Developmental changes in the morphology and histochemistry of the phallus of Pati duck (*Anas Platyrhynchos*) of Assam

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Abstract

Phalluses of male Pati duck at different stages of post-natal development were studied to observe the changes in morphology and histochemistry. Study of the gross anatomy was done by direct examination; histology using HnE stain along with four other special stains and histochemical study was done to localize Alkaline Phosphatase, AcPase and ATPase enzymes. The base of the phallus was attached to the ventral floor of the cloaca which coiled in anti-clockwise direction towards the apex. The ejaculatory groove and sulcus ran along the length of phallus and divide the shaft into two lateral bodies which ends at the tip of apex. The phalluses were long, thick at the base with tapering coiled end and the length increased with age. The tubular phallus had narrow lumen with mucosal wall lined by non-keratinized stratified squamous epithelium. A layer of connective tissue consisted of numerous large lymphatic spaces was observed to be present in the entire circumference. The outer surface of the Phallus was lined by keratinized stratified squamous epithelium with numerous fibroblasts. Tubuloacinar glands and duct were observed in the connective tissue beneath the epithelium. Intense ALP activity, Strong and moderate activity of AcPase and intense activity of ATPase in the keratinized stratified squamous epithelium with weak activity in other area.

KEYWORDS: Avian, Pati duck, Phallus, Morphology, Histology, Histochemistry

CONCLUSION

The phallus of Pati ducks is an intromittent organ that serves as copulatory organ. Pati duck are among the 3% avian species that possessed the intromittent phallus. The study of phallus morphology provides groundwork in understanding the reproduction of avian species especially the transportation of semen during copulation in male reproductive tract which may help in advancement of artificial insemination method in these avian species

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