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Surgical Management of Umbilical Hernia in Pig: A Case Report

Babalola Samuel Adeola and Gorge Idara Sunday

Department of Veterinary Surgery and Theriogenology,
Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria

Astract: This clinical case report described the management of congenital umbilical hernia in an 8 weeks old piglet at a private pig farm in Uyo, Akwa Ibom State of Nigeria. This condition was first noticed when the piglet was 3 weeks old as small bulge at the navel and the bulge increase in size as the piglet grows. Physical examination revealed a non reducible umbilical hernia complicated with navel abscess. Following sedation of the piglet, it was restraint on dorsal recumbency. The condition was then surgically treated. The piglet recovery was uneventful with no reoccurrence and complications observed in 3 weeks follow up period.

Key words: Umbilical Hernia · Piglet · Abscess · Navel · Elliptical Skin Incision

INTRODUCTION

From the surgical stand point, hernia is an abnormal opening in a body wall and no requirement for displacement of visceral organs [1, 2]. A hernia consists of; i. Hernia ring which may be a persistent prenatal opening or an accidental rupture in the abdominal wall. ii. Hernia sac, which is made up skin, muscle fibres or fibrinous connective tissues and sometimes the peritoneum. The hernia sac also has a neck, body and fundus. iii. Hernia content, which may be a loop of intestine (Enterocele), omentum (Epitocele) or peritoneal fluid [1, 2]. Hernia may also be described according to their pathologic content; i. Reducible hernia, is one in which the content can be completely and easily returned into the abdominal cavity. ii. Irreducible hernia, is one in which the content cannot be completely returned into the abdominal cavity because the content is incarcerated or strangulated or there are adhesions between the content and the hernia sac or ring [1].

Two of the more common anatomical defects that occur on 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 reason [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 often seen on the pig. The frequency ranges from 0.4 to 1.2% [4]. In porcine species, umbilical hernia is often associated with navel abscess thus requiring immediate attention. Even those not complicated by navel abscess may develop some ulceration from trauma from injuries from floor and other objects.

Case History and Clinical Examination: On a routine visit to a private pig farm in Uyo town in Akwa Ibom State of Nigeria, attention was drawn to an 8 weeks old piglet with a bulge at the ventral abdominal part at the navel. History revealed that this condition was first noticed when the piglet was 3 weeks old as small bulge and the bulge increases in size as the piglet grows. Physical examination revealed a non reducible umbilical hernia complicated with abscess when the piglet was restraint on dorsal recumbency on the examination table (Fig 1).

Surgical Management: The piglet is a female about 8 weeks old and weighs 8kg. The piglet was sedated using ketamine (Ketamine Hydrochloride® 50mg/ml. ROTEX MEDICA, TRITTAU. GERMANY) at a dose rate of 15 mg/kg intramuscular and physically restraint on dorsal recumbency. The surgical site was prepared aseptically Following infiltration of the surgical site with local anaesthetic, an elliptical skin incision was made around the hernia sac and the skin bluntly dissected from

Corresponding Author: Babalola Samuel Adeola, Department of Veterinary Surgery and Theriogenology, Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria.

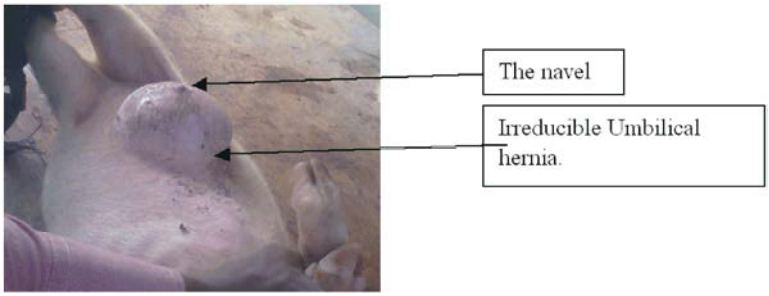

Fig. 1: Piglet on dorsal recumbency showing umbilical hernia complicated with abscess (Arrowed).

Fig. 2: Closure of umbilical hernia

the subcutaneous tissue and reflected taking care not to rupture the capsule of the abscess.thus avoiding contamination from the abscess. The associated abscess was then carefully dissected out encapsulated. The hernia sac was then dissected to locate the hernia ring and enlarged to allow replacement of the hernia content which was the intestine back into the abdominal cavity after careful removal of all adhesions. The edges of the hernia ring were debrided and closed with re-enforced simple continuous suture using number 2 chromic catgut, the skin was closed with horizontal mattress suture using number 2 nylon after trimming off the excess skin left by the hernia and abscess (Fig 2). The piglet recovered uneventfully without any complications.

Post Surgical Management: The piglet was kept in a separate pen until complete healing of the surgical wound. The surgical wound was managed topically for 2 weeks with pofidone iodine. Penicillin Streptomycin (PEN-STREP 20/20®, V.M.D. s.a./n.v. Hoge Mauw 900, B-2370 Arendonk Belgium) antibiotic was administered for 7 days at a dose rate of 1ml/25kg. Ketorolac Tromethamine (DOLAC®, CADICA PHARMACEUTICALS, 1389, DHOLKA-387810, INDIA) analgesic was also giving at a dose rate of 2 mg/kg. The pig recovered uneventfully with no complication observed in 3 weeks follow up period.

DISCUSSION

The occurrence of the umbilical hernia in this piglet agrees with Gyang [1] and Searcy *et al*. [4]. That in porcine species, umbilical hernia is often associated with navel abscess. 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 often seen on the pig.

The choice of surgical technique was as described by Gyang [1] and Hassan and Hassan [2]. The choice of medication was as described by Michael [5].

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