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Synthetic Mesh with Fascial Overlay Grafting for Repair of Umbilical Hernia in an Ongole Calf

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Abstract

An 8-month-old ongole male calf presented to the clinics with a swelling at the umbilicus was diagnosed to have incisional umbilical hernia. Hernioplasty was performed under light plane of anesthesia using a nylon mesh with fascial overlay and observed no further recurrence of the condition. The clinical signs, surgical procedure and outcome of the case were discussed.

Keywords: *Umbilical hernia, hernioplasty, fascial overlay, hernial ring*

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INTRODUCTION

Protrusion of the contents of body cavity through a normal or abnormal opening of the body wall is termed as hernia. Umbilical hernia is a type of external hernia, which is usually seen in young animals. The etiology may be congenital or acquired. The umbilical hernia noticed in young calves is usually associates with umbilical sepsis [1]. Hernia with larger hernial ring requires safe closure with minimal tension to prevent wound dehiscence and recurrence [2]. Use of prosthetic material to close the hernial ring was reported by many authors since 1960s. In the present case, an extensive umbilical hernia was repaired by hernioplasty using synthetic (Nylon) mesh and fascial overlay technique.

HISTORY AND CLINICAL SIGNS

An eight-month-old ongole male calf was presented to the clinics with a complaint of swelling at the umbilicus region (Figure 1). It was said to be operated twice at the same site for treating pervious urachus for the first time and followed by 20 days for incisional hernia. No physiological deviation was noticed in the animal.

Physical examination revealed an extensive hernial ring of 10×15 cm size with herniated omentum and ventral sac of rumen. Later plain radiograph of the abdomen confirmed the findings of physical examination. Elective surgery was planned to repair the condition by hernioplasty.

Fig. 1: *An Extensive Umbilical Hernia in an Ongole Calf.*

TREATMENT AND DISCUSSION

Animal was anesthetized by giving intravenous injection of ketamine hydrochloride at the dose rate of 2.5 mg/kg body weight and diazepam at the dose rate of 0.125 mg/kg body weight. A semi elliptical incision was given along one side of the hernial ring followed by reflection of skin, subcutaneous tissue and fibrous hernial sac across the ring to expose the opposite side of hernial ring. Omental adhesions were bluntly separated and reduced along with ventral rumen sac into the abdomen. A sterile double folded nylon mesh was placed into the defect of body wall by retroperitoneal method (Figure 2) and the edges were sutured all along the circumference of hernial ring with the help of No. 1 polyglactin 900. The skin edges were

apposed by mattress sutures using No. 1 braided silk (Figure 3). Postoperatively, the animal was given streptopencillin @ 100 mg/10 kg Bwt I/M OD was given for 5 days and melonex @ 0.2 mg/kg Bwt I/M OD was given for 3 days. Owner was advised to offer the feed and milk required to the calf in more number of intervals. The site of surgery was supported by applying belly bandages (Figure 4). By 12th postoperative day, the skin sutures were removed and no recurrence of the condition was reported during an observation period of six months.

Fig. 2: *Application of Nylon Mesh with Fascial Overlay.*

Fig. 3: *Note the Reduced Hernia without Any Swelling at Umbilicus after Surgery.*

In the present case, umbilical hernia noticed was both acquired and recurred type of hernia. Due to its extensive size of hernial ring, authors had opted for hernioplasty. Fubini and Ducharme, opined that simple apposition of hernial ring with minimal tension at suture line is essential for ideal healing but this may not be possible in hernias with extensive hernial ring, while Baxter stated that larger hernias and hernias unsuccessfully repaired in previous are good subjects for mesh herniorrhaphy [3, 4]. In the present case, the mesh was placed within the abdomen and attached to the body wall. Matthews *et al.* and Kassem *et al.* opined that placement of mesh outside the body wall, subcutaneously prevents the adhesion of bowels with the mesh [2, 5]. But, in the present case no such complications were noticed which could be attributed to the presence of omentum at the umbilical region separating the mesh from the bowels. Fascial overlay performed in the present case provided better strength to the mesh to prevent further recurrence. Postoperative supporting belly bandages and proper managemental practices taken in the case ensured an uneventful recovery.

Fig. 4: *Application of Supportive Belly Bandage Following Surgery.*

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