NEPHROLITHIASIS IN CATTLE

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Urolithiasis is a nosological term used for the characterization of diseases arising from the formation of concrements in the organs of the urinary system and is classified according to the anatomical localization, namely: namely: nephrolithiasis (kidney stones), ureterolithiasis (ureters), cystolithiasis (bladder), urethrolythiasis (urethra).

Urolithiasis is registered in different species of animals (minks, dogs, cats, cattle, sheeps, etc.) and human. The formation of uroliths occurs due to the crystallization of inorganic or organic components of urine, which accumulate in the form of amorphous deposits. Urolithiasis causes significant economic damage to cattle which consume highly concentrated feed. So, excessive protein nutrition contributes to the appearance in the urine of low molecular weight peptides with a large ion-binding potential, which quickly forms urine sediment. There is a close connection between the composition of urinary stones and the type of feeding. Therefore, studies of the frequency of nephrolithiasis in slaughter animals (cattle) are relevant.

The kidneys examination of cattle was carried out in a slaughterhouse. Kidney sampling were taken from 43 heads (11 bulls and 32 cows) of the Ukrainian black-and-white breed aged 18 months to 5 years. The kidneys were examined from the outside and on the incision (transverse and longitudinal) to identify non-prolithic. The localization of kidney stones, their size, mass and color were determined.

The results of the study revealed the presence of stones in the kidneys in two cows. Has about 4.7 % of the total number of slaughtered animals.

Macroscopic analysis of the affected kidneys revealed localization of uroliths, which were located mainly in the ureter, and in one of the kidneys and in the renal cup. The shape, size and weight of urinary stones were differed. The individual uroliths were large and solid, others were small food-like ones. Size ranged from 0.2 mm to 13 mm. Externally, they had a smooth or rough surface. The color ranged from light gray to light brown. Cysts were recorded near the nephroliths in the studied kidneys,.

The analysis of concretes showed their mixed composition (calcium oxalate, magnesium phosphate, calcium phosphate and ammonium urate), which is similar to the results of other researchers (Ahmad Oryan, Shahrzad Azizi, Reza Kheirandish & Mohammad Reza Hajimirzaei, 2015), which is agreement with the hypothesis of the diversity of the urolith composition cattle.

Thus, nephrolithiasis is recorded in cattle of different ages and has an appropriate localization (ureters, kidney calyx).