**Standing Flank Laparotomy**

**Relevant Anatomy**

A discussion of relevant anatomy for this procedure is included in the description of surgical technique.

**Indications**

The standing flank approach is useful for some procedures. It is important to consider the limitations associated with a flank approach prior to beginning the approach. In general, only the ipsilateral organs are accessible through the flank, and only organs with a long blood supply or attachments can be exteriorized. The size of the approach is also limited in the horse. The approach has been used for standing exploration of the chronic colic horse. In many cases, standing laparoscopy has become the approach of choice for standing abdominal procedures.

**Anesthesia and Surgical Preparation**

Tranquilization of the patient is optional. The paralumbar fossa area is clipped, and the immediate area of the skin incision is shaved. The surgical area is prepared for aseptic surgery in a routine manner. Local analgesia is instituted by either a line block, an inverted L block, or a paravertebral block. The surgical area is then given a final preparation before surgery. With the standing procedure, aseptic preparation of a wide area and limited draping are preferred.

**Instrumentation**

**1.** General surgery pack

**2.** Long sterile gloves

**Surgical Technique**

A 20-cm skin incision is made midway between the tuber coxae and the last rib (Figure 12.3*A*). The dorsal limit of the incision is below the longissimus dorsi muscle and level with the tuber coxae. The incision is continued through the subcutaneous tissue, and any hemorrhage is controlled.

At this stage, there are two techniques for dividing the muscle layers. In the “grid” technique, all three layers may be divided along the direction of the muscle fibers. With the exception of the external abdominal oblique muscle, the fascial components of the flank muscles are weak; and splitting the muscles is preferred to transecting them. The grid technique, however, decreases the exposure. In most cases, a modified grid technique with a vertical incision through the fascia and muscle of the external abdominal oblique is used. (The two alternate incisions in the external abdominal oblique muscle are illustrated in Figure12.3*B*.) The grid incision between the muscle fibers in a caudoventral direction is started with scissors and is completed with fingers (Figure 12.3*C*). In the modified grid approach, the fascia and muscle are incised with a scalpel (Figure 12.3*D*). The remainder of the procedure is illustrated in a situation in which the external abdominal oblique muscle has been separated using the grid approach. In Figure12.3*E,* the dotted line shows the line of cleavage in the internal abdominal oblique muscle where the fibers run cranioventral. This layer is split to reveal the transverse abdominal muscle deeply (Figure 12.3*F*). A vertical split is made in the layer. (The line of cleavage is indicated in Figure 12.3*F*.) For this layer, the muscle should be tented with thumb forceps and nicked with scissors. The opening is enlarged to reveal retroperitoneal adipose tissue (Figure 12.3*G*), and the peritoneum is opened to expose the viscera (Figure 12.3*H*).

The surgeon should then don a sterile plastic sleeve to explore the peritoneal cavity. It is possible to exteriorize the small intestine, small colon, and pelvic flexure of the large colon. In addition, it is feasible to palpate the spleen, kidney(s), liver, stomach, cecum, large colon, cranial mesenteric artery, rectum, pelvic inlet, bladder, aorta, and reproductive tract. The peritoneal surface is also examined. The flank incision is closed in five layers. The peritoneum and transverse abdominal muscle are closed with simple interrupted sutures of no. 2-0 synthetic absorbable material. The internal abdominal oblique muscle is apposed with four or five simple interrupted or simple continuous sutures of no. 0 synthetic absorbable material (Figure 12.3*I*). A negative suction drain may be placed between the internal and external abdominal oblique muscles, and the last layer is closed with no. 0 or no. 1 synthetic absorbable material in a simple continuous pattern. Care is taken to ensure firm apposition of the fascia in the external abdominal oblique muscle. A suction drain, rather than a Penrose drain, is used to prevent seroma formation. However meticulous the closure is, a drain is generally necessary. The subcutis is closed with a simple continuous pattern using synthetic absorbable sutures. The skin is closed with non-absorbable sutures in a simple interrupted, simple continuous, or Ford interlocking pattern (Figure 12.3*J*).

**Postoperative Management**

Whether antibiotics are used and which type of antibiotics are used depend on the individual case. The negative suction syringe is taped over the patient’s back and is emptied regularly. The drain is removed when the volume of aspirated contents decreases (2–3 days). The skin sutures are removed in 12–14 days.

**Complications and Prognosis**

Complications are similar to those described in the ventral paramedian approach. The major advantage to this approach for laparotomy is that it can be performed in a standing position. This may improve prognosis by decreasing contamination and avoiding the risks associated with general anesthesia.

 



 

 

