

Dept. of Surgery,  
Faculty Vet. Med., Assiut University.  
Head of Dept. Prof. M.T. Nassef.

## SECONDARY CLOSURE OF INFECTED ABDOMINAL INCISION IN EWE (With 3 Figures)

By

F.M. MAKADY

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التقلل الثاني لجدار البطن في نعجة

فتحي مكادي

انهيار وفتح جدار البطن بعد قفله كنتيجة للعدوى يعتبر من أهم المضاعفات الخطيرة في جراحة جدار البطن بالإضافة إلى أن العدوى تؤدي إلى فقد وموت الأنسجة والصفائح المجاور للجرح مما يترتب عليه حيلولة قفله . يقدم هذا التقرير طريقة تم استخدامها لعلاج وقلل جدار البطن لنعجة كانت أجريت لها جراحة لعلاج فتق وتعرضت للعدوى مما أدى إلى فتح وانهيار جدار البطن مع خروج جزء من الكرش خلال هذا الفتح إلى الخارج .

Wounds dehiscence is a serious complication of abdominal surgery. Partial dehiscence can lead to hernia formation, whereas total disruption of the incision could result in evisceration (HUNT, 1975 and Swaim, 1980). Infected abdominal incisions are difficult to repair by conventional methods. Infection at the operative site increases the risk of wound breakdown and the rejection and digestion of suture materials that have been used successfully in wounds repair (HUNT, 1975). Loss of normal fascia and tissue adjacent to the wound often precludes anatomic closure (HUNT, 1975).

The principal factors that govern operative success with infected or dehisced abdominal incisions are the direct apposition of unscarred fascia, suture apposition with adequate distribution of tension, and provision for wound drainage (HUNT, 1975).

The paper describes a technique for repair of infected totally dehisced abdominal incision with rumenal evisceration in ewe.

### Case Report

A 5-years-old ewe with eviscerated rumen (Fig. 1) was admitted to the surgery clinic, at Assiut. Case history and clinical examination revealed that eviscerated rumen

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was resulted from total disruption of infected abdominal incision. Disruption of the incision occurred 6 days following abdominal surgery for hernia.

Local infiltration anesthesia was used. Surgery was performed with the animal positioned in dorsal recumbency. The surgical site was prepared for aseptic surgery in routine fashion, with special exercised in the removal of organic material and tissue debris. All sutures were removed. Infected and devitalized tissues along the wound edges were excised by sharp dissection. The incision and the eviscerated part of the rumen were copiously irrigated with sterile physiologic saline solution containing 10% povidone-iodine. The eviscerated part of the rumen was inverted into the peritoneal cavity. Monofilament stainless steel wire (25 gauge) was used to close the incision. Simple interrupted vertical mattress sutures were placed through all layers of the body wall including the preitoneum (Fig. 2). Sutures were placed 1.5 to 2 cm. apart passed through the skin, fascia, abdominal muscles and preitoneum, approximately 3.5 from the wound edge. The suture material passed through a 2 cm. length of hard rubber tubing on either side of the incision to reduce the cutting tendency of wire on skin and underlying tissues. The close bites of the vertical pattern were placed approximately 1.5 cm from the wound edges, and only through skin and fascia, thus minimizing eversion. All sutures were preplaced and the wound was then coapted by putting tension on all sutures simultaneously, then twisting the ends together. The ends beyond the twists were cut, and the twisted wires were bent back inside the rubber tubing.

#### Postoperative Care:

When the animal stand following surgery, a sterile abdominal compress was placed over the incision and secured with wide roll gauze. This initial compress was changed within 24 hours and thereafter as needed (48 to 72 hr) for approximately 7 days. The animal was restricted to a clean bedded box stall while sutures were in place and wound healing was progressed. The animal was given procaine penicillin G for 5 post-operative days.

Alternate wire sutures were removed beginning on day 16. All remaining suture were then removed by postoperative day 21. Healing was complete by postoperative day 28 (Fig. 3).

Infection, the primary cause of abdominal wound dehiscence, has been present in the present case. This technique provides an effective method for the repair of abdominal wound dehiscence in which sepsis and loss of normal fascia make closure by conventional direct suturing impossible, the wound first must be debrided carefully and completely to eliminate all devitalized tissue between the healing edges.

Stainless steel suture has the greatest tensile strength and knot security of all suture materials (SWAIM, 1980). Steel and monofilament nylon produce the least tissue

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reaction when implanted in infected surgical wounds (VARM *et al.*, 1981). Wire that can be twisted has an advantage over knotted nylon in that adjustments in tension can be made later (HUNT, 1975).

The subcutaneous tissue and skin were left unapposed to allow drainage. A vertical mattress pattern passed through all tissue layers provides maximal support, with minimal interference to blood supply of the healing wound. Hard rubber tubes minimize cutting through of skin by wire suture.

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### LEGENDS

- Fig. 1:** Dehiscid infected abdominal wound with eviscerated rumen.
- Fig. 2:** Diagrammatic cross section of a ventral abdominal wound demonstrating placement of a vertical mattress retention suture.
- Fig. 3:** Healed abdominal wound 28 days following secondary closure.

