

## **Prenatal Development of Heart and Great Vessels in Buffalo (*Bubalus bubalis*)**

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**Abstract :** The present investigation was made on 35 Indian buffalo fetuses ranging from 0.9 cm to 104 cm curved crown rump length (CVRL). The gross anatomical study revealed that all structures were developed at 13 cm CVRL (87 days) in group I. At 0.9 cm CVRL (32 days) the heart was unseptated and tubular and was clearly divided into common atrial chamber dorsally and primitive ventricle in 1.2 cm CVRL fetus (34 days). Septum primum appeared at 1.9 cm CVRL (37 days), truncal ridges at 2.5 cm CVRL (39 days) and foramen ovale in 3.0 cm CVRL (42 days) buffalo foetuses. At 7.6 cm CVRL (62 days) endocardial cushions fused to form left and right atrioventricular openings and four chambered heart was formed in 8.7 cm CVRL (66 days). Endocardium and epicardium was thicker in atria as compared to ventricles in all the age groups. Myocardium of atria was thin as compared to ventricles in all the age groups and was loosely arranged. Immature hyaline cartilage was first appeared at base of aorta in 62 cm CVRL (213 days) fetuses. Intercalated discs were seen in group III and aorta, pulmonary artery, coronary artery were well appreciated in 3.2 cm CVRL (43 days). Neutral and acid mucopolysaccharides were comparatively more in atria than ventricles. Basic proteins showed strong reaction in atrium and ventricle, and intense in conduction system. Lipids and phospholipids were more in myocardium and conduction system than endocardium and epicardium. All the histochemical moieties were comparatively more in tunica intima than media and adventitia of all the great vessels of heart.

**Keywords :** buffalo, fetal development, histochemistry, heart

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