**Gross and histological studies of crop and proventiculus of broiler (Cobb- 500) at different ages during their postnatal stages of development**



**A Clinical Report Submitted by**

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**Department of Anatomy and Histology**

**Chittagong Veterinary and Animal Sciences University**

**Chittagong-4225, Bangladesh**

**March, 2014**

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Gross and histological studies of crop and proventiculus of broiler (Cobb- 500) at different ages during their postnatal stages of development

**Abstract**

The study was based on the observation of anatomy and histology of crop and proventiculus of the digestive tract in postnatal growing broiler chickens with regard to their location, shape, size and weight. A group of five chickens, each at day 1 (D1), day 14 (D14),and day 28 (D28), were slaughtered; their digestive tracts were dissected and described; shape, size and weight of different segments of crop and proventiculus were recorded. Samples of crop and proventiculus were prepared and stained with Haematoxylin and Eosin staining technique to study the histology under light microscope. The average lengths and weight of crop, proventriculus, were significantly higher at D28 than that at D14 and at D1and number of mucossl fold higher at D1than that of D14,D28. Various layers of crop and proventiculus are lamina epithelia, lamina propria, lamina muscularis, submucosa, tunica muscularis and serosa which were same for all ages. The histological structure of the crop is similar to the oesophagus. The mucous glands are reduced in size and the lymphatic tissues are dispersed in the connective tissue. There is a thin stratum of smooth muscle and two wider layers of longitudinal and circular musculature in crop. The lining epithelium of the crop was keratinized stratified squamous epithelium which was thicker in the broiler at D28 than that at D14 and at D1. The proventricular mucosa of the papilla is arranged into folds (plicae) and depression (sulcus), also covered by columner cells. There were also a primary duct lined by columner cells joins the lumen of the proventiculus.Submucosa of the proventriculus contains loose connective tissue, tunica muscularis containing smooth musle.The proventicular glands were more in number and the size of the glands were larger in D28 than that of D14, D1.

**Keyword:** Gross anatomy, Histology, Crop, Proventiculus, Post natal development, Broiler (Cobb-500).

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