# Veterinary Bioscience: Digestive System

## LECTURE 20
## DISEASES OF THE EXOCRINE PANCREAS

### LECTURER

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### INTENDED LEARNING OUTCOMES

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

- Explain the defence mechanisms that prevent pancreatic auto-digestion in health and the circumstances in which they can fail.
- Recognise the clinical signs that may be indicative of exocrine pancreatic disease.
- Explain the aetiopathogenesis and describe the associated lesions of the common disorders of the exocrine pancreas of domestic animals.

### KEY WORDS

Protease inhibitor, pancreatic hypoplasia, pancreatic atrophy, juvenile pancreatic atrophy, exocrine pancreatic insufficiency, jaundice, steatorrhoea, amylorrhoea, creatorrhoea, pancreatic necrosis, pancreatitis, pancreatic calculi, exocrine pancreatic nodular hyperplasia, pancreatic adenoma, pancreatic adenocarcinoma.

### LECTURE OVERVIEW

The exocrine pancreas plays a pivotal role in the digestion of food via the secretion of digestive enzymes/pro-enzymes and bicarbonate. Several defence mechanisms exist to prevent auto-digestion of this organ and of other host tissues. However, in certain circumstances, these defences can go awry, be circumvented or become exhausted, resulting in pancreatic necrosis (necrotising pancreatitis).

Although injury to the exocrine pancreas may provoke clinical signs during the acute phase, the large functional reserve of this organ allows many disease processes to smoulder subclinically for prolonged periods. When clinical signs do emerge, they may largely reflect maldigestion (for example, weight loss despite a normal to increased or depraved appetite, gross abnormalities in the volume, colour and/or odour of the faeces or in the frequency of defaecation), jaundice (due to obstruction of the distal biliary tree) or metabolic disturbances arising from concurrent destruction of the endocrine components of the pancreas (diabetes mellitus).

We will review the important disorders of the exocrine pancreas in domestic animals, including developmental anomalies, diffuse and focal atrophy, pancreatic necrosis, pancreatitis, pancreatic duct obstruction, nodular hyperplasia and neoplasia. The known causes and characteristic diagnostic features of the various exocrine pancreatic disorders will also be discussed.

## FURTHER READING

Pancreas. In: *Jubb, Kennedy and Palmer's Pathology of Domestic Animals*. 6th edition, Volume 2. Ed. MG. Maxie. Elsevier Saunders, Philadelphia, USA (2016). pp. 353-375.

Liver, biliary system, and exocrine pancreas. In: *Pathologic Basis of Veterinary Disease*. 6th edition. Ed. M. D. McGavin and J. F. Zachary. Mosby Elsevier, St Louis, USA (2017). pp. 432-434 and pp. 464-470.