

STERILIZED NYLON MOSQUITO NET FOR RECONSTRUCTION OF UMBILICAL HERNIA IN BUFFALOES

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ABSTRACT

In developed countries, alloplastic meshes are routinely used for hernia repair. However, in developing countries they are rarely available or affordable. Keeping in mind these constraints, the present study was conducted to evaluate the efficacy of sterilized nylon mosquito net for reconstruction of buffaloes. Umbilical hernia in five crossbred buffaloes was surgically reconstructed using sterilized nylon mosquito net under local analgesia. All animals had uneventful recovery without clinical signs of wound dehiscence, infection or recurrence.

Keywords: nylon mosquito net, umbilical hernia, buffaloes

INTRODUCTION

In developed countries, alloplastic meshes are routinely used for hernia repair. However, in developing countries, they are rarely available or affordable. Sterilized nylon mosquito net might serve as a cheap substitute for alloplastic mesh. An umbilical hernia is a discontinuity of the abdominal wall at the umbilicus with protrusion of abdominal contents into hernia sac formed by the skin and surrounding connective tissue (Fubini

and Ducharme, 2004; Engelsman *et al.*, 2007). The only effective treatment for umbilical hernia is surgery to restore integrity of the abdominal wall and prevent incarceration and strangulation of herniated contents (Kumar *et al.*, 2012). The use of synthetic mesh materials for the repair of abdominal wall hernias is gaining recognition to achieve a tension-free closure and has resulted in a significant reduction in postoperative pain, length of recovery period, and hernia recurrence rates (Amid, 1997, Bellows *et al.*, 2008). Nylon mesh has been used for the repair of abdominal wall defects in dogs (Moore and Syderney, 1955), goats (Wilhelm *et al.*, 2007), cattle (Wintzer, 1962; Bouisset *et al.*, 1982), and buffaloes (Kanade *et al.*, 1988; Varshney and Singh, 1991; Kumar *et al.*, 2002) with variable results. The present communication reports successful surgical reconstruction of umbilical hernia using sterilized nylon mosquito net in buffaloes.

HISTORY AND CLINICAL SIGNS

Five crossbred Murrah buffaloes (three males and two females), between 5 and 11 months of age (mean age 8.8 months) were presented to the Referral Veterinary Polyclinic, Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India, during 2011, with the history of swelling at the umbilical region. Physical examination revealed

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Figure 1. Photograph showing an umbilical hernia in a buffalo calf.



Figure 2. Photograph showing sterilized nylon mosquito net.

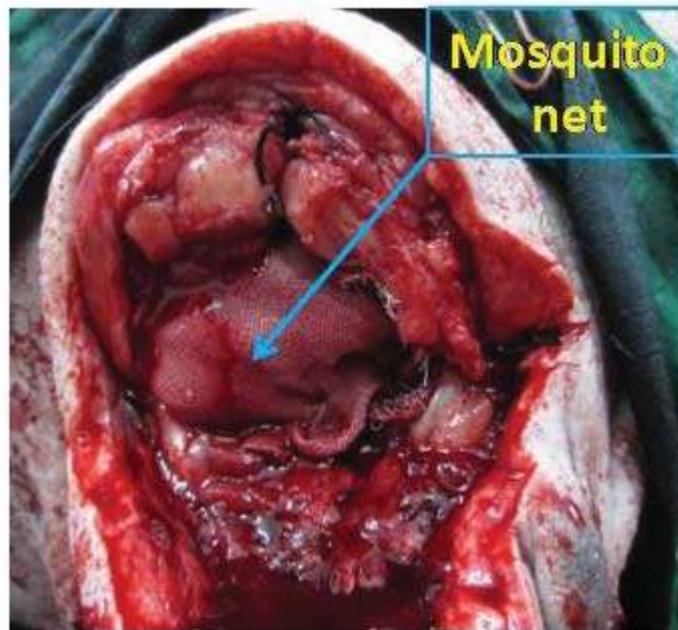


Figure 3. Photograph showing repair of umbilical hernia using sterilized nylon mosquito net.



Figure 4. Photograph showing repaired umbilical hernia in buffalo calf.

the presence of umbilical hernias with ring diameter of 3- 5 fingers (Figure 1).

SURGICAL TREATMENT

All the animals were kept off feed for 24 h before surgery. Preoperatively, all the animals were given normal saline solution, streptopenicillin (20,000 U/kg), and meloxicam (0.5 mg/kg) intravenously. The operation was performed in lateral recumbency. After aseptic preparation of the surgical site, xylazine (0.1 mg/kg intramuscularly) was administered, and 2% lignocaine hydrochloride was infiltrated at the surgical site. After proper analgesia, an elliptical incision was made over the hernial sac. Fascia and muscles were separated from the hernial ring. The adhesions were removed by blunt dissection, and the hernial contents were pushed back into the abdominal cavity. The hernial ring was freed and repaired with four fold sterilized nylon mosquito net (Figure 2) using inlay graft technique. Horizontal mattress sutures were placed to secure the sterilized nylon mosquito net with the hernial ring (Figure 3). The subcutaneous tissue and the skin incision were closed in standard fashion (Figure 4). Postoperative analgesia was provided by meloxicam (0.5 mg/kg intramuscularly, once daily) for 3 days. Streptopenicillin (10,000 U/kg intramuscularly, twice daily) was administered for 7 days. Daily dressing of the suture line was performed with 5% povidone iodine until healing of the surgical wound. The skin sutures were removed on the 10th postoperative day.

RESULTS AND DISCUSSION

All animals had an uneventful recovery

without clinical signs of wound dehiscence or infection. In this study, we demonstrated that umbilical hernia can be repaired successfully with sterilized nylon mosquito net without recurrence at least up to 3 months. Varshney and Singh (1991) described surgical management of ventral hernia with the nylon mesh prosthesis in a buffalo heifer with excellent results. Kumar *et al.* (2002) also reported two cases of hernia repaired by nylon mesh in a buffalo and heifer with good results. Results of the present study confirmed the observations made in earlier studies and prove that nylon mosquito net can serve as a viable option in the repair of umbilical hernia.

Findings of present study indicate that sterilized nylon mosquito net might serve as a cheap substitute for alloplastic meshes for reconstruction of umbilical hernia in buffaloes. Further studies are suggested to evaluate mosquito nets of different materials for long-term outcome.

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