

# Veterinary Bioscience: Metabolism



## WEEK 1 – THE LIVER IN HEALTH PRACTICAL CLASS 1 – COMPARATIVE GROSS ANATOMY OF THE LIVER

### TEACHING STAFF

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### LOCATION

Room B104 Dissection Laboratory, Western Edge Biosciences (WEBS), Parkville

### INTENDED LEARNING OUTCOMES

By the end of this practical class, students should be able to:

- identify the major external landmarks and surfaces of the liver
- identify the different lobes of the liver
- identify the following ligaments: coronary ligament, triangular ligaments, round ligament, falciform, hepatogastric and hepatoduodenal (= lesser omentum) ligaments
- identify the blood vessels and bile passages at the hepatic porta
- compare and contrast the features and lobes in the livers from the different domestic species
- identify the surface anatomical landmarks necessary for performing a percutaneous liver biopsy in the dog.

### PRACTICAL OVERVIEW

#### MATERIALS SUPPLIED

Each group will be supplied with a liver from a sheep and/or pig. In addition, demonstration specimens on the centre tables will include livers from the dog, horse, pig and cow. A cadaver will be used to demonstrate the surface anatomical landmarks associated with percutaneous liver biopsy in the dog.

#### SHEEP / PIG LIVERS

Identify the visceral and diaphragmatic surface, and the porta. Examine the following:

**Lobes** - (the diagram below may help)

**Vessels** - hepatic artery, portal vein, hepatic veins, caudal vena cava

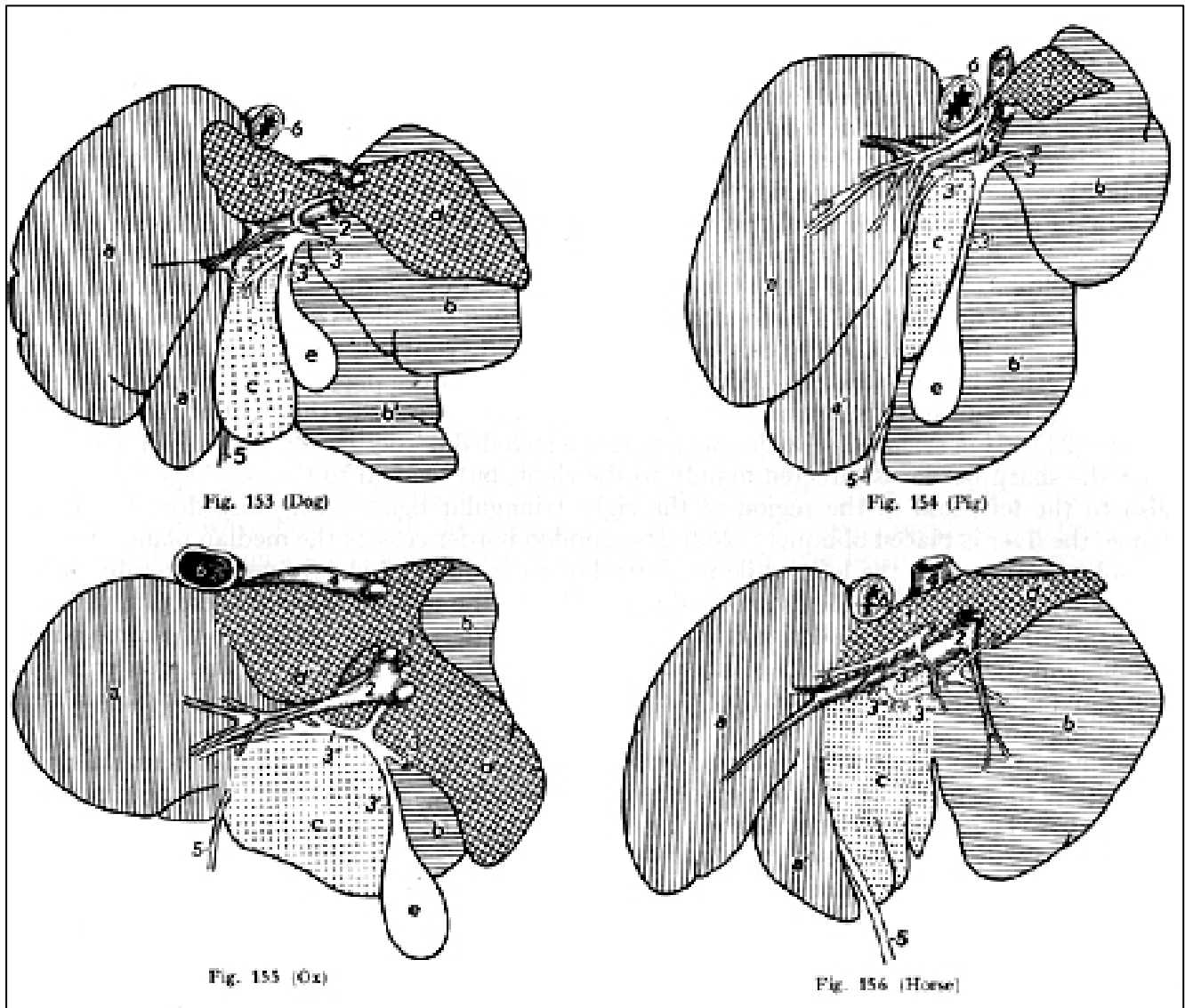
**Hepatic lymph nodes**

**Biliary system** - hepatic ducts, common hepatic duct, cystic duct, bile duct, gall bladder

**Lobulation** - Incise through one of the liver lobes with a scalpel. Note the thickness of the liver capsule and the consistency of the underlying tissue.

- Observe the cut surface of the pig liver for clearly marked lobules.
- Look for lobulation in the other species.

**Ligaments** - (may not be present) - round, coronary, triangular, falciform, hepatogastric and hepatoduodenal (= lesser omentum)



The liver of domestic mammals (from Nickel, Schummer and Seiferle. *The Viscera of the Domestic Mammals*. (1973))

- a, a'** Left lobe (dog, pig, horse); **a** Left lateral lobe, left lobe (ox); **a'** Left medial lobe  
**b, b'** Right lobe (dog, pig); **b** Right lateral lobe, right lobe (ox, horse); **b'** Right medial lobe  
**c** Quadrate lobe  
**d, d'** Caudate lobe; **d** Caudate process; **d'** Papillary process  
**e** Gall bladder (except in the horse)

## DEMONSTRATION SPECIMENS FROM OTHER SPECIES

Identify the features listed above (hepatic lobes, blood vessels, lymph nodes etc.). Tabulate below one or more major features of the liver of each species which would enable you to distinguish each from the other.

	L I V E R
D O G	
S H E E P	
O X	
H O R S E	
P I G	

## OBJECT BASED LEARNING AREA

Examine the transverse and longitudinal abdominal sections of the horse and sheep in the Object Based Learning Area (OBLA), paying particular attention to the location of the liver and its relationship to the other viscera.

## KEYWORDS

liver, gall bladder, diaphragm, coronary ligament, triangular ligaments, round ligament, falciform ligament, hepatogastric ligament, hepatoduodenal ligament, lesser omentum, liver lobes, hepatic porta, bile duct system, common bile duct, cystic duct, hepatic artery, portal vein, duodenum, caudal vena cava

## FURTHER READING

Dyce, Sack and Wensing. *Textbook of Veterinary Anatomy*. 3rd edition (2002), pp. 131 (liver), 471 (horse), 604 (ruminant), 735 (pig)

Evans and de Lahunta. *Miller's Guide to the Dissection of the Dog*. (3rd edition or later)

Getty. *Sisson and Grossman's The Anatomy of the Domestic Animals*. 5th edition (1975), pp. 104 (general), 457, 492 (horse), 861, 908 (ruminant)

Nickel, Schummer and Seiferle. *The Viscera of the Domestic Mammals*, Volume 2 (1973), p. 144 (liver)