RESEARCH ON SHEEP KIDNEY HISTOLOGICAL STRUCTURE

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Abstract: *Differential renal parenchyma into two distinct Areas: the cortex and medulla the. Cortical area is located in the external capsule, known as renal cortex is composed of: the narrow area adjacent to the renal capsule, called cortical area, corticis subcapsular or cortex; Called cortical area the labyrinth That is the cortical portion of the pyramids Ferrein; Bertin renal cortical columns That has extensions Between renal tissue is adjacent pyramids.*

The area contains cortical kidney renal corpuscles, distal convoluted tubules, proximal convoluted tubules. The area surrounded by the renal cortex is the medullary cortical areas and the layout of the pyramids Malpighi is uniform. The gap is made up of renal tissue rich in cells that CAN BE distinguished: fibroblasts, pericytes mononuclear bone marrow Located in the loops along the Henle, Vessels That supply. There is interstitial bone marrow Located in the cells Which is made up of cytoplasmic extensions That capillaries and tubules extend to the medulla. Located in Renal corpuscles have kidney and renal cortical columns HAVING relatively spheroidal aspect.

Proximal tubule nuclei have unequal compared to distal tubule arrangement has Numerous nuclei, WILLING equidistant. Medullary conical or pyramidal area consists of structures with aspect Called renal pyramids or pyramids Malpighi targeted to the renal hilum top and the base is directed Towards the cortex. The base of each pyramid to start overtime Malpighi tubules just look Entering the renal cortex and has Ferrein Called pyramids.

Cortical collecting tubules has papered of a simple cubic epithelium Which comprises two types of cells: clear cells that have the principal or many, have round nuclei and cells interspersed centrally located and dark, with cytoplasmic vesicles Numerous rare localized in the apical area. Medullary tubules collectors show columnar cell wall composed of small renal papilla cells and the level is high.

Keywords: *renal parenchyma, renal columns, Ferrein pyramids, pyramids Malpighi*

MATERIAL AND METHODS

Research on the kidney's histological structure were performed on histological to continuous from the renal parenchyma at the age of 9 months sheep. Histological specimens were prepared as follows: 10% formalin fixing, paraffin embedding and sectioning inclusion microtome.

Large sections were stained on slides after staining following methods: hematoxylin eosin, hematoxylin eosin methylene blue staining and Mallory. Histological preparations obtained were examined by light microscopy Labophot type 2 shooting device equipped with Nikon DX AFK-making photomicrographs.

RESULTS AND DISCUSSION

On histological examination it is noted that renal parenchyma differentiate into two distinct areas namely the cortex and the medulla (Figure 1). In the renal cortex observed cortical area consists of the cortex or cortex subcapsular corticis labyrinth renal cortical columns Bertin(Figure2).According to the literature, the meddular zone is made up of conical

or pyramidal structures with aspect called renal pyramids or pyramids Malpighi. From the base of each pyramid Malpighi start looking for straight tube extensions, which penetrate renal cortical and are called pyramids Ferrein (Figure 3).Renal pyramids conical or pyramidal structures are oriented toward the base to the tip of the capsule and the renal hilum.

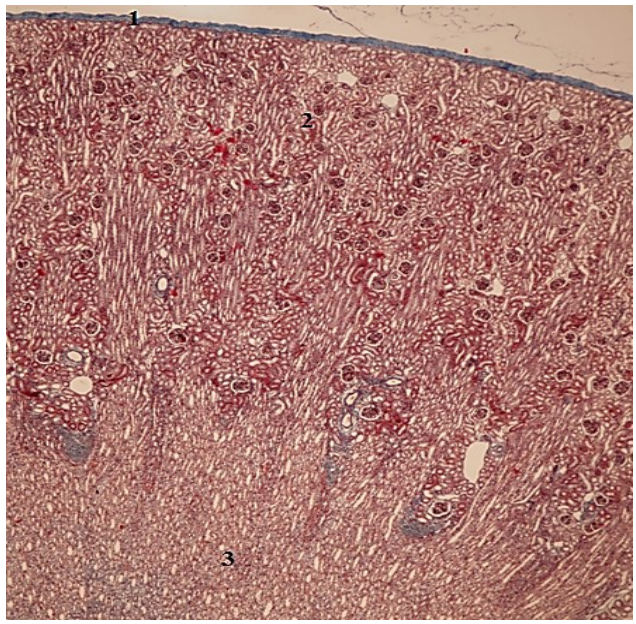

Figure 1. Histological structure kidney, Mallory stain, ob.4x.
1-the capsule; 2-cortical area; 3-medulla area

Proximal convoluted tubule is the longest segment of the nephron, being located in cortical labyrinth. It is coated by a single layer of epithelial cells, cubic or prismatic protruding microvilli conducting brush border.

On cross sections, proximal convoluted tubules shows 5-6 centrally located nuclei. At the apical pole of these cells are present ducts at the base of microvilli, pinocytosis vesicles, lysosomes merging with realizing complex role in endocytosis with low protein absorption.
Show a distal convoluted tubule lumen wider than proximal convoluted cells are smaller and less high acidofile weak(Figure 4).

Distal convoluted tubules significant differences proximal convoluted tubules compared namely the apical pole no brush border, nuclei are more cross-sectional surfaces and tubule lumen diameter and is larger than the proximal convoluted tubule.

The front of the tube distal convoluted shows a close association with glomerular afferent arteriole and efferent in the vascular pole of the renal glomerulus and the wall undergoes changes that achieve dense macula, part of the juxtaglomerular apparatus.

The collecting tubules are: cortical collecting tubule which are along the labyrinth pyramids Ferrein and medullary cortex and the collecting tubules which join together and form of the papillary channels, the urine drained by the tip of renal papilla, and then potassium basin.

Cortical collecting tubules are papered of a simple cubic epithelium which comprises two types of cells: the principal or clear cell and intercalated cells or dark cells.
The main cells or cells are numerous and show clear round centrally located nuclei.

Interleaved or dark cells, containing many rare and cytoplasmic vesicles located within the apical. Medullary tubules collectors show columnar cell wall composed of small renal papilla cells and the level are high with little organelles in the cytoplasm.

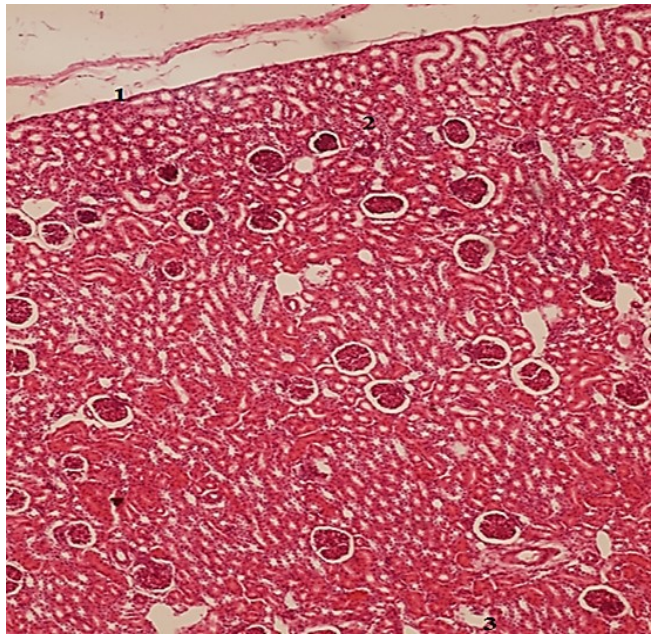

Figure2. Histological structure kidney-overview,
HE staining, ob.10x
1-the capsule; 2-cortical area; 3-medulla area.

Renal corpuscles present a vascular pole, consisting of arteriole efferent and afferent arteriole and urinary pole in the area of origin of the proximal convoluted tubule where parietal foil portion continues with proximal convoluted tube.

Podocytes are squamous epithelial cells that form the visceral layer of Bowman capsule.The cytoplasm of these cells show Golgi complex abundant mitochondria and RER rare underrepresented. Podocytes are heavily modified, presents a more complex form of overtime or primary processes, branching andforming secondary processes known pedicle surrounding the glomerular capillaries.

Podocytes were instrumental in phagocytosis and basement membrane regeneration.

The renal glomerulus is comprised of a cluster of capillaries that form vascular capillary mat located within the Bowman's capsule.The structure can differentiate glomerular endothelial cells that form the lining of the capillary. Preferring presents a fine and cytoplasm contains large fenestration.

The basal membrane is located between endothelial cells and podocytes. It is thick and contains three distinct areas: foreign rare lamina adjacent epithelium of foot; Lamina is an area thick dense, rich in type IV collagen fibers; domestic rare capillary endothelium adjacent lamina.

Mesangial interstitial tissue is present between glomerular capillaries. In its structure enters mesangial cells and extracellular matrix developed by these cells.

Mesangial cells present cytoplasmic extensions that protrude into the lumen through the endothelial cells. They provide support to podocytes where the basement membrane is missing or incomplete. They are also involved in phagocytosis large protein molecules.

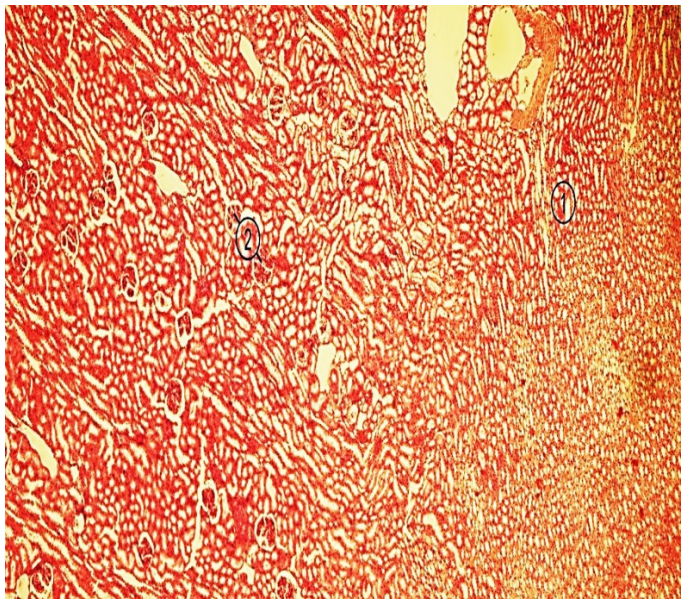

Figure 3. Section through the kidneys, HEstaining , ob.4x.
the cortex and the medulla:
1-Tubes straight; 2-Malpighi pyramids.

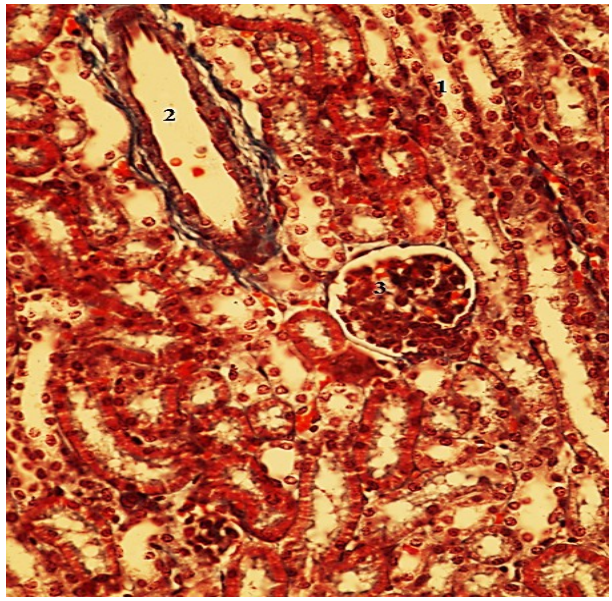

Figure 4. Kidney-cortical area, Mallory staining, ob. 20x
1-tubules collectors; 2 blood vessel; 3-renal corpuscle.

Renal corpuscle circumscribed formation, which is found in cortical labyrinthine zone. Renal corpuscles consists of two components: Bowmann capsule wall made of double epithelial and vascular glomerulus consists of a ball of capillaries (Figure 5).

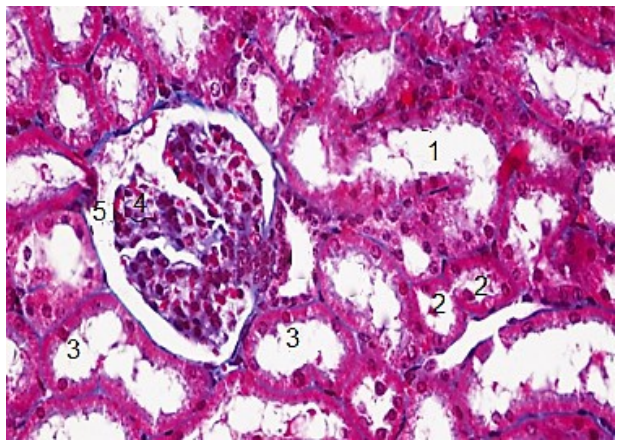

Figure 5. Kidney sections staining Mallory-cortical area,ob.40x;
1-tube collector; 2-proximal convoluted tubules;3-distal convoluted tubules; 4-renal corpuscle; 5-Bowman capsule

Bowmann capsule is the initial portion of the nephron, which delimits the renal glomerulus. It has a double wall showing two skins: an external parietal foil and visceral internal foil. External parietal foil bounding renal corpuscles and presents simple squamous epithelium. Wrap foil internal visceral glomerular capillaries consisting of glomerular epithelium, simple squamous amended, consisting of podocytes (Figure 6).

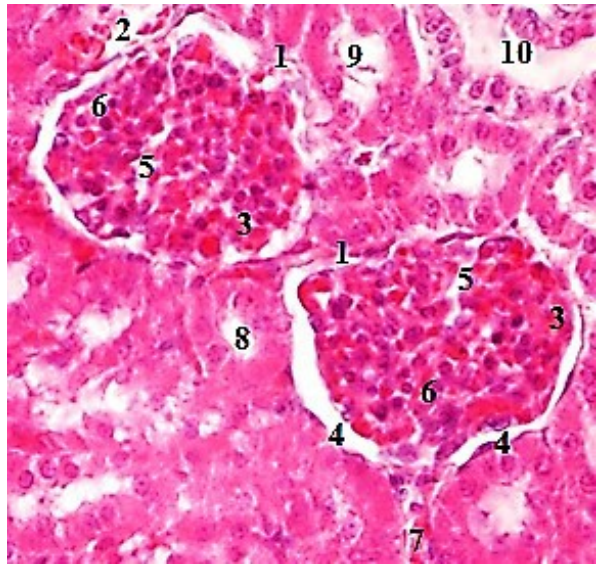

Figure 6 Parenchymal renal cortical area,HEstaining ob.40x;
1-renal corpuscle; 2-Bowman capsule; 3 glomerulus vascular; 4-podocytes; 5-glomerular capillary; 6- cell mesangial; 7-arteriole; 8- proximal convoluted tube; 9-distal convoluted tubules; 10-tubules collectors.

CONCLUSIONS

1. Cortical and medullary area of the two kidneys appears normal limits and stains used have revealed structures that traverzează two areas.
2. Glomeruli occurred to normal size, clutter inside the capillary vascular capillaries that make up ghemeul arranged inside the capsule Bowman.
3. The region of Bowman capsule constitutes the initial portion of the nephron and limit the renal glomerulus is formed by a double wall.
4. Malpighi pyramids were characterized by the conical structure of the base facing the inner periphery presenting mesangial cells which act as support for the glomerular capillaries.
5. In the proximal convoluted tubule nuclei were identified with the level of which appear uneven arrangement which carries brush border microvilli.
6. Distal convoluted nuclei consists of many and has a wider lumen compared to the proximal convoluted tubule.
7. Tubii collectors cortical are papered of a simple cubic epithelium which comprises two types of cells: the principal or clear cells are numerous, have round nuclei and cells interspersed centrally located and dark, with numerous rare cytoplasmic vesicles located within the apical .
8. Tubii collectors marrow wall composed of columnar cells shows small renal papilla cells and the level are high with little organelles in the cytoplasm.

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