

Uroabdomen in an Umblachery bull- A case report

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Abstract

A 4-year-old Umblachery bull was presented to the Large Animal Medicine Unit at the Veterinary Clinical Complex, Veterinary College and Research Institute, Orathanadu, with a 5-day history of abdominal distension, anorexia, anuria, and absence of defecation. Clinical examination revealed depression, dehydration, elevated respiratory rate, bilateral abdominal distension with fluid thrill. Trans-abdominal ultrasonographic examination revealed the presence of anechoic free fluid in the abdominal cavity. Ultrasound-guided abdominocentesis yielded a light yellow-colored modified transudate with a low specific gravity of 1.013 and a distinct ammonia odor. Haematobiochemical examination revealed PCV= 41.8%, WBC=10,300 cells/cumm, elevated blood urea nitrogen, creatinine and lactate levels. Peritoneal fluid showed increased levels of blood urea nitrogen and creatinine compared to that of serum levels. Based on ultrasonographic examination of abdomen and peritoneal to serum creatinine ratio, the case was confirmed as uroabdomen. The animal was administered with strepto-penicillin, flunixin meglumine and supportive fluid therapy but the animal died due to delayed presentation and uraemia.

Keywords: Umblachery Bull, Abdominocentesis, Uroabdomen.

Urine accumulation in the peritoneal and retro-peritoneal spaces usually associated with urolithiasis, urethral rupture and cystorrhesis. Bilateral distention of the ventral abdomen may develop within 1-2 days following cystorrhesis, and is typically accompanied by signs of depression, anorexia, weakness, dehydration, and shock. (Smith *et al.*, 1986). In acute bladder rupture, urine may flood the abdomen, yielding a low-protein transudate and develop sterile peritonitis which is non-septic. Uremia and dehydration may ultimately lead to the death of the animal. Uroabdomen commonly reported in male animals with water belly appearance and rarely occurs in females due to complication of dystocia. Uremia and dehydration is the common sequela of uroabdomen which leads to death of animal. This article describes a case of uroabdomen in Umblachery bull.

Case History and Observation

A four year old Umblachery bull was referred to the Large Animal Medicine Unit, Department of Clinics, Veterinary College and Research Institute, Orathanadu with the history of anorexia, dehydrated, anuria, achezia and severe bilateral abdominal distension (Fig1) for about five days. Congested conjunctival mucous membrane, enophthalmos and extremely dry muzzle and dry scanty faeces were noticed. Elevated pulse (128/min), respiratory rate (52/min), 99.8°F body temperature

and bilaterally distended abdomen with fluid thrill were appreciated. Mild elevation in total leukocyte count, elevated bicarbonate levels (34.5 mmol/L) and decline in partial pressure of oxygen (37 mmHg), serum fibrinogen level (9.9 g/L) were noticed (Table). The bull was administered with strepto-penicillin (@ 20,000 IU/kg b.wt. IM), flunixin meglumine (@ 1.1 mg/kg b.wt. IM), dextrose normal saline (@ 10 ml/kg b.wt. IV) and Ringer's lactate (@ 10 ml/kg b.wt. IV) for initial stabilization before surgery. The animal collapsed during surgical preparation for exploratory laparotomy to repair cystorrhesis.



Figure 1: Bilateral abdominal distension

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Table 1: Haemogram values of Umblachery bull with uroabdomen

HAEMOGRAM	VALUE	REFERENCE
Haemoglobin	12.6 g/dL	8.0-15.0 g/dL
Haematocrit	41.8 %	24-46 %
RBC	10.45×10^6 cells/ μ L	$5.1-7.6 \times 10^6$ cells/ μ L
WBC	14.3×10^3 cells/ μ l	$4.9-12 \times 10^3$ cells/ μ L

Table 2: Blood gas analysis of Umblachery bull with uroabdomen

BLOOD GAS	VALUE	REFERENCE
pH	7.55	7.35-7.50
pCO ₂	39.5 mmHg	35-45 mmHg
pO ₂	37 mmHg	56 mmHg
BE _{ecf}	12 mmol/L	± 2 mmol/L
Bicarbonate	34.5 mmol/L	17-29 mmol/L
TCO ₂	36 mmol/L	20-30 mmol/L
sO ₂	78 %	>94%
Lactate	3.05 mmol/L	0.56-2.22 mmol/L

Results and Discussion

The clinical signs found in the present case were in accordance with previous reports (Braun *et al.*, 2007; Saravanan *et al.*, 2024; Abdelaal *et al.*, 2016). Complication of cystorrhesis may lead to shift in the osmotic gradient leading to the movement of urine as well as extracellular fluid into the peritoneal cavity and may result in dehydration. Ultrasonography facilitated the detection of anechoic free fluid accumulation in the peritoneal cavity and further to rule out the condition from other abdominal affections. Metabolic signs associated with elevated blood urea nitrogen and creatinine levels were also cited by Sockett *et al.* (1986) and Ismail *et al.* (2018). Light yellow coloured modified transudate with pH 8, specific gravity 1.013 and urine smell lead this present case as a suspect for uroabdomen. The serum-peritoneal creatinine ratio in the present case was 3.2. The serum-peritoneal creatinine ratio and ultrasonography findings were important in the interpretation of the present case as uroabdomen. This observation correlated with Braun and Nuss, (2015), Saravanan *et al.*, (2024) and Ismail, (2018). Trans-abdominal ultrasonography revealed an accumulation of anechoic free fluid in the peritoneal cavity, extending to the level of the cranial abdomen, consistent with the findings of Venkatesakumar *et al.* (2019).

Conclusion

Uroabdomen in Umblachery bull diagnosed based on ultrasonographic findings, serum peritoneal and creatinine ratio is placed on record

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