

Surgical Management of Omphalocele in White Yorkshire piglet

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Abstract

A piglet was presented with history of swelling at umbilical region since 15 days. Clinical examination revealed soft reducible content with a two finger wide rent. On the basis of history and clinical examination the case was diagnosed as umbilical hernia (omphalocele). Herniorrhaphy was performed under general anesthesia. Animal recovered uneventfully. This communication reports successful surgical management of a case of omphalocele.

Keywords: Herniorrhaphy; omphalocele; piglet; umbilical hernia; vast over pant suture pattern

Introduction

Protrusion of contents of body cavity through umbilicus beneath the skin is referred as umbilical hernia (Purohit *et al.*, 2020). It may be congenital or acquired and commonly reported in foals, calves, pups and pigs (Dennis *et al.*, 1968, Purohit *et al.*, 2015). In pigs, the incidence of umbilical hernias is 1.7 percent to 6.7 percent (Searcy *et al.*, 1994; Mattson *et al.*, 2011). It is documented as most common developmental defects in swine (Searcy-Bernal *et al.*, 1994; Edwards and Mulley, 1999). Researchers documented its association with hereditary genes (Zhao *et al.*, 2008), weakened supportive muscles around the navel area and poor management causing naval infection (Straw, 2008). It is one of the serious problem in pig rearing as it affects the animal's welfare and leads to significant economic loss on a worldwide scale. It is not only affect the animal's growth but also increases chances of morbidity due to infections along with increase chances of mortality (Nowacka-Woszuik, 2020). Herniorrhaphy and hernioplasty are documented well to repair hernia in domestic animals (Purohit *et al.*, 2012; Remya *et al.*, 2013; Singh *et al.*, 2020). Present case report describes successful surgical correction of reducible hernia in white Yorkshire piglet.

History and Clinical Observations

A three months old male white Yorkshire piglet was presented with history of large swelling at umbilical region since 15 days. Feed and water intake was normal. Defecation and urination was also normal.

Physiological parameters were within normal range. Palpation revealed soft reducible content with a two finger wide hernia ring (Fig.1). Ultrasonographic examination, revealed the intestine and fatty tissues in sac (Fig. 2). On the basis of history and clinical examination case was diagnosed as umbilical hernia and herniorrhaphy was planned.

Treatment

Animal kept 12 hours off feed before surgery. Antibiotic Ampicillin and Cloxacillin 250 mg was administered IM 30 minutes before anesthesia. Surgical site was prepared aseptically with Chlorhexidine (Fig. 3). Pre-anesthetic agent Glycopyrrolate at 0.01 mg/kg b.wt. and Xylazine at 2 mg/kg b.wt. were administered intramuscularly at interval of 10 minutes. Anesthesia was induced using Ketamine hydrochloride at 20 mg/kg b.wt. and maintained on Diazepam-Ketamine (1:2) combinations during the surgical procedure by catheterizing ear vein. Animal was restrained in dorsal recumbency. Linear incision was made over the skin of hernial sac. Adhesions were separated and blunt dissection was carried out to reach hernial ring (Fig. 3). Hernial contents were intestine and omental fat. Adhesions were broken and hernial contents were reposed back into abdominal cavity. Hernial ring was freshened. It was sutured with silk no 2 in vast over pant pattern followed by subcutaneous suturing and skin was closed by nylon no-1 in horizontal interrupted suture pattern. Post-surgical antibiotic Ampicillin and Cloxacillin 250 mg IM for 5 days BID and Ketoprofen at 3 mg/kg b.wt. IM, OD for 3 days. Owner was advised for

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Fig.1: Soft reducible swelling at the region of umbilicus



Fig. 2: Hypoechoic mass at the swelling region of umbilicus



Fig. 3: Aseptic preparation of surgical site. Animal restrained in dorsal recumbency



Fig. 4: Exposure of hernial ring

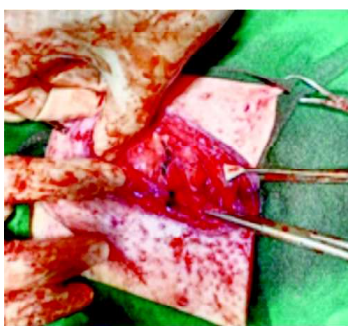


Fig. 5: Vast over pant suture over the hernial ring



Fig. 6: Closure of skin with horizontal mattress suture pattern.

regular cleaning of wound with Povidone iodine solution and topical fly repellent spray was also advised. Suture was removed 14 days post-operatively. Animal recovered uneventfully.

Discussion

Umbilical hernia is one of the most common developmental defects seen in swine (Searcy-Bernal *et al.*, 1994; Edwards and Mulley, 1999). Condition of umbilical hernia in pig were associated with hereditary gene (Zhao *et al.*, 2008), weakened supportive muscles around navel area, mismanagement causing naval infection (Ronald and Barbara, 2008). In present case, the exact cause of umbilical hernia was not known but it may occur due to improper management of umbilicus during first few days after birth. In large umbilical hernias there are chances of strangulation when loop of intestine or portion of another body organ, get pinched off within hernia sac (Monsang *et al.*, 2014).

A large sized hernia was surgically managed and described by Monsang *et al.* (2014). The herniated content was intestine along with omentum fat that was similar to the finding reported by Amith and Vidyasagar (2020). Hernial ring can be best closed by vast over suture pattern/overlapping suture pattern (Fesseha, 2020). In present case hernial ring was closed by vast over suture pattern. The present case describes successful surgical management of umbilical hernia in three months old piglet.

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Received on:11.11.2021
Accepted on:16.01.2022