Available online at www.ijpab.com

DOI: http://dx.doi.org/10.18782/2320-7051.5555

ISSN: 2320 – 7051

Int. J. Pure App. Biosci. **5 (4):** 755-757 (2017)

Research Article

International Journal of Pure & Applied Bioscience

OPEN ACCESS

Morphometry of Spleen in White Yorkshire Pig (*Sus scrofa)*

Nikhil Shringi[1], Rakesh Mathur[2], Kavita Rohlan[3], Vikas Kumar[3] and Subha Ganguly[4*]

[1]Teaching Associate VUTRC, [2]Professor (Retd.), Department of Veterinary Anatomy and Histology, College of Veterinary and Animal Science, Rajasthan University of Veterinary and Animal Sciences, Bikaner - 334001, Rajasthan, India

[3]Assistant Professor, Department of Veterinary Anatomy and Histology,

[4]Associate Professor, Department of Veterinary Microbiology, Arawali Veterinary College (Affiliated to Rajasthan University of Veterinary and Animal Sciences, Bikaner), N.H. – 52 Jaipur Road, V.P.O. Bajor, Sikar – 332001, Rajasthan, India

*Corresponding Author E-mail: ganguly38@gmail.com

Received: 19.08.2017 | Revised: 27.08.2017 | Accepted: 28.08.2017

ABSTRACT

The present study was conducted on 6 apparently healthy adult Large White Yorkshire pig (Sus scrofa) of either sex. For the gross anatomical studies the measurements for various physical parameters like weight, length, width and volume were carried out. The correlation between each parameter was calculated at 1% level of the significance for conclusion.

Key words: *Anatomical parameters, White Yorkshire pig*

INTRODUCTION

Yorkshire**,** also called 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. Large White swine can be distinguished by their long, bony legs, erect ears, long length, overall large frame size, white color and pink skin. For this to understand the real worth of this animal and explore the productive potential for criteria of adaptability as well as to elucidate some physiological mechanisms in the Large White Yorkshire breed of pig and establishment of their own norms becomes very important in the field of veterinary science[1].

MATERIALS AND METHODS

The present study was conducted on 6 apparently healthy adult Large White Yorkshire pig (*Sus scrofa*) of either sex. The spleens of the freshly slaughtered animals were procured from Municipal slaughterhouse, Bikaner. For the gross anatomical studies the measurements for various physical parameters like weight, length, width and volume were carried out. Weight was taken with the help of electric weighing balance, volume was measured by water displacement method by measuring cylinder and length and width were measured by measuring scale at the widest portion of the organ.

Cite this article: Shringi, N., Mathur, R., Rohlan, K., Kumar, V. and Ganguly, S., Morphometry of Spleen in White Yorkshire Pig (*Sus scrofa*), *Int. J. Pure App. Biosci.* **5(4):** 755-757 (2017). doi: http://dx.doi.org/10.18782/2320-7051.5555

Thickness was measured by vernier calipers at three different regions. The correlation between each parameter was calculated at 1% level of the significance for conclusion.

RESULTS AND DISCUSSION

Measurements

i) Weight

In present study, the average spleen weight was recorded as 128.55± 4.764 g (**Figure 2**). On the contrary it was 350 g in pig according to Getty[2] while 1 lb. in camel Hegazi[3], 1 kg in ox and 1-1.2 kg in horse according to Raghavan[4], 100gm in sheep [2], 46-133 g in sheep [5] and 65-70 g in goat[6].

ii) Volume

During present study, the volume of spleen ranged from 119.8 ml to 150 ml with an average of 131.87 ml (**Figure 1**), whereas, the average volume of spleen in Marwari goat was 36.974 ml according to Devi[7].

ii) Length

The average length of the spleen was recorded as 29.15 cm at the longest portion with a range of 23.1 cm to 36 cm (**Figure 3**). On the contrary, it was 60 cm in pig according to Getty[1]. According to Nickel *et al*.[5] and Khan *et al.*[6] the length of the spleen was 9.4-12.4 cm in goat and 8.5 to 14 cm in sheep, respectively, whereas Awal *et al.*[8] reported the length of spleen to be 9.75 cm in indigenous sheep. Getty[2] and Raghavan[4] reported length of spleen as 50 cm in horse and ox.

iii) Width

The width of the spleen during this investigation in the pig was widest at the middle aspect than the dorsal and ventral aspects (**Figure 3**). The average width of the spleen at dorsal, middle and ventral aspects was 1.386±0.139 cm, 6.25±0.107 cm and 2.701±0.107 cm respectively, which was not in accordance to Getty[2] in pig, 8-10 cm. The width of the spleen at the widest place ranged between 4.2 cm to 7.3 cm as was described by Nickel *et al.*[5], Khan *et al.*[6] and Devi[7] in the Marwari goat. According to Awal *et al.*[9], the width was 6.91 cm in indigenous sheep.

iv) Thickness

The average thickness of the dorsal, medial and ventral aspect of spleen was 0.595±0.0301 cm, 1.213±0.063 cm and 0.448± 0.0151 cm respectively. Awal *et al.*[8] described that the average thickness of spleen of indigenous sheep was 0.810± 0.09 cm while Awal *et al.*[10] reported 1.85 cm in indigenous cattle.

Fig.1. Measurement of the volume of the spleen; Fig.2. Measurement of the weight of the spleen Fig.3. Measurement of the length and width of the spleen

REFERENCES

1. Islam, M.N. and Khan, M.A.B. Anatomy of spleen of indigenous sheep in Bangladesh. *The Bangladesh Vet*., **8(1-2):** 27-30 (1991a).
2. Getty, R. Sisson and Grossman's *The Anatomy of the Domestic Animals*, 5th ed. **I. 180:** 630-632, 1063, Vol.II. 1358, 1359, 1669, 1670. W.B. Saunders Company, Philadelphia (Toronto) (1975).
3. Hegazi, A.E.H. The spleen of camel compared with other domesticated animals and its microscopic examination. *J.Am. Vety. Med.Assoc*., **122:** 182-184 (1953).
4. Raghavan, D. *Anatomy of the ox*. 1st ed., pp.377-379. Indian Council of Agricultural Research, New Delhi (1964).
5. Nickel, R., Schummer, A. and Seiferle, E. *The viscera of the domestic mammals*. 2nd ed. pp. 204-210.Verlag Paul Parey, Berlin Hamburg (1979).
6. Khan, M., Baba Mushtak, A., Choudhary, A.R. and Mansoor, Mir. A comparative macroscopic study on the spleen of Musk deer and goat (*Capra hircus*). *Zoo's Print*, **221(8)**: 7-11 (2006).
7. Devi, H. Gross and histological studies on the spleen of Marwari goat (*Capra hircus*). *M.V.Sc. Thesis submitted to C.V.A.S., Bikaner* (2012).
8. Awal, M.A., Shahjahan, M., Islam, M.N. and Khan, M.A.B. Anatomy of spleen of indigenous sheep in Bangladesh. *The Bangldesh Vet*., **8(1-2):** 27-30 (1991*a*).
9. Awal, M.A.; Shahjahan, M. and Mia, A.K.M.A. Anatomy of the spleen of indigenous cattle (*Bos indicus*) in Bangladesh. *Prog. Agric*., **2(1):** 41-45 (1991*b*).
10. Awal, M.A., Shahjahan, M., Mia, A.K., Islam, M.N. and Khan, M.A.B. Histology of the spleen of indigenous cattle in Bangladesh. *The Bangladesh Vet*., **9(1-2):** 98-102 (1992).