

RECONSTRUCTION OF VENTRO-LATERAL HERNIA IN FEMALE BUFFALO CALF USING STERILIZED DOUBLE LAYER MOSQUITO NET

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ABSTRACT

A six months old female buffalo calf was brought to clinic, having history of accident with automobile followed by small swelling at the right ventro-lateral abdominal region that increased gradually to size of football thereafter. Clinical and ultrasonographic examinations revealed herniation of small intestine. Surgical correction was recommended due to large dimension of hernial ring and economic value of the animal. Hernial ring was repaired by using sterilized mosquito net. Superficial muscles and skin was closed in routine manner. Animal was followed up for 3 months post operatively and positive results were observed. This procedure was found to be cost effective and not associated with major complication.

Keywords: *Bubalus bubalis*, buffaloes, buffalo calf, Mosquito net, ventro-lateral hernia, reconstruction, herniorraphy

INTRODUCTION

Ventral hernia occurs generally as a result of external trauma to abdominal wall, as a result

of horn thrust, falling on blunt objects, automobile accident, weakening of the abdominal musculature or rupture of prepubic tendon (Frank, 1981). Simple apposition of hernial ring with minimal or complete avoidance of tension at suture line for ideal healing is essential but it may not be possible for large hernia ring, unless the use of prosthesis is employed. The application of tense suture to close the defect may lead to wound dehiscence and recurrence of the condition (Kumar *et al.*, 2014b). The use of synthetic prosthesis for repair of hernioplasty was recommended when the hernial ring size is more than 3 cm in diameter. The use of prosthesis helps to reduce tension on suture line (Burger *et al.*, 2004). Surgical correction is the most effective treatment to restore the integrity of abdominal wall, to prevent incarceration and strangulation of herniated abdominal contents.

HISTORY AND CLINICAL SIGNS

A six months old female buffalo calf weighing about 50 kg brought to the TVCC, college of veterinary and animal science, Navania, Udaipur, Rajasthan with the history of automobile accident, fifteen days before and a small swelling

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was noticed at right ventro-lateral abdominal region that increased gradually upto the size of football thereafter (Figure 1).

Calf was slight inactive with reduced appetite but urination and defecation were quite normal. On clinical examination the calf was restless but clinical parameters were within the normal range. On physical examination, found a large soft reducible swelling on the right ventro-lateral abdominal region and Hernial ring could have palpated ventrally. Extensive shaving was done and ultrasonographic examination in standing as well as in lateral recumbency using 7.5 MHz linear and 3.5 MHz curvilinear multi-frequency transducer was done which was showing viscera close the transducer (Figure 2 and Figure 3). The case was diagnosed as ventro-lateral hernia and animal owner was advised for surgery.

TREATMENT

Calf was kept off feed and water for 24 h and 12 h respectively before surgery. Preoperatively, Calf was medicated by Ceftriaxone sodium 10 mg/kg body weight, meloxicam 0.5 mg/kg body weight intravenously and Adrenochrome monosemi carbazone 20 mg total dose intramuscularly. The calf was restrained in left lateral recumbency, keeping the right side up for surgery and xylazine hydrochloride was used as sedative in dose of 0.05 mg/kg body weight intramuscularly. After aseptic preparation of surgical site 2% lignocaine hydrochloride was infiltrated locally at surgical site to obtain proper analgesia. Right mid flank approximately 18v cm long skin incision was made over hernial sac in the cranio-caudal direction. After skin and subcutaneous tissue dissection, the hernial sac and hernial ring was examined which

found voluminous hernial mass such as small intestine and omentum adhered to surrounding abdominal muscles at dorsal side of hernial ring. The adhesion was removed by blunt dissection and intestinal loops at the site of adhesion were devitalized with gentle pressure. The herniated viscera were repositioned in abdominal cavity by manual taxis. Hernial ring was larger in diameter (6 inches) hence hernioplasty was performed by using sterilized double layered mosquito net. The mosquito net exceeding 2 cm from hernial ring was fixed in position using file lashes at 8 points, with an overlapping suture pattern. Complete hernial ring was sutured with mosquito net using silk No. 1 in continuous pattern. End of pre placed file lashes was tied together for strengthen the mosquito net. Overlying muscles and subcutaneous tissue was sutured in continuous pattern using No. 2 polyglycolic acid suture material and skin was sutured with simple interrupted pattern using silk No. 1. Post operatively animal was treated with Ceftriaxone sodium 500 mg/day upto 7 days and meloxicam 5 ml/day for 3 days intramuscularly and the suture line was protected with antiseptic dressing (Figure 4). The skin sutures were removed on 13th day.

DISCUSSION

Postoperatively, the animal showed an uneventful recovery without any complication. Mild inflammatory oedema was noticed during first few days which was reduced later as the healing progressed. The animal was followed up for the period of 3 months till complete recovery. In present study, diagnosis was made through physical examination and ultrasonographic examination was made for confirmatory diagnosis.



Figure 1. Pre-operative photograph showing an ventro-lateral hernia in buffalo calf.

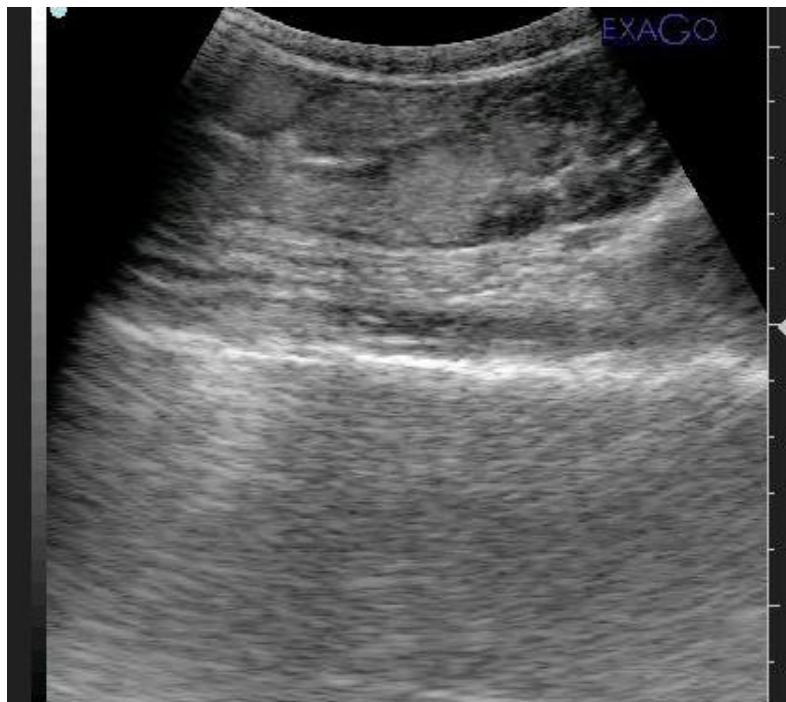


Figure 2. Ultrasound image, using 3.5 MHz curvilinear transducer, showing presence of loops of intestine.



Figure 3. Ultrasound image, using 7.5 MHz linear transducer, showing presence of loops of intestine close to the transducer.



Figure 4. Postoperative photograph showing correction of ventro-lateral hernia in buffalo calf.

On ultrasonography, intestinal loops and viscera were observed adjacent to ultrasonic probe. Kumar *et al.* (2014a) also corroborated with the findings. Xylazine hydrochloride provided good sedation (0.05 mg/kg b/w) intramuscularly along with 2% lignocaine hydrochloride infiltration locally at surgical site to obtain proper analgesia. Giusto *et al.* (2016) also advocated xylazine hydrochloride sedation along with local infiltration of 2% lignocaine hydrochloride to repair large sized hernia. Synthetic prosthesis for the hernioplasty was recommended in large sized hernial rings. Which helped to reduce the tension on the suture line (Venclauskas *et al.*, 2008; Burger *et al.*, 2004). In present study, a sterilized mosquito net was used for hernioplasty while Kumar *et al.* (2014c) also corroborated with surgical management of hernia using mosquito net in buffalo with good results. Elce *et al.* (2005) reported a relatively high incidence of post-operative complications associated with retroperitoneal placement of a synthetic mesh material, such as tearing of the internal abdominal oblique muscle and incisional swelling and drainage. However, in the present study, no complications were observed, postoperatively. It proved that mosquito net was good and cheapest alternative to costly prosthetic meshes for repair large hernia with adequate strength.

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