



Morpho-Functional Structure of the Organs of the Reproductive System of Ostriches

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Abstract: The reproductive organs of ostriches include the oviduct and ovary. The oviduct is a tube-shaped organ in which the maturation and fertilization of the egg, the formation of tertiary egg membranes (protein, shell membranes, shell, shell membrane), the early stages of embryonic development of the embryo. The oviduct is located in the left half of the abdominal cavity, suspended on the ventral and dorsal ligaments from the fourth rib to the cloaca.

Key words: Morpho-functional, structure, reproductive system, ostriches.

I. Introduction

According to morphological features and physiological functions, the oviduct is divided into five sections: funnel, protein section, isthmus, uterus, vagina.

The wall of the oviduct of a mature laying hen is formed by mucous, muscular and serous membranes.

The mucous membrane of the oviduct consists of the integumentary epithelium and its own plate, formed by loose connective tissue. In the integumentary epithelium, ciliated and goblet cells are distinguished. The mucosal surface is folded. The submucosa is not developed.

The muscular coat is represented by smooth muscles, which consists of two layers: the inner - annular, the outer - longitudinal. Thickens in the caudal direction.

The serous membrane consists of a thin layer of connective tissue covered by a single layer of squamous epithelium.

The blood supply to the ovary is carried out by the ovarian, sciatic and internal iliac arteries. The anterior, middle and posterior ovarian arteries branch off from them. They enter the oviduct at different levels and branch out in its wall, after which they gather into several veins extending from different parts of the oviduct

The oviduct is innervated by the autonomic nervous system. The branches of the sympathetic nerves go to the oviduct from the ovarian and some other plexuses. Parasympathetic innervation is mainly carried out by the pelvic internal nerve.

Funnel -the anterior part of the oviduct, which opens with a wide bell into the region of the ovarian package. On the basis of morphofunctional features, they are divided into funnel proper and its neck.

Actually the funnel is thin-walled, cone-shaped, open towards the ovary.

The edges of the funnel are equipped with fringes - fimbriae. The mucous membrane forms small irregular folds that do not contain glands.

The expansion of the funnel passes into a narrower tube - the neck of the funnel, about 12 - 14 cm long.

The walls of the funnel at the mouth are thinned and somewhat protruded, they form, as it were, her lips, which are connected to the abdominal wall by muscle ligaments. Thanks to these ligaments, the funnel can move forward and move back, capturing the egg from the yolk pocket after ovulation.

The mucous membrane of the funnel has longitudinal folds that form small secondary folds, the mucous membrane of which is covered with cuboidal or cylindrical epithelium with cilia.

At the bottom of the folds, simple tubular glands lined with cuboidal epithelium open.

There is no clear division into layers in the muscle membrane. The muscular coat is well expressed, the circular layer is more compact, its specific volume is greater than the volume of the longitudinal layer.

Protein department- the longest and widest section of the oviduct, in which protein is formed.

The composition of the integumentary epithelium of the protein section includes three types of cells - ciliated, goblet, protein-secreting.

Isthmus -the part of the oviduct in which the shell membranes are formed. The isthmus has a small diameter and length, but a thicker layer of circular muscles. In appearance and histological structure, the isthmus is very similar to the protein section. The folds of the mucous membrane of the isthmus are longitudinal.

The caudal isthmus is pink, which is associated with its vascularization. The cover epithelium is low. Ciliated and goblet cells are found in equal numbers.

The glands in the isthmus are tubular and unicellular, consisting of cubic epithelium, located loosely, their diameter is larger. The secret in the lumen of the glands forms filamentous structures of keratinoid proteins, which are used to build shell films.

The muscular and serous layers are similar to the protein department.

Uterus-the widest sac-like part of the oviduct. The uterus has a short, narrow anterior and a sac-like posterior.

In ostriches, the color of the uterus is pink due to intensive blood circulation. The mucous membrane of the uterus is collected in numerous longitudinally oriented leaf-like folds, on which there are secondary folds. Their height is greater than in other sections of the oviduct, but they are thinner.

In the integumentary epithelium of the uterine mucosa, apical and basal cells are distinguished. Basal cells contribute to the formation of the shell membrane.

In the muscular membrane of the uterus, the inner circular and outer - longitudinal layers are distinguished. Before passing into the vagina, the uterus narrows, forming a utero-vaginal joint or cervix 6-12 cm long.

Vagina- the last section of the oviduct. It is a muscular tube. The wall thickness is from 0.5 to 1.5 cm, with 90% of the muscular layer, in which the annular and longitudinal layers are well developed.

The mucous membrane of the vagina forms narrow longitudinal folds, on which there are secondary folds covered with highly prismatic epithelium with a predominance of ciliated cells. The mucosal lamina itself is formed by a dense, unformed connective tissue that does not contain glands.

In the vaginal mucosa proper, tubular glands are located, which are lined with a single-layer cuboidal epithelium.

The egg quickly passes through the vagina, almost without touching its walls.

However, there is evidence that the integumentary epithelium of the vagina is involved in the formation of the shell membrane. Both cells of the integumentary and glandular epithelium are involved in the formation of the supershell layer.

Ovary- the place of formation of yolks - egg cells enriched with nutrients.

In the initial stage of embryonic development, the right and left ovaries are formed, but later on the right ovary and the right oviduct gradually lag behind in growth and are reduced. In adult birds, only the left ovary and oviduct fully develop and function. Sometimes right-sided genitals can also be developed.

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