

Postpartum uterine prolapse and its relation to hypocalcaemia in local ewes in Basrah province

Tahir A. Fahid[@]

Department of Internal Medicine, Surgery and Obstetrics, College of Veterinary Medicine, University of Basra, Basra, Iraq

E-mail: [vet.me94@yahoo.com](mailto:veter.me94@yahoo.com)

Summary

This study was performed on a 10 of local ewes during 24 hours after lambing. Five of the ewes suffering from uterine prolapse (treated group), and other five ewes didn't show uterine prolapse (control group). The study shows a relation between the calcium serum level and incidence of uterine prolapse after lambing. The result of study indicated that, a low level of calcium in the serum of treated group (2.29 ± 0.33 mg/dl) as compared with the level of the calcium in the serum of the control group (6.52 ± 0.30). The results indicated that the calcium deficiency (hypocalcaemia) in the late stage of pregnancy and at the lambing time may lead to uterine prolapse in ewes.

Key words: Uterine prolapse, hypocalcaemia, local ewes.

Introduction

Uterine prolapsed occurs in all large animal species. It is most common in the cow and ewe and less common in the goat but rare in the mare. It is simply an eversion of the uterus which turns inside out as it passes through the vagina. Prolapse of the uterus generally occurs immediately a few hours after parturition when the cervix is open and the uterus lacks tone (1). Prolapse that occur more than 24 hours post partum is extremely rare and is complicated by partial closure of the cervix, making replacement difficult or even impossible (2).

The prolapse is visible as a large mass protruding from the vulva, often hanging down below the animal's hock. The placenta may likely be retained during this period (3). Uterine prolapse normally occurs when the fetus has been expelled and the fetal cotyledons have separated from the maternal caruncles (4). The etiology of uterine prolapse is unknown, but many factors have been associated (1 and 5). These includes conditions such as lack uterine tone, increased straining caused by pain, excessive traction at assisted parturition, the weight of retained fetal membranes, conditions that increased intra abdominal pressure including tympany and excessive estrogen content in

the feed. Animals with uterine prolapse treated promptly recovers without complication while delay treatment could result in death the animal in a matter of hour or so from internal hemorrhage caused by the weight of the organ which tears the mesovarium and artery (4).

Success of treatment of the uterine prolapse depends on the type of case, the duration of the case, the degree of damage and contamination. This study, therefore, aims at highlighting the management of uterine prolapse in local ewes. The study was planned to know the relation between the hypocalcaemia and incidence of uterine prolapse especially after parturition in Iraqi ewes.

Materials and methods

Ten local ewes (1.5 year old weighing 40 - 50 kg) in a period 24 hours after lambing were included in this study. Five of them suffering from uterine prolapse (figure, 1) serve as treated group, and other five ewes without uterine prolapse serve as control group. Ten ml blood samples were collected from the jugular vein of each animal by using a disposable sterile syringe without anticoagulant for calcium analysis. Examination was carried out and showed the

prolapsed uterus was swollen, necrotic and contaminated with fecal materials and debris. Low epidural anesthesia was achieved by infiltration of 2 ml of lidocaine solution between the first and 2nd intercoccygeal vertebrae to prevent straining during replacement of the prolapsed organ. The debris and fecal materials were gently removed and the prolapsed organ was washed with warm dilute sodium bicarbonates solution (6).

The necrotic area was debrided. The animal was then placed on sternal recumbency and the two hind limbs were pulled out behind her. Then using both hands with moderate force the prolapsed organ was gently pushed in through the vagina. Horizontal mattress sutures using nylon size 0 was sutured in the vulva as a retention technique to hold the uterus in place using Gurlech needle.

Oxytocin 20 IU/kg administer intramuscular for once to assist in uterine involution. Procaine penicillin (broad spectrum antibiotic) 20,000 IU/kg was administered for 3 days. Dexamethasone 1 mg/kg was given for once to prevent the shock. The vulva suture was removed after 7 days. Blood samples were centrifuged at 300 rpm/min (for 5 minutes), then the serum was draw off by the pipette to a test tube, and stored at (-20C°) until analyses for the calcium contents.

Serum calcium concentrations were estimated using the calcium kit cobas c III

(Germany), this test for calcium, is done by Reagent Assay, using the Cobas c III system (7).

Statistical analysis

Statistical analysis was done using computer program (SPSS) according to a computer program. The *t-test* values of calcium, of different experimental groups of ewes in the two groups. . The values were considered significant at $P \leq 0.05$. So the results show existence significant differences between the two groups ($P \leq 0.05$), show table (2).

Results and discussion

The results of treatment showed response of the treated group (ewes with uterine prolapsed) to treatment by giving the calcium borogluconate 25% (50-100 ml) was administered intravenously, and the animal stand after end of the treatment. The animal's health was improvement after give back the uterus to inside and giving the antibiotics. Laboratorial, the results show decrease serum level of calcium in the treated group (range = 22.9 mg\dl) compared with its level in the control group (range = 6.52 mg\dl), the values of serum calcium level in the both treated and control groups shows in (Table, 1).

Table, 1: Values of calcium serum levels (mg/dl) in uterine prolapse and control ewes (n=5)

Animals	Mean values (<i>t-test</i>) of calcium (mg/dl)
Uterine prolapse	2.29±0.33 *
Control group	6.52±0.30

* Refer to significant differences at ($p \leq 0.05$)

Prolapse of the uterus commonly occur during the third stage of labor at a time when the fetus has been expelled and the fetal cotyledons has separated from the maternal caruncles (4). The goal in the treatment of genital prolapse is replacement of the organ followed by a method to keep it in the retained position. A full clinical examination of animals with uterine prolapse must be undertaken as signs of toxemia like in appetite, an increased respiratory rate, raised pulse and congested mucus membranes may be consisted with metritis. Vascular compromise, trauma and fecal contamination may also increase toxin intake across the uterine mucosa.

However, careful removal of these materials, after soaking with warm dilute antiseptic solution is usually successful causing only minor capillary bleeding. Vigorous attempts to remove superficial contamination should be avoided as they may prove counterproductive by increasing toxin uptake (8). A caudal epidural anesthesia is essential before replacement of a genital organs prolapse especially in the uterine prolapse as it decreases straining and desensitizes the perineum (1). The uterine prolapse can be replaced with the animal in standing or recumbent position (1). Once the uterus is replaced, the operators hand should be inserted to the tip of both uterine horns to be sure that no remaining invagination could incite abdominal straining and re prolapse (2).

If the uterus is completely and fully replaced all the way to the tips of the uterine horns, the prolapse is unlikely to occur (1). Once the uterus or vagina is in its normal position, oxytocin 10 I.U. intramuscularly should be administered to increase uterine tone. It has also been reported that most animals with uterine prolapse are hypocalcaemic (2). Where signs of hypocalcaemia are noticed such animals should therefore, be given calcium borogluconate. Hypocalcaemia results in myometrial fatigue and delays cervical



Figure, 1 : Postpartum uterine prolapse in local Iraqi ewe

involution, both of which could predispose to uterine prolapse in ewes (9). An injectable broad spectrum antibiotics once administered for three to five days after replacement of the prolapsed will prevent secondary bacterial infection (6, 10 and 11). Dexamethasone is normally given to reduce the uterine swelling. Animals with genital prolapse that were properly managed can conceive again without problems. Complications develop when lacerations, necrosis and infections are present or when treatment is delayed. Shock, hemorrhage and thrombo-embolism are potential sequel of a prolonged prolapse (4). The high vital parameters witnessed in this case when the animal was first brought could be as a result of metritis caused by secondary bacterial infection especially as the animal was brought for treatment after three days of occurrence of the prolapse. Treatment with broad spectrum antibiotics (procaine penicillin 20,000 I.U/kg) was responsible for the lowering of the vital parameters to the normal values after three days of treatment.

References

1. Hanie, E.A. (2006). Prolapse of the Vaginal and Uterus: Text Book of Large Animal Clinical Procedures for Veterinary Technicians. Elsevier, Mosby, pp: 218-221.
2. Fubini, S.L. and Ducharme, G.N. (2006). Surgical Conditions of the Post Partum Period. Text Book of Farm Animal Surgery, pp: 333-338.
3. Roberts, S.J. (1986). Injuries and Diseases of the Puerperal Period: Text Book of Veterinary Obstetrics and Genital Diseases. Indian Edn., pp: 300-340.
4. Noakes, D.E.; Perkinson, T.J. and England, G.C.W. (2001). Post Parturient Prolapse of the Uterus. Arthur's Veterinary Reproduction and Obstetrics. Saunders, pp: 333-338.
5. Jackson, P.G.G. (2004). Post parturient Problems in Large Animals. Hand Book of Veterinary Obstetrics. 2nd Edn. Elsevier Saunders, pp: 209-231.
6. Hosie, B. (1993). Treatment of Vaginal Prolapse in Ewes. Practice, 15: 10-11.
7. Anonymous, (2007). Cobas C Integra and life Needs Answers are trademarks of Roche. Roche Diagnostics, Pp.1207.
8. Scott, P. and Gessert, M. (1998). Management of ovine vaginal prolapse. Practice, 20: 28-34.
9. Roberts, S. J. (2004). Injuries and diseases of the puerperal period. In: Veterinary Obstetrics and Genital Diseases (Theriogenology). 2nd ed. [Indian reprint]. CBS Publishers and Distributors, New Delhi, India, Pp 300-335.
10. Borobia-Belsue, J. (2006). Replacement of rectal prolapse in sows. Vet. Rec., Pp: 380.
11. Plunkett, S.J. (2000). Vaginal Edema (Hyperplasia) or Prolapse and Uterine Prolapse. Text Book of Emergency Procedure for the Small Animal Veterinarian, WB Saunders, pp: 217-218

تدلي الرحم ما بعد الولادة وعلاقته بنقص الكالسيوم في النعاج المحلية في محافظة البصرة

طاهر عبد الحسين فهد

فرع الطب الباطني والجراحة والتوليد - كلية الطب البيطري - جامعة البصرة- البصرة ، العراق

الخلاصة

تضمنت الدراسة 10 نعاج محلية في فترة 24 ساعة بعد الولادة، 5 منها تعرضت لحالة تدلي الرحم ما بعد الولادة (مجموعة العلاج)، و5 نعاج لم تتعرض لحدوث التدلي الرحمي (مجموعة السيطرة). اظهرت الدراسة وجود علاقة عكسية بين مستوى الكالسيوم في المصل وحدوث حالة التدلي الرحمي ما بعد الولادة، فمن خلال الفحص المختبري لمصل الدم لوحظ وجود انخفاض في مستوى الكالسيوم في مصل مجموعة تدلي الرحم ($0,33 \pm 2,29$ ملغم/100 ميللتر) مقارنة مع مستواه في مصل مجموعة السيطرة ($0,30 \pm 6,52$ ملغم/100 ميللتر). استنتجت الدراسة ان نقص الكالسيوم خاصة في المراحل الاخيرة من الحمل و اثناء الولادة يؤدي الى حدوث حالة التدلي الرحمي ما بعد الولادة في النعاج.

كلمات مفتاحية: تدلي الرحم، نقص الكالسيوم، النعاج المحلية.