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Surgical management of umbilical hernia in pig: A case report

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Abstract
A three month old piglet was presented to Veterinary Dispensary, Ramohalli, Bangalore with a history of small swelling on umbilicus and the bulge increase in size as piglet grows. Clinical examination revealed a large soft reducible swelling on umbilicus region. On the basis of history and clinical examination the case was diagnosed as umbilical hernia. Herniorrhaphy was performed under general anaesthesia. Animal recovered uneventfully.

Keywords: Umbilicus, reducible, hernia, pig

1. Introduction
Hernia is a protrusion of the contents of a body cavity through a weak spot of the body wall. The hernia has three constituents, which includes hernial ring, hernial sac which was composed of the peritoneum and hernial contents which may include a loop of intestine or a portion of the uterus, stomach or omentum. According to their location, hernias were classified as umbilical, inguinal, scrotal, ventral, peritoneal or diaphragmatic hernia. Two more common anatomical defects that occurs in pig farms are scrotal hernias and umbilical hernias. These hernias typically occur at frequencies of 1.7 to 6.7%, but in some instances can increase or "spike" for a variety of reasons (Thailer *et al*., 1996) [3]. Umbilical hernias occur due to weakened supportive muscles around the umbilical stump or navel area of the pig. This causes the umbilical opening not to close properly and intestines protrude through the intestinal wall to form the "ball-like" structure which is oftenely seen in pig. The frequency ranges from 0.4 to 1.2% (Searcy *et al*., 1994). A primary diagnosis was made from the history and by palpation of the hernial region. These types of defects were that they often render the pig less valuable as a market pig and can cause morbidity and possibly mortality. The present study describes a successful management of umbilical hernia in a piglet.

2. Case History and Observations
Three month old piglet was presented to the Veterinary Dispensary, Ramohalli, Bangalore with a history small swelling on at the ventral aspect of umbilicus and the bulge increase in size as piglet grows. Clinical examination revealed a large soft reducible swelling on umbilicus region (Fig. 1). Clinical parameters like heart rate, respiratory rate and rectal temperature were within the normal physiological limits. On the basis of history and clinical examination case was diagnosed as umbilical hernia was decided to correct surgically.

3. Surgical Treatment
The piglet was sedated with Inj. xylazine hydrochloride @ 2 mg/kg body weight and general anaesthesia was induced by Inj. ketamine hydrochloride @ 30 mg/ kg body weight intramuscularly. Animal was restrained on dorsal recumbency. The surgical site was prepared aseptically with 7.5% povidine iodine. An elliptical skin incision was made around hernia and the skin bluntly dissected from the subcutaneous tissue. The hernia sac was then dissected to locate the hernia ring and kelotomy was performed. The organs herniated were intestine and omentum (Fig. 2). Adhesions were removed by blunt dissection and organs were repositioned. The edges of the hernia ring were debrided and closed with simple interrupted suturepattren using number 2 chromic catgut, the skin was closed with number 2 monofilament polyamide (Fig. 3). The Post operatively animal was kept on antibiotic strepto-pencillin @ 2 ml /day for 7 days and Melonex @ 0.2mg/day intramuscularly for a period of 3 days along with regular

antiseptic dressing of surgical wound using povidine iodine for 10 days. Suture were removed on 10th day post-operatively. The piglet recovered uneventfully without any complications.

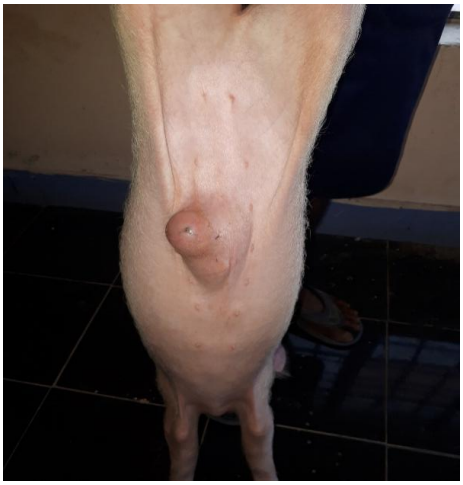

Fig 1: Photograph showing soft reducible swelling on ventral umbilical region.

Fig 2: Photo graph showing organs herniated

Fig 3: Photo graph showing skin closed with monofilament polyamide.

4. Discussion

The exact incidence and cause of umbilical hernia is still unknown. A "familial" cause has been suggested and a few specific genes have been recently shown to associate with this condition (Zhao *et al*., 2008) [4]. 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 was thought that environmental compromises such as navel infections early in life may be linked to the incidence of this condition. Proper sanitation and hygiene may have a greater chance of reducing the incidence of this condition than trying to eliminate certain boars or dams. In small pigs with a very small umbilical hernia, a blister such as a 7% iodine solution, a mild acid or mercuric iodine was often placed on the umbilicus. This will set up an acute inflammatory reaction which will often produce enough connective tissue to close the hernia. Sterile saline solutionor a counter-irritant such as hypodermin may be injected into the hernia ring and also cause enough of a response to close the ring. Large umbilical hernias can strangulate when a loop of intestine or portion of another body organ, get pinched off within it. Such cases need to be surgically removed as it involves life threatening. (Monsang *et al*., 1994) [1] In the present case, hernia of this kind may be due improper management of umbilicus during the first few days after birth. Herniated pigs represent an economic loss, as they are generally sold at a lower price and slaughtered at a younger age due to the risk of ulceration and abscessation of the hernial sac or strangulation of the hernial contents (Searcy-Bernal *et al*., 1994) [2]. Hernia repair would permit recovery of affected animals and limit economic loss.

5. Conclusion

Umbilical hernia in pigs causes economic loss in piggery farm on the time slaughter. Early recognition of the problem and proper surgical technique help to reduces further complications. A successful surgical management of umbilical hernia in a 3 months oldpig is reported.

6. Acknowledgment

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