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RESEARCH ARTICLE

A REVIEW OF TWENTY CASES OF INCISIONAL HERNIA IN PIGS

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INTRODUCTION

Incisional hernia may develop following abdominal surgery in all species with an incidence reported in the horse of 8% (Mair and Smith, 2005) to 16% (Gibson *et al*., 1989) within 4 months of surgery. The incidence depends on a number of factors including incisional drainage, repeat laparotomy, excessive incisional oedema, chest infection, abdominal distension and old age (Mudge and Hughes, 1985).

Repair of large abdominal incisional hernia is a difficult surgical procedure with recurrence being a common outcome. Recurrence rate of up to 33% after first repair and 44% after second repair have been reported (Langer and Christiangen, 1985). Conservative therapy involving application of a long term pressure bandage may resolve the problem in certain cases, eliminating the need for surgical correction (White 1996). If the ring fails to decrease in size or bridging soft tissue is not found after 2-6 months surgical correction should be considered (Stick, 2006).There are a number of different methods for surgical repair of ventral midline incisional hernia in horse including reconstruction and primary closure (Cook *et al.*, 1996).

This paper reports only primary closure technique in 20 pigs having ventral midline incisional hernias. In the state of Mizoram ventral midline incisional hernia mostly encountered as a post operative complication of spaying performed by the non technical persons (Saikia *at el.*, 2009).

All the 20 pigs were presented to the clinics with the history of medium to large swelling on the ventral abdomen. Further history revealed that country method of ovarioectomy was performed 10 – 90 days back in most of the pigs with the exception of three cases. Temperature, respiration, defecation, urination and feeding were normal in all the pigs and 6 cases reported with retarded growth. Diagnosis was made based on history, symptom and clinical examination.

Operative procedure

Food and water were restricted for 12 hours prior to surgery. All the pigs were anaesthetized for primary closure by using Ketamine HCl@15mg/kg body weight along with Diazepam premedication @ 2mg/kg body weight intravenously (Konwar and Saikia, 2006). Animals were restrained on dorsal recumbency and the ventral abdomen prepared and draped in routine fashion. A linear incision was made over the ventral midline defect through the skin and subcutaneous tissue extending 2-5cm beyond the palpable body wall defect. The skin and subcutaneous tissue were then elevated and undermined as one layer over the defect to a point extending 2-4 cm beyond the hernial ring. The hernial sac was resected in case of irreducible hernia and inverted into the abdomen in case of reducible hernia. While resecting the hernial sac, the abdomen were explored for any adhesion of bowel and resected accordingly. Resected hernial sac (peritoneum) was sutured with No.1 vicryl. The edge of the hernial ring was freshened and the rings were closed by placing a series of mattress suture by using No 1 prolyne. Presence of any excess skin was resected for close apposition and to avoid dead space prior to routine subcutaneous and skin closure. A sterile gauge bandage was placed over the incision and held in place with adhesive tape. An additional support bandage was maintained for a minimum of 10 days post operative. The pigs were maintained on antibiotic and NSAID for 7 days and 3 days respectively following surgery. The skin sutures were removed on 10th day post operation.

RESULTS AND DISCUSSION

The study population included 20 female pigs that had a primary hernia repair without any prosthetic support. The

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average age and body weight of the pigs were 3.2 months and 22 kg respectively. Out of the 20 pigs, 17 cases hernia developed due to midline overioectomy and 3 cases were due to umbilical herniorrhaphy. In all the cases hernia developed within 10-90 days post operation with an average of 30 days. The average size of the hernial ring was 6 cm with a range of 4-10 cm. Out of 20caes, 14 were reducible incisional abdominal hernia and 6 were irreducible hernia. In this study 6 of 20 pigs, hernia sac was resected to the level of the fibrous hernial ring to identify healthy tissue for better apposition. In the abdomen varying degree intra-abdominal adhesion was found, which were thought to be the potential cause of abdominal pain and indigestion. Resection of adhered bowel was performed. The edges of the hernial rings in all the 20 cases were freshened and closed by a series of mattress suture by using No.1 prolyne. The results were satisfactory. However, Whitfield-Cargile *et al.*, (2011) used interrupted pattern sutures in areas under the most tension and with a simple continuous pattern in relatively tension free area. Tension on the suture line after primary herniorrhaphy was more in hernias with more than 6 cm diameter hernia ring. Abdominal bandage was used for 10 days in all cases following herniorrhaphy operation to control the pressure on suture line. The food was restricted to some extent after repair. Smith *et.al*., (2007) observed satisfactory result by using an abdominal support bandage following surgery to decrease the incidence of incisional complication.

No intra-operative complications developed in any cases. However, minor post operative complications were seen in 6 cases including reherniation in one case.

Seroma formation was observed in three cases which required aseptic aspiration and later on it resolved. Despite full course of antibiotic superficial wound infection were also observed in two cases which required dressing with antiseptic solution for healing. Primary closure technique with proper post operative care for incisional herniorrhaphy in pigs has been found to be a satisfactory treatment with low post operative complication and minimum recurrence.

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