MORPHOMETRICAL STUDIES ON THE LIVER OF LARGE WHITE YORKSHIRE PIG (*SUS SCROFA*)[#]

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ABSTRACT

The aim of this investigation to describe the morphometrical characteristics of the liver in large white Yorkshire pig. In present study liver of six pigs were used. Measurements for weight, volume, length, width and thickness of liver were evaluated. It was cherry brown in colour and somewhat rectangular in shape. The average weight was 1.203 kg. The average length was 24.18 cm. The liver was the widest at the ventral aspect. The width of the liver was widest at the ventral aspect. The right lateral lobe was thickest lobe.

***Key words*:** Morphometrical, pig, liver

Introduction

Swine are domesticated animals, of the genus *Sus* and of the family Suidae, that are raised for food all over the world. Yorkshire, also called as Large White or Large White Yorkshire, breed of swine produced in the 18th century by crossing the large indigenous white pig of Northern England with the smaller, fatter, white Chinese pig. The Large White Yorkshire, breed of swine originated in Yorkshire County, England, and has been a registered breed since 1884. Many years of selectively breeding swine eventually resulted in the Large White pigs that we know today. Large White swine can be distinguished by their long, bony legs, erect ears, long length, overall large frame size, white colour and pink skin. Large Whites are a tough, rugged breed that can tolerate fluctuations in their climate and environment, making them an ideal breed for commercial markets around the world.

The Resemblance of the structure of liver throughout the animal kingdom, from fishes up to higher vertebrates, encourages the interest to get factual structural details of that colossal gland. In mammals the liver is the largest digestive gland and also the "Jack-of-all-trades" of the body, established in a strategic position in the vascular system, obligatory to the digestive system and concerned with a multiplicity of biochemical activities. Replacement of incapacitated cells by multiplication of the survivors takes place very rapidly (Cowdry, 1950). In the present research, physical parameters of liver have been studied in detail.

Materials and Methods

The present study was conducted on six apparently healthy adult Large White Yorkshire pig (*Sus scrofa*) of either sex. The liver from the freshly slaughtered animals were procured from local abattoir houses, Bikaner. The measurement for various physical parameters like weight, length, width, thickness, and volume were carried out. Weight was taken with the help of physical balance, volume was measured by water displacement method by beaker and length, width and thickness were measured by vernier calipers and measuring scale.

Results and Discussion

Weight

The average weight of the liver was 1.203 kg. Whereas the mean weight of the liver was 0.775 kg in sheep (Nickel *et al*., 1979) and 0.356 kg in Marwari goat (Bamaniya, 2016). Miller (1965) stated that the average weight of liver of dog was 450 gm. The weight of the liver in pig was 1.29 per cent of the body weight. However, the liver in man, sheep and Marwari goat was 2 per cent, 1.45 per cent, 1.9 per cent of the total body weight (Garven, 1965; Nickel *et al.,* 1979 and Bamaniya, 2016), respectively.

Length

In the present study, the length of liver varied from 8.88 to 10.2 inches (22.2 to 25.5 cm) along the mid-line with an average of 9.672 inches (24.2 cm) while Pareek (2000) found that the average length was 8.97 inches in sheep and Bamaniya (2016) recorded the average length as 8.31 inches (21.15 cm) in Marwari goat.

Width

The width of the liver during this investigation in the pig was widest at the ventral aspect than the dorsal aspect as was also reported in sheep (May, 1955), whereas the dorsal part of the liver was larger than ventral in sheep (Pareek, 2000) and in Marwari goat (Bamaniya, 2016). The average width of the liver at dorsal, middle and ventral aspect were 29.56±0.63 cm, 26.66±0.28 cm and 30.66±0.40 cm, respectively.

Thickness

The average thickness of caudate lobe, right lateral lobe, right medial lobe, left medial lobe and left lateral lobe of the liver were 1.63±0.057 cm, 1.93±0.093 cm, 1.52±0.032 cm, 1.28±0.096 cm and 1.50±0.037 cm, respectively. The right lateral lobe was thickest lobe. Miller (1965) described that the average dorso-ventral thickness of liver of dog was 6 cm.

Volume

The volume of the liver varied from 458-504 ml with an average of 484.16 ml. whereas the average volume of liver in

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Fig. 1: Measurement of length and width

Marwari goat was 381.3 ml (Bamaniya, 2016).

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