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SURGICAL MANAGEMENT OF URINARY RETENTION IN THREE CAMELS (*Camelus dromedarius*)

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ABSTRACT

The clinical investigation of urine retention in 3 camels was carried out. Anuria was observed in all the cases. In one case, urethral rupture was clinically evident with the swelling and distension of sheath, perineum and latero-ventral aspect on either side of abdominal wall adjacent to sheath up to scrotum. In another two cases of suspected cystic or urethral calculi, clinical signs were manifested as prolonged act of urination keeping hind limb wide apart, repeated forceful attempts of voiding urine. Later on, animal showed physical discomfort by frequently sitting and getting up, lying in recumbency with paddling of limbs, frequent contraction of sheath, mild distension of abdomen and complete anuria. Per-rectal examination revealed distended and intact bladder. The cases of urine retention were treated by 3 surgical procedures which were used in combination to each other depending upon the case. The surgical procedures included Drainage of subcutaneous infiltrated urine from sheath and latero-ventral abdominal wall by multiple skin incisions, post scrotal urethrostomy with indwelling catheter and cystotomy with catheterisation.

Key words: Anuria, camels, cystotomy, urethrostomy, urine retention

Retention of urine in camel due to urethritis (Singh *et al,* 1983), pressure of saddle (belly) strap on the anterior part of sheath obstructing urine flow (Purohit *et al,* 1984), urethral calculi (Kock, 1985; Choudhary *et al,* 1995), silica uroliths (Gutierrez *et al,* 1999), prepucial abscess (Gahlot *et al,* 2007) and cystic calculi and fibroma (Gahlot *et al,* 1995). Significant rise in blood urea nitrogen and serum creatinine values is reported in such cases (Singh *et al,* 1983; Choudhary *et al,* 1995). Obstructive urolithiasis was treated either by medicinal management (Bhadwal and Sudhan, 2000) or surgical management which involved drainage of sheath and latero-ventral abdominal wall by multiple stab incisions on skin (Tanwar, 2011), postscrotal urethrostomy with indwelling catheter (Choudhary *et al,* 1995; Gahlot *et al,* 1995). Performed and (Purohit *et al,* 1984) observed that partial penectomy along with castration helped in recovery of the patient. According to Singh *et al* (1983) administration of xylazine to achieve analgesia for surgery increased the metabolic alkalosis and also caused respiratory acidosis. Urine retention was observed in 3 male camels in the present study which is reported here.

Case History and Clinical Evaluation

Anuria was observed in all the 3 cases. Animals were dull, depressed and anorectic. In one case history of sand masturbation was also reported.

In one case, urethra was ruptured which subcutaneous infiltration of urine. Clinical examination revealed swelling and distension of sheath, perineum and latero-ventral aspect on either side of abdominal wall adjacent to sheath up to scrotum due to subcutaneous infiltration of urine (Figs 1A, 1B).

In 2 cases, cystic or urethral calculi were suspected. Clinical signs were manifested as prolonged act of urination keeping hind limb wide apart, repeated forceful attempts of voiding urine and external preputial opening remain stained with viscous urine drops. Later on, animal showed physical discomfort by frequently sitting and getting up, lying in recumbency with paddling of limbs, frequent contraction of sheath, mild distension of abdomen and complete anuria. Per-rectal examination revealed distended and intact bladder.

Surgical Management by Different Techniques

The cases of retention of urine in dromedary camels were treated by 3 surgical procedures viz (1) Drainage of subcutaneous infiltrated urine from sheath and latero-ventral abdominal wall by multiple skin incisions, (2) Post scrotal urethrostomy with indwelling catheter and (3) Cystotomy and catheterisation.

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Drainage of subcutaneous infiltrated urine from sheath and latero-ventral abdominal wall by multiple skin incisions

The camel was secured in lateral recumbency. The swollen area at sheath and latero-ventral abdominal region was aseptically prepared and painted with 2.5% tincture of iodine. Two vertical stab incisions were given on either side of sheath where swelling was maximum (Fig 1C). The underlying tissue was separated with fingers till escape of infiltrated urine commenced. The wounds were kept protected by multi tail cotton cloth around abdomen. Post-operatively, ammonium chloride was given at the rate of 40gm per day orally for 5 days. Oxytetracycline 1500 mg intravenously for 7 days and phenylbutazone 3000 mg, intramuscularly for 3 days were administered. Normal urine flow was resumed on 4th day of treatment and swelling subsided.

Post scrotal urethrostomy with indwelling catheter

Pre-operatively, camel was treated for 2 days with 10 litres normal saline, 5 litres 5% dextrose and ringer's lactate being administered intravenously. ammonium chloride 40 gm orally per day along with oxytetracycline 1500 mg intravenously and phenylbutazone 3000 mg, intramuscularly were administered. The camel did not respond to the

Fig 1. (A) A case of ruptured urethra in camel showing swelling and distension of lateroventral aspect of abdominal wall adjacent to sheath on either side due to subcutaneous infiltration of urine (arrows). (B) A case of ruptured urethra in camel showing swelling due to subcutaneous infiltration of urine up to scrotum. (C) Two stab incisions given on either side of sheath (arrows) the drainage of infiltrated urine. (D) Indwelling catheter transfixed to the stump of penis (arrow).

treatment. Post scrotal urethrostomy was performed in camel under epidural anaesthesia using 2% lignocaine hydrochloride. A 4-5 cm long incision was given at the post scrotal site between scrotum and anus and sigmoid flexure was exteriorised. Partial penectomy was performed at the level of sigmoid flexure. The distal penile stump was ligated using silk suture material. The urethra was split upto 1-3 cm length of the proximal penile stump and a 10-12 cm long indwelling catheter was introduced and transfixed with simple interrupted silk sutures. The newly created penile stump was transfixed at lower commissure of incision with stay suture. The skin incision was closed with simple interrupted suture with silk (Fig 1D). A retrograde hydropulsion was done with normal saline to ensure restoration of urine flow. The indwelling catheter was removed after 10 days and skin suture after 12 days. Postoperatively, oxytetracycline 1500 mg was given intravenously for 7 days and phenylbutazone 3000 mg, was given intramuscularly for 3 days. Normal urine flow was resumed in one camel after surgery. Another camel did not show any improvement after post scrotal urethrostomy and was further treated for cystotomy with temporary catheterisation.

Cystotomy and temporary catheterisation

Cystotomy and temporary catheterisation was performed in camel secured in sternal recumbency under epidural anaesthesia. Left flank region was aseptically prepared and painted with 5% povidone iodine. Local infiltration anaethesia with 2% lignocaine hydrochloride was achieved and a 6 to 8 cm long incision was given on left flank. After incising abdominal muscles and peritoneum bladder was located in the abdominal cavity. Foley's catheter was inserted into the bladder to drain urine. Balloon was inflated with air and the catheter was secured by placing purse string suture (Fig 2). The abdominal incision was closed in 3 layers with continuous sutures using absorbable suture. Post-operatively, ammonium chloride was given 40gm orally per day for 3 days. Oxytetracycline 1500 mg intravenously and phenylbutazone 3000mg intramuscularly were administered. The animal did not respond to treatment and died on 3rd day.

Discussion

Urine retention is common in camels with a history of sand masturbation and/or suspected uretheral or cystic calculi. In present study, effective medication to control infection, inflammation and pain with early surgical management and sufficient rest brought quick and better recovery. Bailey (1967) found urinary calculi in calves given a ration associated with the formation of siliceous calculi. However, no calculi were found in a similar group of 14 calves given the same ration with 4% sodium chloride that prevented calculus formation by increasing water intake and urine volume with a consequent reduction in the concentration of silicic acid in urine.

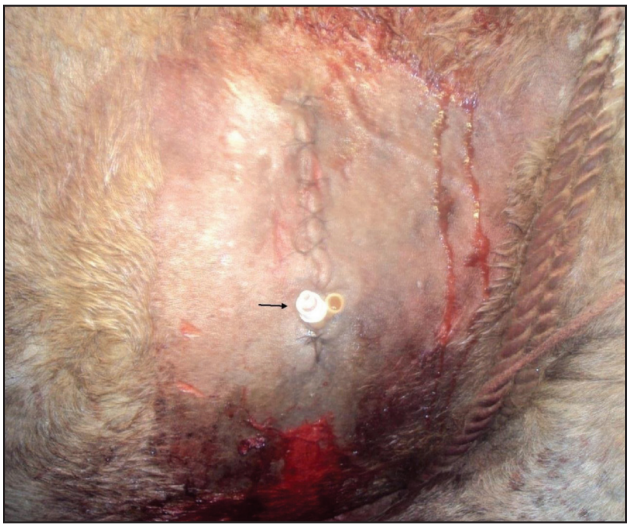

Fig 2. Foley's catheter placement (arrow) through skin suture for drainage of urine

According to Parrah *et al* (2011), cystostomy with Foley's catheter was found to be a less time consuming procedure than tube cystostomy with simple catheters. The reason for this could be the longer time required for anchoring the catheter with the cystic wall and the abdominal body wall, while no such procedure was required for the Foley's catheter.

Tube cystostomy was reported successful in small ruminants (Ewoldt *et al,* 2006), but not widely used in camels. This technique provides an alternative surgical technique in the management of obstructive urolithiasis. Although, tube cystotomy needs to be evaluated in more clinical cases of camels.

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