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A Rare Case of Umbilical Hernia in a Chinchilla Rabbit (*Oryctolagus cuniculus*): Its Surgical Management

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Abstract

A case of umbilical hernia in a 4 months old Soviet Chinchilla rabbit was presented in the Department of Teaching Veterinary Clinical Complex, R.K.Nagar, Tripura, with a complaint of non-painful, reducible swelling observed since 5 days around the umbilical region. Appetite of animal was normal and all the clinical parameters were within the normal physiological limits. Palpation revealed presence of hernial ring and its contents which confirmed umbilical hernia. Surgical reduction was done under xylazine-ketamine anaesthesia and the animal made an uneventful recovery.

Keywords: Chinchilla; Hernia; Herniorrhaphy; Umbilical; Rabbit

Introduction

Hernia is the protrusion of an organ or tissue through an opening (Tiwari *et al*., 2004) caused by a tear in the abdominal wall or through natural opening like the inguinal canal or femoral canal (Kemparaja, 2003). Hernia occurs in all domestic animals most commonly in foals, pigs, calves and pups (Venugopalan, 2007), but very rarely reported in laboratory animals like rabbit. There is paucity of literature regarding repair of umbilical hernia in rabbit is so far.

Umbilical hernias occur due to weakened supportive muscles around the umbilical stump or navel areas. This causes the umbilical opening not to close properly and intestines protrude through the intestinal wall to form the "ball-like" structure (Ronald and Barbara, 2008). When the intestines come in direct contact with skin will stimulate formation of adhesions that can interfere with normal digestion if it is not corrected at appropriate time. The size of hernia varies depending on the extent of the umbilical defect and the amount of abdominal contents contained within it. The etiology in both large and small animals is likely to have a genetic component; however, cutting the umbilical cord too close to the abdominal wall or leaving the cord untreated after birth are also considered as other possible causes. Correction of any type of hernia is necessary as it will improve the welfare and condition of the suffering animals. In the present paper, a case of umbilical hernia and its surgical

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management in a rabbit is described.

Case History and Observations

A 4 months old Chinchilla rabbit weighing about 780g was presented to the Teaching Veterinary Clinical Complex, R. K. Nagar, Tripura, with the history of large swelling present at the ventral portion of abdomen at the point of umbilicus (Fig.1) which was observed since 5 days back. On first hand palpation, the swelling was soft, reducible and non-painful with presence of hernial ring and hernial contents. All the clinical parameters were within the normal physiological limits and the rabbit had a normal appetite. As the case was confirmed by palpation, signs and symptoms, no other techniques were used as also taking into considerations of the cost and condition of the owner. Ac-

Fig.1. Hernia seen at the ventral portion of the abdomen

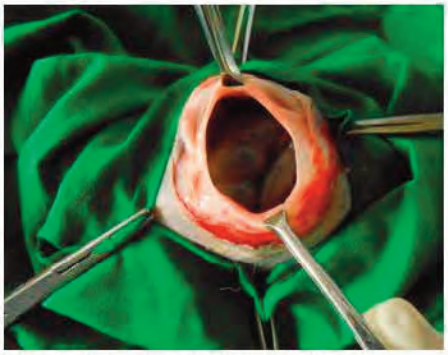

Fig.2. Exposing the hernial ring

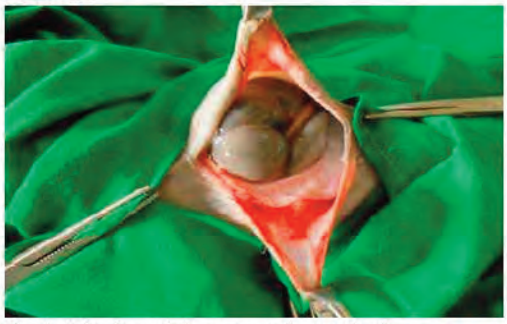

Fig.3. The hernial content (Intestine)

Fig.4.Overlapping mattress suture

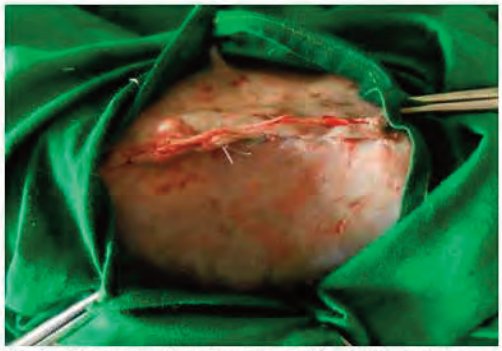

Fig.5. Closure of cutaneous skin with nylon

Fig.6. Povidone iodine bandaging

Fig.7. Recovery from anaesthesia after surgery

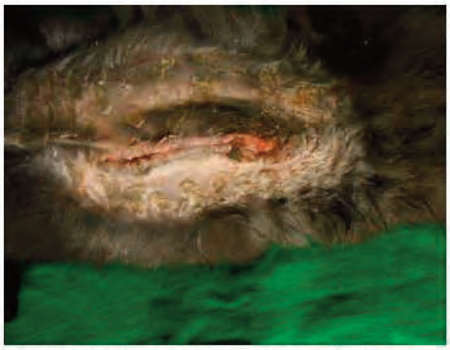

Fig.8. Healing of wound on 7th day post-operative

cordingly, radical surgery was planned for its surgical correction to relieve the discomfort and prolong the life of the patient.

Treatment and Discussion

Prior to surgery, the animal was fasted for food and water was with held for about 10 and 6 hours, respectively. After 10 minutes of atropinization (atropine sulphate at 0.02 mg/kg, I.M.), animal was sedated with xylazine at 5 mg/kg b.w., IM, followed by induction with ketamine HCl at 50 mg/kg b.w., I.M. Maintenance was done with diazepam and ketamine combinations (1:2 ratios) till the end of the surgical procedure. Under aseptic condition, a scalpel incision was given over the hernia and skin edges were refracted and separated from the peritoneal sac up to the hernial ring by blunt dissection to visualize the hernial mass. The hernial content consisted only of intestine (Fig. 2) which was reduced through the hernial ring (Fig. 3). The peritoneal sac was ligatured close to the hernial ring and amputated. The ligatured stump after amputation was pushed into the abdomen and hernial ring was closed in overlapping mattress pattern using black braided silk (Fig. 4). Cutaneous incision was closed using nylon in horizontal mattress pattern (Fig. 5) and wound was closed with povidone iodine bandage (Fig. 6). The animal recovered from anaesthesia without any complication within half an hour (Fig. 7). Postoperatively, a course of antibiotic (Cefpet Tablet orally) and Meloxicam was injected for 5 and 3 days, respectively. The skin sutured was removed on 7th day after the wound healed completely (Fig. 8).

The exact incidence and cause of umbilical hernia is still unknown. Certain family lines have a higher incidence of umbilical hernias suggesting at least a partial genetic predisposition to the condition. Congenital umbilical hernias are the most common of all hernias. Small umbilical hernias are not serious and sometimes close by themselves as the animal grows. Large umbilical hernias can strangulate when a loop of intestine or portion of another body organ, get pinched off within it. Therefore, large umbilical hernias need to be surgically removed as it involves life threatening. Small sized hernia repair by used of elastrator ring in swine has been reported (Pollicino, 2007). However, in our present case, herniorhaphy was done with the use of black braided silk in overlapping mattress pattern (Lakshmipathy, 1975) to correct the large hernial ring after reducing the content into the abdominal cavity. No serious complication was observed during the post-operative care and the wound healed completely on the 7th day.

Therefore, repair of umbilical hernia by the methods carried out in this case may be used effectively taking into considerations the cost benefit ratios and condition of the owner as well. However, other suture materials and suture pattern may be tried to develop the most effective methods for repair of such defect in rabbit.

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