Laparoscopic Approaches to the Abdomen in Recumbent Horses

Under general anesthesia, the horse should be securely supported on the table in the Trendelenburg position (see Figure 13-16). Mechanical ventilation is mandatory in horses anesthetized for laparoscopy. Positive inspiratory pressure ventilation is used to assure adequate ventilation despite the increased pressure exerted upon the diaphragm by the cranially shifted intestines. Also, higher peak inspiratory pressures (25 to 35 cm H2O) are often necessary to maintain appropriate ventilation and oxygenation. Placement of a urinary catheter facilitates decompression of the bladder.

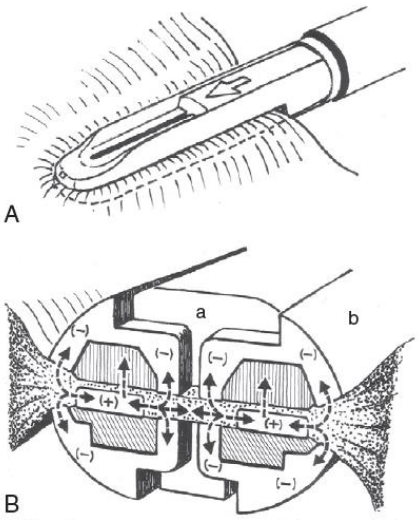

Figure 13-16. Schematic representation of the EnSeal Clamp. **A,** The EnSeal Clamp in action. The *arrow* indicates the direction the I-Blade separates the tissues before sealing the vessels. **B,** Close-up view of the electrical circuits crossing the tissue from the positive poles to the negatively charged surroundings. *a,* The I-Blade is partially advanced. *b,* The jaws are shut aided by the I-Blade.

Generally, a 1.5-cm incision is created in the midline at the level of the umbilicus. The abdomen is insufflated with a teat cannula to a pressure of 15 to 20 mm H g. The abdomen should be well insufflated before inserting the sharp trocar in the umbilical region. In foals, the teat cannula and the portal for the endoscope is placed about 2 cm lateral of the umbilicus to avoid penetration of umbilical structures. For surgeries in the region of the testis (cryptorchidectomy) and the inguinal region (herniorrhaphy) two instrument portals are created 10 cm lateral to the midline and 10 to 15 cm cranial to the external inguinal ring. For ovariectomy and removal of granulosa cell tumors, working with four instrument portals is beneficial. The first instrument portal is created midway between the umbilicus and the mammary gland, about 10 cm lateral to the midline. A second portal is established between the first instrument portal and the mammary gland. If the instrument portals are positioned at the right locations, identical portals are created on the opposite side of the midline. A very useful technique for removing uroliths is a laparoscopic-assisted cystotomy with the scope at the umbilicus and the instrument portal 2 to 3 cm medial to the left external inguinal ring, followed by enlarging the instrument portal to exteriorize the apex of the bladder. Instrument portals cranial to the umbilicus are described for a laparoscopic colopexy.

Auer, J. and Stick, J. (2012). Equine surgery. St. Louis, Mo: Elsevier, pp. 410