



## DIAGNOSTIC IMAGING OF URINE RETENTION AND SUBSEQUENT HYDRONEPHROSIS IN GOAT.

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### ABSTRACT

Healthy male goats (n=20); aged from 8 months to 4 years and weighing from 15 to 25 kg were divided into four equal groups. Group A (Control animals), group B (animals operated for induction of urine retention via urethral ligation), group C (animals operated for induction of urine retention via bilateral ureteral ligation) and group D (animals operated for induction of urine retention via unilateral ureteral ligation). Clinical observations, blood urea and creatinine analysis and ultrasonographic, radiographic and computed tomography (CT) examinations were performed for each group before and after induction of urine retention. Ultrasonographically, Hydronephrosis was classified into functional dilatation (recorded slightly in the opposite non legated kidney in case of unilateral ureteral ligation), dilatation with stasis (as a result of urine stasis), mild hydronephrosis (as result of back pressure of the urine on renal parenchyma) and severe-advanced hydronephrosis (due to advanced continuous back pressure over long period). The four stages were recorded in case of unilateral ureteral ligation while in cases of urethral and bilateral ureteral ligation severe advanced hydronephrosis wasn't recorded. It was found that, urine retention in group B and C was very dangerous which characterized by rapidly onset and seriously developed renal and blood alterations with to threat the animal life. The present study provide Thorough knowledge of the cross sectional anatomy aided to achieve accurate interpretation of ultrasonography and CT, hence establish reference standards for normal urinary tract organ's size, position and structure and compare it with the abnormal conditions.

**KEY WORDS:** Computed Tomography, Hydronephrosis, Ruminants, Ultrasonography

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### 1. INTRODUCTION

Small ruminant are hardy, highly prolific animals [34]. They are important in the production of meat, milk and skin; moreover their productivity may be threatened by urogenital abnormalities [15, 17]. Early diagnosis of any pathological condition is the first step towards the effective treatment of any diseased animals. Diagnostic Ultrasonography and radiography are considered as an integral part of all the methods available for early diagnosis [2]. Radiography and Ultrasonography complement each other in the diagnosis of renal diseases [6, 12, 13, 19, 24, 25, 31,

24]. They provide additional information to that obtained by physical examination and laboratory analysis [1]. Major advantage of ultrasound over radiography is that it is not hampered by the lack of retroperitoneal fat or the presence abdominal fluid or ingesta. It is non-invasive, faster; it has the ability to provide superior assessment of internal renal parenchyma architecture. In addition, it can be performed independent of renal function. It requires no ionizing radiation or contrast medium and it enables the assessment of neighboring structures [5, 12, 19, 21, 38]. Radiology (Excretory