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**Kalaiyaran V**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

**Ruthrakumar R**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

**Gopikrishnan D**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

**Palanisamy M**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

**Devadharshini N**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

**Nirmel S**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

**Selvaraju M**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

**Corresponding Author:**

**Kalaiyaran V**

Veterinary College and Research  
Institute, Namakkal, Tamil  
Nadu, India

## Effective management of dystocia due to traumatic ventrolateral hysterocele in a doe

**Kalaiyaran V, Ruthrakumar R, Gopikrishnan D, Palanisamy M, Devadharshini N, Nirmel S and Selvaraju M**

### Abstract

A four-year-old non-descriptive female goat was presented to the Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal with the history of distended left lower abdomen. Clinical examination of left lower abdomen revealed foetus and hernial ring. Radiographic examination confirmed fetal skeleton in left abdomen and diagnosed as hysterocele. Caesarean section along with herniorrhaphy was performed and animal recovered uneventfully.

**Keywords:** Management, dystocia, traumatic, ventrolateral hysterocele

### Introduction

An organ or tissue can pass through a natural or acquired opening in a hernia. Hernias can be classified clinically as reducible or irreducible hernia, or based on aetiology (congenital and acquired hernia), site (abdominal, umbilical, scrotal, inguinal, femoral, perineal, and diaphragmatic hernia), or both (Fahd and Ahmed, 2007) [8]. The hernial contents, hernial ring, and hernial sac constitute a hernia. A ventral hernia is any viscera that passes through the abdominal wall in any manner (Selvaraju *et al.*, 2020) [19]. In addition to severe abdominal wall trauma, blunt object injuries or violent force, camel kicks, cattle horn forces, and abdominal wall abscesses, ventral abdominal hernias can also be caused by overstretching or straining the abdominal muscles during pregnancy and parturition, which weakens the abdominal muscles. Ventral abdominal hernias are also caused by some atraumatic factors, such as the rupture or weakness of the prepubic tendon (Frank, 1981 and Arthur, 1989) [9, 2], which makes it unable to maintain the gravid uterus (St. Jean and Anderson 2004 and McIlwraith, 1984) [21, 12]. Ventral abdominal hernias can occur anywhere from the iliac crest to the lateral site of the thoracic cavity.

Females are more likely to experience abdominal hernias, which have a great healing history and an incredible recovery rate (Al-Sobayil and Ahmed, 2007) [1]. According to Vijayanand *et al.* (2012) [25], it typically affects pluriparous animals in advanced pregnancy when there are numerous foetuses, which causes the prepubic tendon or abdominal muscles to become fragile. According to research, trauma accounts for 71.4% of small ruminant cases of abdominal hernias (Al-Sobayil and Ahmed, 2007) [1].

### History and clinical observations

A nondescript, nearly term pregnant four-year-old pluriparous doe was brought to the Veterinary Clinical Complex, Veterinary College and Research Institute, Namakkal. She had a history of distension in her left lower abdomen with horn goring the day before. Since yesterday, the animal showed signs of anorexia, was drowsy and had a rectal temperature of 102.0°F. A vaginal examination revealed a cervix that was closed, rigid, and stiff. The foetus and hernial ring were palpable when the herniated mass was examined. Hysterocele was the condition's provisional diagnosis based on the clinical examination. The diagnosis was validated by radiological testing, which revealed the presence of the foetal skeleton and hernial contents. The fetus's heartbeat was verified to be absent through ultrasonography analysis of the enlargement.

Due to a ventro-lateral abdominal hernia of the gravid uterus with a lifeless foetus, the case was categorised as dystocia. Therefore, it was agreed to have a simultaneous herniorrhaphy and Caesarean section.

## Results and Discussion

The doe was positioned in lateral recumbency to the right. The herniated area was cleaned, shaved, and sterilised for an aseptic C-section. 2% lignocaine hydrochloride was locally infused to desensitise the incision site. The middle of the herniated section had a five-inch incision. Two dead foetuses were removed along with typical incisions made in the skin, peritoneum, and uterus. The uterus was then positioned after the uterine horn was flushed with 500 mL of normal saline and 100 mL of metronidazole. The uterine horn was then closed with two layers of Lembert sutures using chromic catgut no. 1. There was an approximately 10-cm-long tear in the muscles of the lower abdomen. In accordance with this, the skin incision was lengthened, and a non-absorbing suture material (Polyamide no. 2) was used to progressively close each damaged muscle. Using silk thread and a cross mattress suture, the skin incision was closed. For five days, the animal received the following injections: Ringer's Lactate (10 mL/kg i.v.), Enrofloxacin (5 mg/kg i.m.), Meloxicam (0.25 mg/kg i.m.), Chlorpheniramine maleate (0.5 mg/kg i.m.), and Tribivet (2 ml). The animal made a full recovery. The tenth day following surgery the skin sutures were removed.

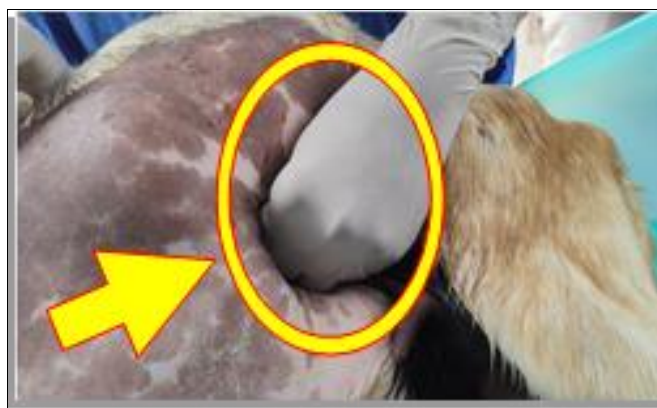
Farmers suffer enormous financial losses as a result of dystocia, often known as difficult birth, a condition that affects small ruminants (sheep and goats). Dystocia also negatively impacts dam fertility (Mcsporrán, 1980) [14]. Goat dystocia is not very evident (Bhattacharya *et al.*, 2015) [4]. Similar obstetrical problems affect both sheep and goats (Majeed, 1994) [13]; however, it is believed that dystocia affects goats more commonly than ewes (Mehta *et al.*, 2002) [16]. Dystocia can result from an infrequent hernia of the gravid uterus in advanced pregnancy in ruminants, which typically happens to the left side of the abdominal floor (Roberts, 1971) [23]. An organ or tissue protruding through an aperture is called a hernia (Tiwari, 2004) [22]. In accordance with Kemparaja (2003) [11], the aperture could result from a tear in the abdomen wall or could be a naturally occurring opening similar to the femoral or inguinal canals.

When compared to other domestic species, ventral abdominal hernia is a common acquired condition in ruminants (Tiwari, 2004) [22] and is more common in dogs and pigs. Animal productivity, reproduction, and production can all be negatively impacted by hernias, which can afflict both large and small animals (Das, 2012) [6]. In addition to the impact on the animal's overall appear, complications from the hernia include infection, adhesions, imprisonment of the contents, and strangling (Al- Sobayil and Ahmed, 2007) [1]. According to Hassan's (2008) [10] report, reducible ventral hernias are more common than irreducible ones, and this is supported by the fact that animals with reducible hernias tend to be in better general health than those with irreducible ones. Most hernias enlarge over time, and when a gravity horn is discovered in the hernial sac, they might result in pain, anorexia, weight loss, or dystocia if they are not surgically treated. The most serious and potentially fatal consequences of a herniation include intestinal strangulation and incarceration (Bellavance *et al.*, 2010) [3]. In addition to needle aspiration and biopsy, a comprehensive clinical examination and the use of diagnostic

imaging, such as ultrasound, are necessary for the identification of hernias (Sadan, 2019) [17].

Additionally, based on changes in echogenicity, ultrasound is a non-invasive diagnostic imaging technique that makes it possible to distinguish the majority of this swelling from the nearby organs (Scott, 2012) [20]. Differentiating hernias from other superficial swellings is crucial, but it can be difficult for veterinarians to do because different swelling types can have similar clinical manifestations. Due to the advanced pregnancy of the study's doe, who had two kids, there was a weakening of the abdominal muscles, which finally caused the gravid uterus to enter the abdominal cavity close to the mammary gland. Our delivered foetus was nearly identical to Venkatesan's report (2007). A case of central hysterocele was previously reported by (Vijayanand *et al.*, 2012) [25] in a goat that had been involved in an automobile accident and had a tear in the abdominal muscles that caused the gravid uterus to herniate with the live, fully formed foetuses inside. In contrast to this study, which may be the result of a different disease, a ventral abdominal hernia is caused by the rupture of the prepubic tendon as a result of hydroallantois, which increases the weight of the gravid uterus (Selvaraju *et al.*, 2010) [18]. Comparable to the results of this study, which show that two foetuses with foetal fluids increase the weight of the uterus and cause a ventral abdominal hernia.

Prepubic tendon rupture is more complex in small ruminants because it typically affects the udder because of its proximity to the ground and the height of the animal; if left untreated, it worsens and is more commonly seen in Shami breeds, as this study's findings indicate (Mavrogenis *et al.*, 2006) [15]. Hernioplasty may be necessary in cases of significant ventral abdominal hernia, however surgical intervention (herniorrhaphy) is beneficial in cases of massive hernial opening. One of the most popular prosthetic materials for reconstructing abdominal wall hernias is non-absorbable synthetic mesh. When compared to primary suture repair, the hernia recurrence rate is much lower with this material since it enables a tension-free repair (Burger *et al.*, 2004) [5]. In ruminants, the ventrolateral abdominal area and the flank are not covered by a continuous muscle layer; instead, they have a broad aponeurosis and a relatively thin fleshy section with strong tendinous nature (Dyce KM, 2002) [7]. The prognosis was improved by the location of the hernia (lateral), the direction of the abdominal muscles (transverse abdominal runs transversely, internal oblique runs caudoventrally, and external oblique runs cranioventrally), the early identification, and the surgical repair.



**Fig 1:** Palpation of hernial ring





**Fig 2:** Absence of fetal heart beat in ultrasonography



**Fig 3:** Gravid uterus and hernial ring



**Fig 4:** Removal of dead foetuses



**Fig 5:** Suturing uterine incision



**Fig 6:** Removed two dead male foetuses

### Conclusion

In general, hernias are not seen as an emergency. Delays in treatment, however, may result in problems such as loss of muscle flexibility and adhesions between subcutaneous tissues and viscera. Regardless of the underlying reason, hysterocele in all animals should be treated as an emergency when the foetus's life is in risk. Because the foetuses in this case were fully formed, an emergency caesarean section was deemed to be the best surgical procedure for treating ventrolateral hysterocele.

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