

**UTERINE TORSION IN A GOAT ACCOMPANIED BY DYSTOCIA MANAGED BY FETOTOMY: A CASE REPORT****Laporan Kasus: Torsio Uteri Disertai Distokia pada Kambing Ditangani dengan Fetotomi**

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**Abstract**

Uterine torsion is a common form of dystocia in small ruminants, including goats, and can lead to failure of normal parturition. This condition is characterized by uterine twisting, which impedes the fetus's passage through the birth canal. The purpose of this paper is to describe the management of a case of uterine torsion in a goat that resulted in a fetotomy due to the fetus's excessive size. This case began with symptoms of labor difficulty (dystocia) and no labor progress. Examination revealed uterine torsion, which hindered the normal position of the fetus. Corrective measures were taken, but were unsuccessful in restoring the uterus to its optimal position. Furthermore, the excessive size of the fetus (fetal oversize) exacerbated the condition, making it impossible to perform a normal extraction. Therefore, a fetotomy was decided upon as an alternative to save the mother. The procedure was performed carefully to minimize trauma to the mother's reproductive tissues. The final results showed that the fetotomy was effective in managing this case and successfully saved the mother.

Keywords: dystocia, fetotomy, goat, uterine torsion

### Abstrak

Torsio uteri merupakan salah satu penyebab distokia yang sering terjadi pada ternak ruminansia kecil, termasuk kambing, dan dapat menyebabkan kegagalan proses partus normal. Kondisi ini ditandai dengan terpuntirnya uterus yang menghambat keluarnya fetus melalui jalan lahir. Tujuan penulisan ini adalah untuk menjelaskan penanganan kasus torsio uteri pada kambing yang ditangani pada tindakan fetotomi akibat ukuran fetus yang terlalu besar. Kasus ini diawali dengan gejala kesulitan melahirkan (distokia) dan tidak adanya kemajuan proses partus. Hasil pemeriksaan menunjukkan adanya torsio uteri yang menghambat posisi normal fetus. Upaya koreksi dilakukan, namun tidak berhasil mengembalikan posisi uterus secara optimal. Selain itu, ukuran fetus yang terlalu besar (*fetal oversize*) memperparah kondisi sehingga tidak memungkinkan dilakukan ekstraksi secara normal. Oleh karena itu, diputuskan tindakan fetotomi sebagai alternatif untuk menyelamatkan induk. Prosedur dilakukan dengan hati-hati untuk meminimalkan trauma pada jaringan reproduksi induk. Hasil akhir menunjukkan bahwa tindakan fetotomi efektif dalam menangani kasus ini dan berhasil menyelamatkan induk kambing.

Kata kunci: distokia, fetotomi, kambing, torsio uteri

### INTRODUCTION

Goats are small ruminant livestock that play an important role in providing a source of animal protein and improving farmers' economic well-being. The success of goat farming is greatly influenced by reproductive efficiency, especially during the birthing process. Although most goat births proceed normally, complications such as dystocia remain a significant problem because they can cause the death of the fetus or the mother and lead to further reproductive complications.

Dystocia is a condition in which a mother is unable to expel her fetus through the birth canal normally due to abnormalities in the uterus or birth canal, and possibly also due to fetal factors (Zainuri *et al.*, 2023). Dystocia in small ruminants is relatively rare worldwide (less than 5%). Dystocia typically occurs when the first or second stage of labor lasts too long, or when the first stage does not progress to the next stage within 30 minutes (Ismail, 2017).

Dystocia in small ruminants can be caused by maternal or fetal factors. In a study involving sheep and goats with dystocia, the highest prevalence was found in first-time mothers and in those carrying large male fetuses (Bhattacharyya *et al.*, 2015). In goats, ringwomb, fetal malposition, narrow pelvis, and twin presentation have been reported as the main causes of dystocia. Other, less common causes in goats include uterine inertia, excessive fetal size, uterine torsion, and fetal abnormalities (Mustafa & Ali, 2011). Although fetotomy is performed less frequently in goats than in cattle, this procedure remains an important option in cases of complex dystocia. In most cases, partial fetotomy of the head or limbs is sufficient to create space within the vagina, thereby facilitating further manipulation or the removal of the remaining fetal parts (Kumar *et al.*, 2014). In cases of prolonged dystocia that are not properly managed, the fetus often suffers intrauterine death. Under such conditions, normal extraction becomes difficult or impossible, especially if the fetus is too large or has changed position. Therefore, follow-up procedures such as fetotomy are necessary.

### CASE REPORT

#### Signalment and Anamnesis

A female Ettawa Crossbreed goat, approximately 2 years old and weighing 40 kg, from Sumbermulyo Village, Pesanggaran Subdistrict, Banyuwangi Regency, East Java, was reported to be experiencing labor complications (partus). The goat had distinctive white-and-

brown fur. This animal was a dam with a history of three pregnancies (third parity), with her two previous births proceeding normally without complications. Based on the owner's medical history, the goat began showing signs of labor two days prior to the examination. Initial symptoms included restlessness, frequent changes in position, and the onset of straining. However, even after two days had passed, the birthing process had not yet been completed. During this period, the animal continued to strain without any progress in delivering the fetus. This condition indicated an obstruction in the birthing process. Additionally, the animal's general condition continued to deteriorate, marked by weakness, difficulty standing, and signs of exhaustion due to prolonged straining.

### **Physical examination and Clinical Signs**

At the time of examination, the mother goat's general condition appeared to have deteriorated. She appeared weak, spent most of her time lying down, and showed signs of exhaustion due to prolonged straining. Clinically, continuous but ineffective straining was observed, as it was not accompanied by the expulsion of the fetus. The goat also showed clear signs of exhaustion, such as difficulty standing and decreased stamina due to the prolonged straining. To determine the cause of the complication, a rectal palpation was performed by inserting a hand into the birth canal. This examination revealed an obstruction in the birth canal caused by uterine torsion (*torsio uteri*). This condition caused a change in position and narrowing of the uterine lumen, thereby obstructing the fetus's passage and preventing normal delivery. Furthermore, upon further exploration, the fetus showed no signs of life and was suspected to have suffered intrauterine death. The fetus was also palpated as being relatively large compared to the mother's birth canal capacity, further complicating the dystocia. The combination of uterine torsion, fetal death, and excessive fetal size prevented the labor process from proceeding normally without further obstetric intervention.

### **Diagnosis and Prognosis**

Based on the results of the medical history, physical examination, and obstetric examination, this case was diagnosed as uterine torsion. This diagnosis was supported by a history of labor lasting approximately 2 days without progress, the detection of an obstruction in the birth canal, and the presence of uterine torsion causing narrowing, which prevented the fetus from being delivered normally. Additionally, the relatively large size of the fetus and the presence of signs of intrauterine death further complicated the condition. The prognosis for the dam was considered favorable, as her condition showed significant improvement following the procedure to deliver the fetus. The dam was able to stand and walk again, indicating a good response to treatment and the absence of severe post-procedural complications. Meanwhile, the prognosis for the fetus was unfavorable, as the fetus had already suffered intrauterine death prior to the procedure and therefore had no chance of survival.

### **Therapy**

Injection therapy includes oxytocin 10 IU/mL at a recommended dose of 0.5 IU/kg body weight and prostaglandin 5 mg/mL at a recommended dose of 5 mg/kg body weight, oxytetracycline 200 mg/mL at a recommended dose of 10 mg/kg body weight, and Vitol® 100 mL at a recommended dose of 2 mL per animal. Based on a per-vulval examination, uterine torsion was diagnosed with the twist directed to the right (*dextro-torsion*). Repositioning was performed by gradually rolling the goat's body to the left to return the uterus to its normal anatomical position. After confirming that the uterus had been reduced (no longer twisted), an evaluation of the fetuses was performed. Given that both fetuses were dead and there was an obstruction in the birth canal due to the simultaneous entry of both fetuses' heads into the birth canal, a decision was made to perform a fetotomy. The procedure began by applying traction

to the fetuses using a rope to position the cranial ends for easier access. Next, the fetal body was cut in a controlled manner using specialized fetotomy surgical instruments to reduce the volume of the fetuses, allowing for the safe evacuation of remaining fetal tissue from the reproductive tract without causing excessive trauma to the mother. After the entire procedure was completed, the patient was given supportive therapy to minimize the risk of parasitic infection and reduce allergic reactions or systemic inflammation. Pharmacological interventions include injections of 10 mg/mL ivermectin at a recommended dose of 0.2 mg/kg body weight and 10 mg/mL diphenhydramine at a recommended dose of 0.5 mg/kg body weight, administered subcutaneously (SC).

## DISCUSSION

### Discussion

Uterine torsion is a condition in which the uterus rotates around its axis, causing the fetal passage to narrow or become blocked (Fitrant, 2024). Clinically, uterine torsion can be classified into two main categories based on the degree of rotation around its longitudinal axis. The first is complete uterine torsion, a condition in which the uterus rotates by an angle exceeding 180°, which generally requires immediate treatment due to the risk of significant vascular compromise. The second is incomplete uterine torsion, which refers to rotation with a degree of rotation less than 180° (Fitrant, 2024). Examination for uterine torsion can be performed vaginally or rectally (Rahayu, 2022). During a vaginal examination, the vaginal wall feels rough, and the labia appear retracted inward. During a rectal examination, the rotated cornua of the uterus can be palpated. One side of the broad ligament is pulled downward due to the twisting at the lower part of the uterus, while the cervical ligament and the broad ligament on the opposite side are pulled across the body of the uterus, allowing a spiral-shaped twist in the uterus to be felt (Bai *et al.*, 2016).

The most important predisposing factor for uterine torsion is instability of the pregnant uterus, caused by the broad ligament on the dorsolateral side. This broad ligament supports the uterus from above but attaches to the lower part of the uterine arch, allowing the uterus to rotate more easily in cows (Prabaharan *et al.*, n.d.). Parturition consists of three stages: the first stage involves cervical dilation, which lasts approximately 1–24 hours. The second stage consists of uterine contractions and the discharge of amniotic fluid until the fetus is delivered; this stage lasts about 2 hours, but in certain cases, such as uterine torsion, no amniotic fluid is observed exiting the birth canal. The third stage involves the expulsion of the placenta, which occurs approximately 8–12 hours later (Whittier W. Dee, 2009).

Uterine torsion exerts pressure on the median uterine vein, thereby disrupting venous blood flow and increasing carbon dioxide levels in the fetal blood. As a result, the fetus becomes distressed and makes vigorous movements, which can actually worsen the degree of uterine torsion (Ghuman, 2010). Electrocardiogram examinations during uterine torsion experiments in water buffalo also revealed cardiac abnormalities. Restricted arterial blood flow and impaired venous outflow lead to ischemia, hypoxia, and cell death, resulting in permanent damage to the endometrium and myometrium, and ultimately fetal death (Ghuman, 2010). As the degree of torsion increases, compression of the central uterine artery occurs, and oxygen supply to the fetus decreases. The imbalance between arterial perfusion and venous outflow within the uterus triggers ischemia, hypoxia, and cell death, which subsequently leads to permanent damage to the endometrium and fetal death (Fitrant, 2024).

The treatment for this condition involves rolling the goat's body in the opposite direction of the uterine torsion. By rotating the mother's body in the opposite direction of the torsion, the vaginal twist can be resolved, thereby opening the birth canal and allowing the fetus to pass

through during delivery. The success or failure of the mother's body rotation can be determined by manual examination—inserting a hand into the vagina to assess whether the folds of the vaginal mucosa have separated or, conversely, are closing further. After successfully repositioning the reproductive tract to its normal anatomical position, a physical examination of the fetuses revealed a mechanical obstruction in the form of cephalic presentation of both fetuses entering the birth canal simultaneously. Based on the medical history, the owner reported that the animal had been in the labor phase for two days without any progress in delivery. The prolonged delay in treatment resulted in the fetuses being beyond rescue, and both were found dead upon examination. The procedure performed to deliver the fetus is fetotomy, as the mother is already weak and the birth canal is narrow. Fetotomy is defined as a surgical procedure performed on the fetus with the aim of reducing its size, either by dividing the body or by removing certain parts of the fetus. This procedure is indicated in cases of a large fetus, abnormal presentation, position, or posture, or a combination of these conditions that cannot be corrected through manual manipulation (Kebede *et al.*, 2017).

In addition to the above procedure, oxytocin and PGF $2\alpha$  injections are administered to relax the muscles of the reproductive organs, thereby facilitating the birthing process. In addition, long-acting oxytetracycline is administered. Oxytetracycline is a broad-spectrum tetracycline antibiotic that is extensively used for human medical treatment and intensively used in livestock and aquaculture (Prameswari *et al.*, 2019). Oxytetracycline is an antibiotic that can be easily distributed to nearly all organs and tissues (Prameswari *et al.*, 2019). The administration of vitamins A, D, and E is intended to stimulate myometrial contractions, eliminate bacterial infections, and promote endometrial regeneration. According to Kusuma (2023), livestock deficient in vitamin E will experience difficulties with estrus and ovulation or a reduced number of ovulated eggs.

## CONCLUSIONS AND SUGGESTIONS

### Conclusion

Uterine torsion in goats is a serious cause of dystocia because it can hinder the normal birthing process and endanger the safety of both the mother and the fetus. This condition becomes even more complex when accompanied by a fetus that is too large (fetal oversize), resulting in a mismatch between the size of the fetus and the birth canal, which prevents normal delivery. Attempts to correct uterine torsion did not yield optimal results, and fetal oversize was the primary factor hindering delivery, in addition to the fact that the mother had been in labor for more than two days. Therefore, fetotomy was chosen as an alternative treatment to remove the fetus through the birth canal, with the primary goal of saving the mother.

### Suggestions

Based on a case of uterine torsion in a goat that had been in labor for approximately 2 days and was complicated by a fetus that was too large—ultimately requiring a fetotomy—it is recommended that farmers be more vigilant and immediately initiate early intervention when labor does not progress within a normal timeframe, as delayed intervention can worsen the condition of both the dam and the fetus and increase the risk of complications such as uterine exhaustion, infection, and even maternal death. Routine monitoring of gestation and examinations by veterinary professionals are strongly recommended to identify risk factors for dystocia early on, including the possibility of fetal macrosomia or fetal malposition that may hinder the birthing process. In addition, education for livestock farmers regarding the normal time frame for the birthing process and the signs of dystocia needs to be improved so that the decision to immediately seek veterinary assistance can be made without delay. In field practice, veterinarians are also expected to be able to conduct a quick and accurate assessment of the

dam's clinical condition, particularly in prolonged cases such as labor lasting more than 24 hours, so that they can immediately determine the most appropriate course of action—whether correction, surgery, or fetotomy—if normal delivery is not possible.

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