

<https://doi.org/10.33003/jaat.2026.1202.08>

EMERGENCY REPAIR OF A RUPTURED UMBILICAL HERNIA IN A 6-WEEK-OLD PIGLET: CASE REPORT AND OUTCOME

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ABSTRACT

A six-week-old Nigerian local breed piglet was presented to the Veterinary Teaching Hospital of the University of Jos, with an avulsed umbilical hernia exposing the intestines to the external environment. After evaluation of the patient, the condition was found to require surgical management. The piglet was sedated with xylazine administered at 0.15ml/kg, intramuscularly. The skin at the operation site was cleaned with antiseptic solution (Dettol®), shaved and draped. The skin was infiltrated locally with lignocaine plus adrenalin and the exposed intestine cleaned with normal saline and returned back to the abdominal cavity. The abdominal muscles were subsequently sutured with Chromic Catgut in a continuous non-interrupted pattern. The subcutaneous tissue was sutured with chromic catgut using a subcuticular suture pattern; the skin was sutured with nylon using the horizontal matrix pattern. The post-surgical care included the administration of penicillin-streptomycin at 1.0 ml per 10kg intramuscularly for five days. The piglet was gruel fed during this period and the skin stitches removed 12 days later with the piglet making a full recovery.

Key Words: Avulsed, Hernia, Intestines, Piglet, Surgical, Umbilicus.

INTRODUCTION

Hernias are congenital or acquired defects in anatomical structures that allow abnormal tissue or organ protrusion (Rings, 1995). Umbilical and scrotal hernias are common anatomical defects found in piglets on pig farms (Thailer *et al.*, 1996) and umbilical hernia occurs as a result of weakened muscles around the umbilical stump or navel area which causes the umbilical opening not to close properly.

Hernias are classified as direct or indirect depending on whether intestinal loops outside the abdomen are covered by peritoneum or vaginal tunic, or intestines directly contact the skin (Grindflek *et al.*, 2006). Intestines in direct contact with skin stimulate formation of adhesions. Umbilical hernias, of any size, are usually direct and therefore complicated by adhesions that can interfere with normal digestion.

Several factors contribute to the occurrence of this defect which includes abnormal stretching of the umbilical cord, environmental and infection of the umbilical stump. The role of genetics is not completely clear. The genetic control of umbilical hernias is not entirely clear. A few specific genes have been shown to associate with this condition (Zhao *et al.*, 2008). However, in general this condition is not due to simple inheritance of a few genes. Environmental conditions definitely play a role in the incidence of this defect. It is thought that environmental compromises such as navel infections early in life may be linked to the incidence of this condition.

Ruptured umbilical hernia can cause pain to piglets, renders pigs less valuable in the market and can lead to mortality. Sustainability and welfare are now major factors in livestock production based on the belief that animals can suffer pain (Boyle and Stevenson, 2025).

A moderate amount of adhesion should only somewhat reduce the pigs' performance and their carcasses should be of similar value to pigs that do not have this condition. However, problems arise if the intestines are ruptured during the slaughter process and the intestinal contents contaminate the carcass. Often these pigs are sent to specialty harvest facilities that can accommodate them and slaughter them with minimal risk of carcass condemnation. This re-sorting in the market chain can result in value reduction. This study describes the successful management of umbilical hernia in a piglet.

CASE MANAGEMENT

Case History

A six-week-old local Nigerian piglet was presented to the Veterinary Teaching Hospital of the University of Jos, Nigeria with a ruptured umbilical hernia. The piglet was presented less than an hour to the hospital after the incidence. It was reported that a swelling was observed to have developed in the umbilical area about 3 months ago, which had gradually increased in size and makes contact with object on the floor as it moves around until discovered ruptured. At presentation the intestine was making contact with the floor and exposed to the external environment. Physical examination showed the piglet to be alert with no obvious signs of pain or shock, the ocular membrane remained pink with no sign of hemorrhage from the

exposed gut, and also no signs of adhesions, intussusceptions or gangrene of the intestine were observed.

Management

After evaluation of the piglet the case was found to require surgical intervention. The piglet was sedated with 0.15ml/kg of xylazine administered intramuscularly and placed on dorsal recumbency. The exposed intestine was cleaned using normal saline with attached soil and dirt particles completely removed. The skin at the operation site was cleaned with the antiseptic solution (Dettol®), shaved and draped.

The tissue around the operation site was locally infiltrated with lignocain plus adrenalin and the intestine carefully placed back in to the abdominal cavity. The thorn abdominal muscles were sutured with Chromic Catgut in a continuous non interrupted pattern. The subcutaneous tissue was sutured with Chromic Catgut in a subcuticular pattern and the skin sutured with nylon using the horizontal matrix pattern.

Post-surgical care

The piglet was gruel fed and administered penicillin-streptomycin at 1.0 ml/10kg intramuscularly for five days. The skin stitches were removed 10 days later and the piglet making a full recovery.

DISCUSSION

The intestines of the piglet on clinical evaluation was observed to have protruded through the abdominal muscles and skin opening similar to the report of (Miller *et al.*, 1995), which refers to hernia as the protrusion of body tissue or organ through the structures that normally contains it.

When out pouching of umbilical hernias formed in piglets is large enough, it can touch the floor as the piglet moves in search of feed and water. The out pouching are commonly formed and observed at the grower stage as reported by (Searcy- Berned *et al.*, 1994).

Depending on the management system in place, laceration or tears can occur when it comes in contact with sharp objects leading to pain and suffering. The condition can also be a welfare issue in production as moderate size hernias can affect movement leading to abdominal pain and discomfort; which is consistent with the report of (Boyle and Stevenson, 2025), that welfare are now major factors in livestock production based on the belief that animals can suffer pain. The fact that umbilical hernia can lead to economic loss is in agreement with the findings of (Straw *et al.*, 2008), because of its effects on piglet performance and market value.



Plate I. Exposed intestines from thorn umbilical hernia



Plate II. Suture of ruptured umbilicus and skin.



Plate III. Surgical repair completed.

CONCLUSION

Umbilical hernias occur due to weakened supportive muscles around the umbilical stump (navel). This causes the umbilical opening not to close properly and the intestine protrudes to form the ball like structure seen. This condition can cause abdominal pain and discomfort to the animals and if large and not corrected on time can be thorn if it comes in contact with sharp objects or surfaces as the piglets move around. A hernia repair returns the intestines to its proper place and fixes the weakened area of muscles tissue, which in this case was achieved surgically.

Acknowledgments

The authors which to appreciate Dr. Paul Sambo for his contribution to the surgical and post-operative management of the condition and the students that were on clinical posting when this condition was handled at the large animal clinic of the hospital.

REFERENCES

- Boyle, L., and Stevenson, P. (2025). Sustainability of livestock production: raising the profile of animal welfare and the risks with “techno-fixes”. *Animal Frontiers*, 15(5), 47–57.
- Grindflek E, Moe M, Taubert H, Simianen H, Lien S and Moen T, (2006). Genome-wide linkage analysis of inguinal hernia in pigs using affected sib pairs. *BMC Genetics*.7:25 doi:10.1186/1471-2156-7-25. Retrieved at <http://www.biomedcentral.com/1471-2156/7/25>.
- Manteca X (1998). Neurophysiology and assessment of welfare. *Meat Science*. 49 (1): 5205-5218.

- Miller P, Mezwa D, Feczko P, Jafri Z, Madrazo B. Imaging of abdominal hernias (1995). Radiographics. 15:333–347.
- Rings DM. (1995). Umbilical hernias, umbilical abscess and urachal fistulas. Surgical consideration. Veterinary Clinician North America food Animal pract. 11: 137-148.
- Searcy-Bernal R, Gardner IA, and Hird DW, (1994). Effects of and factors associated with umbilical hernias in a swine herd. Journal American Veterinary Medical Association. 204(10):1660-4.
- Straw B, Bates R, May G. Anatomical abnormalities in a group of finishing pigs: Prevalence and pig performance (2008). Journal Swine Health Production. 17:28–31.
- Thailer G, Dempfle L, Hoeschele I, (1996). Maximum likelihood analysis of rare binary traits under different modes of inheritance. Genetics. 143:1819-29.
- Zhao, X, Du, Z-Q, Vukasinovic, NV, Rodriguez, FR, Clutter, AC and Rothchild, MF, (2008). Candidate gene association for hernia and cryptorchidism in commercial lines of pigs. Journal of Animal Science. 86 (Suppl. 2). Abstr.