

Case report

RIGHT VENTRO-LATERAL MULTIPLE TRAUMATIC ABDOMINAL HERNIA IN A 1½ -YEAR-OLD BALAMI RAM: A CASE REPORT

Commented [L1]: MULTIPLE VETRO-LATERAL HERNIA IN A RAM

ABSTRACT

Hernia is a word derived from Latin referring to “bud” or “offshoot,” hence, hernia is defined as a protrusion of an organ, organ part or tissue through the structural envelopment housing it. Unless ~~eneascerated~~~~in~~~~carcerated~~, reducible hernias are generally painless. Umbilical as well as groin (inguinal and femoral) hernia can occur as a congenital defect, however, hernia can be acquired ~~also~~. Acquired hernia can be due to trauma, which can be through horn thrush, kick or violent contact with blunt object. Excessive abdominal distension due to frequent over feeding, pregnancy or violent straining during parturition can also predispose to hernia. The condition is reported to be common in dogs and pigs but less so in other domestic animals. A Balami ram, was presented with a chief complaint of a large bulge on the right side of the abdomen. The client revealed that, the condition was first noticed about 5 months prior to presentation as a small swelling. The ram was involved in a fight with its pen mate a bull. The patient was prepared for surgery, draped and longitudinal skin incision was made on each bulge, the hernia contents were evaluated and returned into their normal anatomical positions. The peritoneal sheet was then closed and the hernia ring edges refreshed and subsequently apposed using chromic catgut size 2 suture material. An uneventful recovery was achieved. Rams should not be housed together with bulls.

Commented [L2]: Rewrite. Abstract Does not need introduction. Only the presentation, material method, outcome and conclusion in few lines.

KEYWORDS

Abdominal hernia; herniorraphy; Ruminant; Surgical repair

INTRODUCTION

Hernia ~~is a word is~~ derived from Latin ~~refering~~~~referring~~ to “bud” or “offshoot;” ~~hence~~. ~~Hernia can be defined is~~ as a protrusion of an organ, organ part or tissue through the structural envelopment housing it. Unless ~~eneastrated~~~~in~~~~carcerated~~, reducible hernias are generally painless (Kalang *et al.*, 2021; Mcbee *et al.*, 2022). Umbilical as well as groin (inguinal and femoral) hernia ~~ean~~~~usually~~ occur as a congenital defects, ~~however~~, ~~hernia~~ can ~~also~~ be acquired. Acquired hernia can be due to trauma, ~~which can be through~~~~like~~ horn thrush, kick or violent contact ~~any~~ with blunt object (Bodinga *et al.*, 2021; Kalang *et al.*, 2021; Mcbee *et al.*, 2022). ~~Exsesive~~~~Excessive~~ abdominal distension due to frequent over feeding, pregnancy or violent straining during parturition can also predispose to hernia. The condition is reported to be common in dogs and pigs but less so in other domestic animals (Bodinga *et al.*, 2021; Kalang *et al.*, 2021; Hyowon *et al.*, 2023). Additional cause of hernia is abscessation in the abdominal wall (Duhu *et al.*, 2022). ~~Hernia can also be classified~~ ~~B~~ased on location, as the ventral hernia, ~~that has hernial ring is~~ ~~hernia~~ ventral to the skin folds of the stifle, while above the ~~the stifle skin folds is~~ ~~level~~ are regarded as lateral ~~abdominal wall~~ hernia (Sharun *et al.*, 2021). Abdominal hernia sac generally contains fat, omentum or/ and the intestine. Diagnosis can be obtained from the history, clinical signs and physical

examination. However, herniography and the use of ultrasonography are definitive (Kalang *et al.*, 2021; Heemskerck *et al.*, 2022)

Commented [L3]: ??? explain

CASE REPORT

A 1½-year-old Balami ram, from a flock of 15, weighing 44.4kg was presented to the Large Animal Clinic of the Veterinary Teaching Hospital, University of Jos, on the 13th of March 2024, with a chief complaint of a large bulge on the right side of the abdomen. The client revealed that, the condition was first noticed about 5 months prior to presentation as a small swelling. The ram was involved in a fight with its pen mate, a bull. The client revealed that the two had been in same pen until the fight, after which small bulge was noticed in the ram. The bulge appears to be consistently progressive in size especially recently. The patient was evaluated clinically, the vital parameters were unaltered. Multiple Protrusions on the right ventro-lateral abdominal wall region were felt as soft swellings. The patientram was then placed on dorsal recumbency and the multiple number of bulge were reducible on manoeuvring with a ring palpated into the abdominal cavity from each swelling. The patient was then booked for surgical reduction of the multiple hernias. Below are the vital parameter (Table 1) and the haemogram (Table 2)

Commented [L4]: Any sonograph??

Table 1: Patient's vital parameters on the day of presentation, intra-surgical (mean values) and post-surgical.

Commented [L5]: Not required?

Parameters	Pre-surgical	Intra-surgical	Post- surgical	Ref.values
Temperature(°C)	39.2	38.5	38.3	38-40
Pulse Rate (beats/min.)	76	78	56	70-90
Respiratory Rate (Cycle/min)	26	40	22	20-30

Table 2: Patient's Haemogram

Commented [L6]: Not required

Parameters	Patient values	Ref. values
PCV(%)	26	27- 45
TWBC(x10 ³ /µl)	10900	4800 – 8000
Seg.Neut(x10 ³ /µl)	7848	700-6000
Band Neut(x10 ³ /µl)	00	rare
Lymphocyte(x10 ³ /µl)	3052	2000-9000
Monocytes(x10 ³ /µl)	00	0 – 790
Eosinophils(x10 ³ /µl)	00	0 – 1000
Basophil(x10 ³ /µl)	00	0 - 3000

SURGICAL MANAGEMENT

The patient was prepared for surgery, the surgical site was ~~aseptically~~ prepared for ~~asepsis and~~ The patient was sedated using Inj. 0.2 mg Xylazine 0.22 mg/kg, IV. Anaesthesia was achieved using Inj. 10mg Lidocaine 2mg/kg, inverted “L” nerve block was achieved through local infiltration and the patient subsequently draped. Longitudinal skin incision was made on each bulge, the hernia contents were evaluated and returned into their normal anatomical positions. The peritoneal sheet was then closed and the hernia ring edges refreshed and then apposed using chromic catgut size 2 suture material. Subcuticular suture pattern was then applied and the skin closed using horizontal mattress suture pattern. Post-operatively the animal was ~~placed administered on~~ Inj. 200mg Amoxicillin 20mg/kg, IM, x 3/7 Q48hr, Inj. 12.5mg Diclofenac 1mg/kg, IM, x 3/7 and Inj. Vitamin C. 4mL, IV x 3/7. Skin sutures were removed on day 14 post-surgery

Commented [L7]: ???

Commented [L8]: ??

Commented [L9]: Not an appropriate material. Pattern of suturing? Hernia content??

Commented [L10]: ?? clarify

Commented [L11]: A banned drug should not be used

Commented [L12]: For what??



Fig. 1. A- Showing the animal on presentation; B- Affecte site been shaved; C- hernia ring been identified; D-triangular drapping; Eexposed hernia ring after skin incision; F-hernia rings been exposed

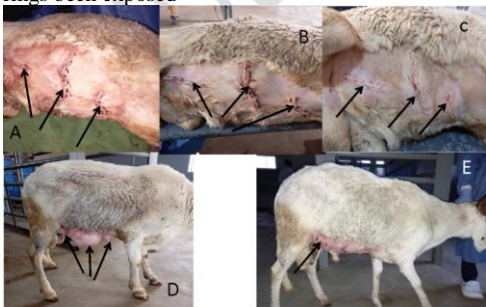


Fig. 2. A- The animal after surgical repair; B- seven days post surgery; C- 14 days post surgery; D- D- Animal prior surgical repair; E- Animal post surgical repair Inj. Tetanus toxoid 0.5ml IM.

Commented [L13]: Photo A,B,C,D of fig 2 not required

DISCUSSION

The obvious bulge on presentation and tenderness on palpation were similar to report by Fiordaliso *et al.* (2021) who noticed obvious hernia and tenderness of the mass on palpation. The hernia was observed to have been caused by blunt trauma about five months prior presentation, the presence of the hernia ring is specific for hernia as also reported by Sharun *et al.* (2021), who stated that, in confirming the diagnosis of a hernia, the especially the recognition of the hernial ring through palpation is the most critical part. Hence, from the case report it is obvious that hernia due to blunt trauma is unlikely to be incarcerated within five months of occurrence except where complications are not involved, Sato *et al.*, (2023) also report absence of any signs of incarceration in a calf three months after a bulge was noticed, he also reported, the absence of complications like abscess could be a factor. The occurrence of ventro-lateral abdominal hernia is relatively documented in literatures, however, multiple ventro-lateral abdominal hernia on same site of the animal is relatively rare. Mcbee *et al.* (2022) report repair as the definitive treatment for hernia and also, the use of mesh to relieve tension in hernia repair. Hernioplasty an alternative surgical repair was not employed because on reduction of the multiple rings it was observed that tension wasn't required. The preference for longitudinal incision was aimed at reducing tension on the suture line, this is to prevent an incidence as reported by Sewoyo *et al.* (2023) who documented the occurrence of incisional hernia which is a case of recurrence after repair. The hernia rings were observed to have relatively significant sized of healthy inter-hernia-ring musculature, hence, the decision to close each ring individually. As linking the three rings together could result in a larger wound area for wound healing process as well as traumatizing healthy intact inter-hernia-rings tissue. The linking of the three rings could also expose the incision line to relatively more pressure (weight) from the viscera, however, managing the rings individually tends to distribute the visceral weight on both the suture line and the healthy inter rings tissue. Munif *et al.* (2022), reported suturing large opening which cannot be closed by suturing and may require mesh, it was possible due to the availability of sufficient surrounding muscle flaps to adequately apposed the opening during the operation. The suturing of the peritoneal sheet prior apposition of the abdominal muscles was aimed at preventing the chances of adhesions between the viscera and the abdominal wall.

Commented [L14]: When reducible, then it is not incarcerated.

CONCLUSION

Farmers should be discouraged from housing rams with bulls in the same pen. Hernia due to blunt trauma is unlikely to be incarcerated within five months of occurrence in a ram, furthermore, longitudinal incision should be avoided as much as possible to reduce the chances of surgical wound dehiscences.

Commented [L15]: Not always true.

REFERENCES

Bodinga, H. A., Abubakar, N., Ahmad, U. S. and Atabo, S. M. (2021). Ventral abdominal hernia in a 2- year old Balami ewe. Nigerian society for animal production (NSAP) 46TH Annual conference – Dutsin-MA 2021 book of proceedings

Duhu, D. C., Eze, A. C. and Ugwu, N. E. (2022). Dystocia induced by ventral abdominal hernia in a periparturient goat: a case report. Nigerian Veterinary Journal, 43 (1): 71 - 75

Fiordaliso, M., Ahmad, S., Simic, S., Zoubi, H. and Karaorman, M. (2021). A case report of incarcerated inguinal hernia: Amyand's hernia with adenocarcinoma tumor International Journal of Surgery Case Reports 81 (2021) 105716

Heemskerck J, Leijtens, J. W. A. and Steensel, V. S. (2023). Primary lumbar hernia, review and proposals for a standardized treatment. Journal of Abdominal Wall Surgery, 2:11754

Hyowon, K. I. M., Seungjun, L. E.E., Seohyun, C. H. O., Kihoon, K. I. M., Kidong, E. O. M. and Jaehwan, K. I. M. (2023). Abdominal hernia as a rare manifestation of feline mammary gland carcinoma: a case report The Journal of Veterinary Medical Science. 85(10): 1116–1120, 2023

Kalang, J. J., Adaji, O. G., Babalola, S. A., James, A. A. and Avazi, D. O. (2021). Management of Omphalocele in a 4 months-old Nigerian Indigenous Breed of Dogs and a 3 months-old Alsatian Puppy, Indian Vet. J., November 2021, 98 (11) : 35 - 37

McBee PJ, Walters RW, Fitzgibbons RJ. (2022). Current status of inguinal hernia management: A review. Int J Abdom Wall Hernia Surg 2022;5:159-64

Munif, M. R., Masud, R. I. and Tasnim, S. (2022). Surgical treatment of right lateral abdominal hernia in a heifer. Iranian Journal of Veterinary Science and Technology, (14)3

Sato R, Kim S, Okada S, Ikedo T, Satoh H and Steiner A (2023) Case report: Abdominal hernia repair using a surgical wire and an autologous omental graft in a Japanese Black calf. Front. Vet. Sci. 10:1119034

Sewoyo, P. S., Purwitasari, M. S., Rabiulfa, P. and Wirata, I. W. (2023). Incisional hernia case management in a local cat. Journal of Applied Veterinary Science and Technology: 04(2).2023.115-121

Sharun, K., Manjusha, K. M., Kumar, R., Saxena, A. C., Kinjavdekar, P., De, U. K., Pawde., A. M., and Amarpal. 2021. Traumatic lateral hysterocele complicated with intestinal adhesions in a pregnant goat. Large Animal Review 2021; 27: 291-294 291