# Veterinary Bioscience: Digestive System

## LECTURE 21
## DISEASES OF THE PERITONEAL CAVITY

### LECTURER

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### INTENDED LEARNING OUTCOMES

At the end of this lecture, you should be able to:

- discuss the routes by which peritoneal fluid drains in health and explain the mechanisms that can be responsible for accumulation of excess fluid within the cavity
- describe the common disease processes that affect the peritoneal cavity and retroperitoneum of domestic animals and outline their causes and potential consequences
- identify the characteristic gross and/or microscopic lesions that are used to reach a specific diagnosis.

### KEY WORDS

peritoneum, mesothelium, fibrin, fibrous adhesion, internal and external herniation, hernia, haemoperitoneum, ascites, transudate, modified transudate, uroperitoneum, chyloperitoneum, peritonitis, exudate, fat necrosis, lipoma, mesothelioma, retroperitoneum, retroperitonitis

### LECTURE OVERVIEW

What comprises the peritoneal cavity and retroperitoneum? What are the routes by which peritoneal fluid drains? How does the peritoneum respond to injury? What are the important disease processes that affect the peritoneal cavity and retroperitoneum of the domestic animals? What are the causes and potential consequences of these diseases?

In health, the peritoneal (or abdominal) cavity is lined by a monolayer of mesothelial cells and contains a small volume of transudative fluid that is constantly recycled via lymphatic drainage. Several conditions may result in distension of the cavity by excess non-inflammatory oedema fluid, because of obstruction of drainage pathways and/or over-production of fluid.

Injury to the lining mesothelium permits exudation of fibrin and leukocytes into the peritoneal cavity. If the inflammatory response is severe or persistent, it may promote the formation of permanent fibrous tissue adhesions between cavity structures. Adhesions can be advantageous in that they may help to wall off sites

of inflammation within the cavity to prevent systemic spread of infectious agents but they can also compromise the function of the various visceral organs that are suspended within the cavity.

In this lecture, we will review the important disease processes that involve the peritoneal cavity of domestic animals. These disorders include developmental and acquired lesions that permit internal or external herniation of cavity viscera, abnormal cavity contents (including foreign bodies, parasites, gastrointestinal contents, oedema fluid, blood, urine, chyle and bile), inflammation of the cavity (peritonitis) and its causes and consequences, and neoplasia.

The retroperitoneum lies immediately external to the peritoneal cavity and in health contains loose fibrofatty connective tissues and organs such as the kidneys and adrenal glands. The most significant processes that can affect the retroperitoneum of domestic animals and that will be reviewed in the lecture are retroperitoneal fat necrosis, inflammation (retroperitonitis), accumulation of haemorrhage or other fluids, and neoplasia.

## FURTHER READING

F.A. Uzal, B.L. Plattner and J.M. Hostetter. Alimentary system. In: Jubb, Kennedy and Palmer's Pathology of Domestic Animals. 6th ed., Volume 2. Ed. M. G. Maxie. Elsevier, St Louis, Missouri, USA (2016). pp. 1-257 (especially pp. 78-80 and 244-257)

H. B. Gelberg. Alimentary system. In: Pathologic Basis of Veterinary Disease. 6th edition. Ed. J. F. Zachary. Elsevier, St Louis, Missouri, USA (2017). pp. 324-411 (especially pp. 331 and 334-339)