Bloody vaginal discharge in a goat with an endometrial stromal polyp

A. ELJARAH, G. SOD, M. GILL, S. LYLE, W. TAYLOR

From the Department of Veterinary Clinical Sciences, Faculty of Veterinary Medicine, Jordan University of Science and Technology, Irbid, Jordan (Eljarah) and Department of Veterinary Clinical Sciences, School of Veterinary Medicine, Louisiana State University, Baton Rouge, LA 70803, USA (Sod, Marjorie, Lyle) and Department of Pathobiological Sciences (Taylor)

ABSTRACT

A 9 year old mixed-breed doe was presented with reddish-brown mucoid vaginal discharge of 4 weeks duration. The doe we report here was used as a pet and has never been bred. On physical examination, the doe was alert and responsive. Her temperature was 39°C, heart rate 92 beats per minute, and respiratory rate 52 breaths per minute. A CBC revealed a decreased PCV (18%, reference range, 22-38%) and a leukocytosis (27 x 10^3/µL; reference range, 4 - 13 x 10^3/µL) with a mature neutrophilia (22.3 x 10^3/µl; reference range 1.2 - 7.2 x 10^3/µL). Serum biochemical analysis revealed hyperglycemia (211 mg/dl; reference range, 50 - 75 mg/dl) and increased creatine kinase (564 U/L; reference range, 104 - 219 U/L). There was evidence of a dried reddish-brown discharge in the perineal area. At the end of urination, the doe would continue to strain and pass blood and mucus. A reddish-brown discharge was observed on the floor of the vagina during vaginoscopic examination. Large numbers of neutrophils and macrophages were present on cytological examination of this discharge. Transabdominal ultrasonography of the doe using a 5-MHz sector array transducer identified a 15 x 20 cm round, hyperechoic mass in the area of the uterus and urinary bladder. Although the doe has never been bred, initial thought and consideration was giving to signs of being bred and getting aborted and all exams were a kind of puzzling. An interesting finding was the mass on ultrasound exam which arose the suspicion of tumor like lesion and how was reflected on urinary signs. Based on history, clinical findings, and concern of neoplasia, an exploratory celiotomy was scheduled. Abdominal exploration revealed a large mass within the body of the uterus. The decision to perform a complete ovariohysterectomy was made due to the likelihood that the mass was neoplastic and the owner had no desire to preserve the reproductive capacity of the doe. A diagnosis of endometrial stromal polyp was made, based on histologic examination of the abnormal mass.

KEY WORDS
Endometrium; goat; polyp; vaginal discharge.

CASE PRESENTATION

A 9 year old mixed-breed doe was referred with reddish-brown mucoid vaginal discharge of 4 weeks duration. On physical examination, the doe was alert and responsive. Her temperature was 39°C, the heart rate was 92 beats per minute, the respiratory rate was 52 breaths per minute. There was evidence of a dried reddish-brown discharge in the perineal area. At the end of urination, the doe would continue to strain and pass blood and mucus. A CBC revealed a decreased PCV (18%, reference range, 22-38%) and a leukocytosis (27 x 10^3/µL; reference range, 4 - 13 x 10^3/µL) with a mature neutrophilia (22.3 x 10^3/µl; reference range 1.2 - 7.2 x 10^3/µL). Serum biochemical analysis revealed hyperglycemia (211 mg/dl; reference range, 50 - 75 mg/dl) and increased creatine kinase (564 U/L; reference range, 104 - 219 U/L). Reddish-brown discharge was observed on the floor of the vagina during vaginoscopic examination. Large numbers of neutrophils and macrophages were present on cytological examination of this discharge. Transabdominal ultrasonography using a 5-MHz sector array transducer identified a 15 X 20 cm round, hyperechoic mass in the area of the uterus and urinary bladder (Fig. 1). Based on history, clinical findings, and concern of neoplasia, an exploratory celiotomy was scheduled. Feed and water were withheld for 24 and 12 hours, respectively, prior to surgery. Pre-operative therapy included procaine penicillin G (30,000 U/kg SQ; bid), ceftiofur hydrochloride (2.2 mg/kg SQ; sid), and tetanus antitoxin (750 U; IM). The doe was pre-medicated with xylazine (0.05 mg/kg; IM) and anesthesia was induced with diazepam (5 mg/ml) and ketamine (100 mg/ml) mixed in equal volumes and administered at the rate of 1ml/9 kg IV. Anesthesia was maintained with 2% isoflurane in oxygen. Abdominal exploration revealed a large mass within the body of the uterus. The decision to perform a complete ovariohysterectomy was made due to the likelihood that the mass was neoplastic and the owner had no desire to preserve the reproductive capacity of the doe. A diagnosis of endometrial stromal polyp was made, based on histologic examination of the abnormal mass.

Autore per la corrispondenza: Abdulhakeem Eljarah (eljarah@just.edu.jo).
Abdominal closure was routine. The uterus was opened and the mass, weighing approximately 2 kg, was submitted for histopathological examination. The tissue of the mass consisted of abundant proliferative endometrial stroma containing glands lined by well-differentiated, ciliated, pseudostratified columnar epithelium. Many of the glands were dilated and contained moderate to large amounts of mucus and cellular debris while some glands contained intraluminal accumulations of degenerate inflammatory cells (Figure 2). These histologic characteristics were consistent with endometrial stromal polyp (Figure 3).

Procaine penicillin G and ceftiofur were continued for 7 days following surgery. Pain was managed with epidural morphine (0.11 mg/kg, q 24 h) and butorphanol (0.11 mg/kg, SQ, q 6 h) for 3 days. Oxyglobin was administered post-operatively to address a further reduction of the PCV to 14%. Although the doe seemed to improve slowly during the first few days after surgery, it was apparent that urination was not normal. Concerns at that time included bladder atony and leakage of urine into the abdomen. Disruption of the innervation to the bladder could have been due to the pressure of the mass or iatrogenic trauma at the time of mass removal. Leakage of urine may have been through the dorsal surface of the bladder wall, which could have been weakened during mass removal. Repeated abdominal ultrasound examinations for several days after surgery revealed evidence of accumulation of fluid in the abdominal cavity and an abnormally distended urinary bladder. Several days after surgery there were marked elevations of the UN (71 mg/dL; reference range, 10 - 20 mg/dL) and creatinine (9.7 mg/dL; reference range, 0.9 - 1.8 mg/dL) in the blood; simultaneously sampled peritoneal fluid had elevated UN (77 mg/dL) and creatinine (12.3 mg/dL). The decision was made to perform a second surgery to reassess the ureters and bladder, and if necessary, place a cystostomy tube to allow urine egress and promote healing of the bladder post-operatively. Anesthetic induction for this surgery was as previously described. Exploration of the dorsal surface of the bladder revealed a necrotic area, allowing urine leakage. A cystostomy tube was placed in the ventral aspect of the bladder. Due to poor surgical access to the necrotic area and concerns that attempts at resection might result in denervation to the area, closure of the rent in the bladder was not attempted. Anesthetic recovery was uncomplicated. Unfortunately, the doe's PCV continued to decrease after surgery, and despite intense supportive therapy, she died two days following the second surgery. Necropsy has been performed on the doe and results showed that the doe had localized peritonitis, severe cystitis, bilateral mild to moderate hydronephrosis and hydroureter and the animal might died due to acute renal failure and peritonitis. In the doe reported here, bloody vaginal discharge was caused by an endometrial stromal polyp. Endometrial polyps are benign, focal, cystic proliferations of endometrial glands associated with stromal changes. They are broad-based or pedunculated, and may project into the uterine lumen and appear on ultrasound as multilobular masses containing numerous cysts. In dogs with bloody vaginal discharge due to polyps, the vaginal blood was caused by ulceration, hemorrhage or inflammation, especially if the mass protruded into the vagina. Endometrial polyps have been reported in queens, sows, mares, baboons, cynomolgus macaques, lemurs, hedgehogs, and women but not in goats.
Bloody vaginal discharge in the doe can result from many causes such as lochia, postpartum metritis, abortion, lacerations of the uterus or cervix following dystocia, neoplasia and fibromatosis of the vagina. Following parturition does may continue to discharge lochia for up to 4 weeks\(^6\). Lochia should be differentiated from the abnormal brownish, watery, malodorous discharge of postpartum metritis, in which does will be febrile and anorectic\(^{10}\). Since the doe of this report had not been bred for five years, postpartum-related causes of vaginal discharge were ruled out.

Endometrial polyps should be differentiated from other uterine masses reported to occur in goats by histopathology, including tumors such as leiomyomas and leiomyosarcomas\(^{11,12}\) and fibromas\(^4\). Treatment of such disease conditions depends on the degree of involvement of the mass within the genital tract, malignancy, and the intended use of the animal. In dogs with endometrial polyps, the recommended treatment is ovariectomy\(^1\). Treatment in humans is by polypectomy after hysteroscopy localization of the polyp\(^8\). In the doe reported here, the intended use was a companion animal, so attempts to salvage reproductive function were not necessary. The endometrial mass described in this report most likely caused pressure on the urinary tract, resulting in straining during urination. The blood may have been due to hemorrhage from the highly vascularized mass similar to what has been reported in bitches with endometrial polyps\(^1\).

### DECLARATION OF CONFLICTING INTERESTS

The authors declared that they had no conflicts of interest with respect to their authorship or the publication of this article.

### FUNDING

The authors declared that they received no financial support for their research and/or authorship of this article.

### Bibliography


---

**PUBBLICAZIONE ARTICOLI**

I medici veterinari interessati alla pubblicazione di articoli scientifici sulla rivista **“LARGE ANIMAL REVIEW”** devono seguire le indicazioni contenute nel file **Istruzioni per gli autori** consultabili al sito [http://www.sivarnet.it](http://www.sivarnet.it)

**INFORMAZIONI:**

Paola Orioli, Segreteria di Redazione, Tel. 0372-40.35.39, info@sivarnet.it