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## Surgical correction of traumatic hernia in a full-term pregnant ewe with a nylon mesh

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#### Abstract

A two-year-old full-term pregnant ewe was brought to the Veterinary Dispensary, Burgur, Erode, Tamilnadu, with history of swollen left ventro-lateral abdomen. On examination of the swelling, the uterus with foetal mass was palpable through the hernial ring. After 24 hours of fasting the animal was premedicated and anaesthetised as per standard protocol. Laparotomy was performed and dead foetus was removed. Hernioplasty with nylon mesh yielded uneventful recovery. Healing was complete on 10<sup>th</sup> day postoperatively.

**Keywords:** Traumatic hernia, nylon mesh, hernioplasty

#### Introduction

Hernia is the protrusion of an organ or tissue through an opening. The opening is caused by a tear in the abdominal wall or it may be a natural opening like the inguinal canal or femoral canal. There are different types of hernia in small and large animals. Almost 71.4% of the hernial cases are due to trauma<sup>[1]</sup>. Repair of hernia in large animals are quite challenging one for surgeon<sup>[2]</sup>. Traumatic hernia is defined as bowel or abdominal organ herniation through a disruption of the musculature and fascia following adequate blunt trauma.

#### Clinical history and observations

A pregnant ewe was brought to Veterinary Dispensary (primary veterinary care centre), Burgur, Erode, Tamilnadu with a swelling in the left ventro – lateral abdomen. It was a two-year-old ewe and full term pregnant. Detailed history was collected to rule out the cause of the swelling. The owner reported a traumatic history two months prior to presentation. The swelling was gradually increasing in size since a week. On examination of the swelling, the uterus with foetal mass through the hernial ring was palpated. The ring was about 11 cm in length and 6 cm in width. The length of the hernial ring was 11cm and hence hernioplasty with nylon mesh was planned. Tetanus toxoid was administered as a prophylaxis. Surgery was planned 3 days post tetanus and antibiotic prophylaxis.

#### Materials and Methods

##### IV catheter placement

An 18-gauge 2-in catheter was used and secured to the neck with bandage. The catheter was checked before anaesthetic induction to ensure its functional status.

##### Preoperative preparation of patient

Ruminants properly fasted are less likely to bloat during recumbency and anaesthesia<sup>[3]</sup>. So, feed and water were withheld for 24 hours before surgery. It reduced the volume of rumen contents and hence pressure on the diaphragm and the incidence of regurgitation was also less during the surgical procedure.

##### Anaesthesia

A combination of xylazine (0.025-0.05 mg/kg) and ketamine (0.3-0.5 mg/kg) was administered intravenously. After administration of anaesthesia the sheep was recumbent in one and half minute and then premedicated with enrofloxacin (8mg/kg body weight) and meloxicam (0.5mg/kg body weight). The sheep appeared to be awake, but was oblivious to surroundings and procedures being performed.

Mild random head or limb motion was noticed, but purposeful movement or vocalization which was signs of an inadequate stun level necessitated additional drug<sup>[3]</sup>.

### Positioning and preparation of surgical sight

The sheep was then positioned right laterally and the surgical site was prepared aseptically using 5% povidone iodine and surgical spirit. This was followed by 2% lignocaine hydrochloride infiltration.

### Surgical procedure

Horizontal incision was made on the skin at the swollen area to expose the uterus that was present straight under the skin. The uterus was opened and a dead foetus was removed. Nitrofurazone and urea pessary was placed inside the uterus to prevent infection. The uterus was sutured using catgut size 1-0 with Cushing's suture pattern followed by lambert pattern. As this was a delayed presentation, adhesions were observed between hernial ring and uterus. All the adhesions were slowly cleared and the site was lavaged with normal saline and metronidazole infusion. As the hernial opening was larger in size, sterile nylon mesh was used and sutured with silk material in simple interrupted pattern. The subcutaneous tissue was sutured using catgut 1-0 in simple continuous pattern. Finally, the skin was closed with horizontal mattress suture pattern using non absorbable silk.

### Post-operative care

After completion of surgery, post-operative antibiotic cover for 10 days with Enrofloxacin @ 5mg/Kg IM once daily was recommended. The owner was advised to use fly repellent to avoid maggots in wound and to maintain the surgical site with topical antiseptics and bandaging.

### Result and Discussions

The ewe was followed for ten days post operatively and the surgical site healed without any gaping. Hard fibrous tissue could be felt on the area of placement of mesh indicating uneventful recovery on 10<sup>th</sup> day post surgically.

Application of bandage, clamps or ligatures may be helpful in some cases where the hernial ring is small. Surgical intervention (herniorrhaphy) is required in case of large hernial opening<sup>[4]</sup>. Surgical intervention (herniorrhaphy) is useful in case of large hernial opening but in extensive ventral abdominal hernia may require hernioplasty<sup>[5]</sup>. In the present case, hernioplasty was planned as the length of the hernial ring was 11cm in size. Avoiding recurrence is important for ewes because the ruralness of this species and owner's ignorance rarely permits a correct and long-term postoperative follow-up<sup>[2]</sup>. To avoid recurrence and favour hastened healing the nylon mesh was placed. Use of prosthetic materials is advised in case of hernias larger than 3 cm<sup>-1</sup>.

Sheep being maintained in small flocks by marginal farmers in rural Tamil Nadu and most of them are on grazing, possibility of trauma is unavoidable. For profitable rearing of sheep keen observation by the owners and timely expertise consultation with interventions are mandate. A good network of Veterinary expertise helped the ewe with complete recovery and the farmer being benefitted economically.

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