

Ventral Midline Approach

The most common approach applied in equine abdominal surgery is performed through the ventral midline, specifically through the linea alba (Figure 34-1) because it allows exteriorization of 75% of the intestinal tract (Figure 34-2). The stomach, duodenum, distal ileum, dorsal body and base of the cecum, distal right dorsal colon, transverse colon, and terminal descending colon are the only segments that cannot be exteriorized. The ventral midline approach creates minimal hemorrhage, is easy to perform, can be extended if needed, and contains strong fibrous tissues for closure.

After positioning the patient in dorsal recumbency and clipping the hair of the surgical field, an indwelling urinary catheter should be placed in male horses to prevent the possibility of urine contamination

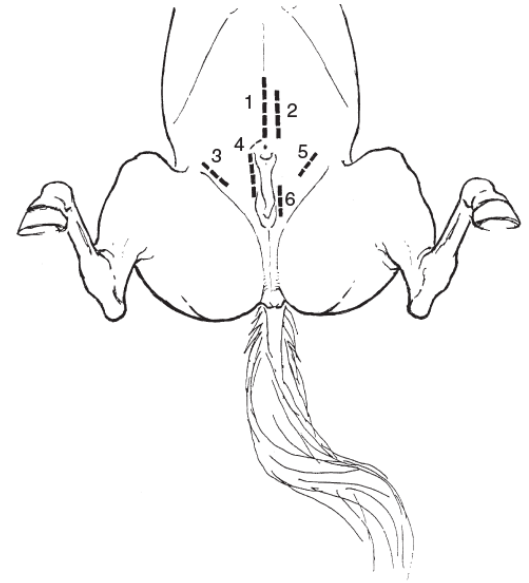
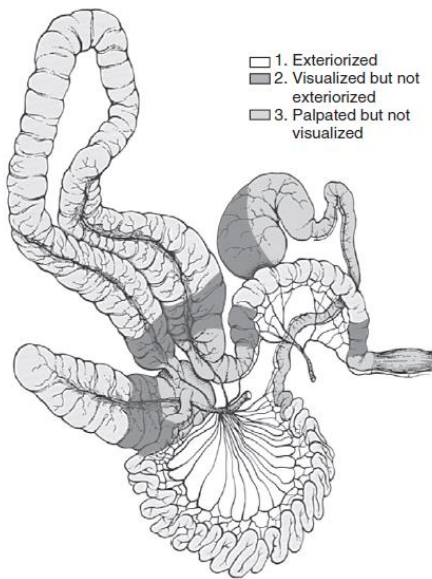


Figure 34-1. Abdominal approaches through the ventral abdominal wall: ventral midline (1), paramedian (2), inguinal (3), combination of a ventral midline and ventral paramedian (4), parainguinal (5), suprapubic paramedian (6).

during surgery. The penis is carefully snared with a gauze bandage, properly cleaned, and positioned in the prepuce after prior cleaning. The preputial cavity is subsequently sutured closed, allowing only the catheter to exit the suture line. Routine aseptic preparation of the surgical field is the next step.



- 1. Exteriorized
- 2. Visualized but not exteriorized
- 3. Palpated but not visualized

The linea alba extends from the xiphoid process to the prepubic tendon and contains the median fibrous raphe of the external oblique and the transverse abdominal muscle aponeuroses. It consists of dense connective tissue composed of sheets of cross-linked collagen bundles and fibroblasts. The thickness of the linea alba gradually increases from craniad, where it measures about 3 mm, to caudad, where it reaches a thickness of approximately 10 mm. The midline incision should be large enough to allow

exteriorization of viscera without applying excessive pressure on the intestines, which would increase the risk of iatrogenic tears. The time saved during the procedure and the increased safety of a larger incision more than compensate for the extra time required to close a longer incision. Additionally, a smaller incision will be traumatized more during the manipulations of a surgical procedure than a larger one, which may delay its healing and lead to postoperative infection and herniation, especially after colic surgery. After incising the skin and subcutaneous tissue, the linea alba is incised beginning in the umbilical region where it is the widest and thickest. The incision is subsequently continued craniad to its desired length, avoiding penetration of the rectus abdominus muscle. The latter structure can easily be palpated as a local thickening at the internal side of the ventral abdominal wall. Incisional hemorrhage is only encountered in the skin and the subcutaneous tissues.

Figure 34-2. Anatomic drawing of the equine intestinal tract. Differential shading indicates the portions that may be (1) exteriorized, (2) visualized and palpated but not exteriorized, and (3) palpated only via a standard ventral midline approach. (Redrawn from Sack WO: Guide to the Dissection of the Horse. Edwards Brothers, Ann Arbor, MI, 1977.)

Although there are different suture patterns that can be used to close the celiotomy, a continuous suture pattern with loops positioned 1.2 to 1.5 cm from the incisional edge of the linea alba provides the most strength. Likewise, various suture materials can be used for incisional closure, but in adult horses I prefer polydioxanone (USP size No. 7, metric size No. 9) or polyglactin 910 (USP size No. 6, metric size No. 8). To increase the bursting strength in heavy horses or pregnant mares, two to four single cruciate sutures can be placed 2 to 3 cm from the incisional edge after the continuous suture has been placed. In my experience a full abdominal bandage with an adhesive bandage applied before recovery decreases the strain on the incisional closure and covers the sutures during recovery phase. This reduces the risk of postoperative infections and incisional hernias (personal experience).

[Auer, J. and Stick, J. \(2012\). Equine surgery. St. Louis, Mo: Elsevier, pp.407-408](#)