoplasia)	1
mature plasma cells and small mature lymphocytes in desmoplasia	0,5
flat to cubical epithelial cells	0,5
single or multiple layers occasionally producing papillary projections	0,5
intermediate N/C ratio	0,5
variably distinct cell borders	0,5
nuclei basal to paracentral (polarization)	0,5
finely granular to vesicular chromatin	0,5
1-2, small, basophilic oval nucleoli	0,5
Rare mitoses	0,5
Whitin Alveoli and bronchiolar lumens viable and degenerated neutrophils	0,5
INFLAMMATION	
central amorphous, granular, eosinophilic material (colliquative/lytic necrosis)	1
granular, blue to purple amorphous material (dystrophic mineralization).	0,5
thin layer of small mature lymphocytes and plasmacells	0,5
bordered by plump reactive fibroblasts	0,5
abundant dense collagen (thick fibrous capsule)	0,5



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MD/MDs: A) Lung, bronchial adenocarcinoma. (2 points) B) Mild, multifocal (0,5), chronic, necrotizing (0,5) and granulomatous (0,5) (encapsulated) pneumonia	3,5
E/Es: A) Jaagsiekte virus (Ovine retrovirus type B/D) 1 B) <i>Corynebacterium pseudotuberculosis</i> 1	2
	20