

## **LEFT-FLANK LAPAROTOMY**

The site of the incision for left-flank laparotomy is illustrated in Figure 13.1A. A vertical incision is made in the middle of the paralumbar fossa extending from 3 to 5 cm ventral to the transverse processes of the lumbar vertebrae for a distance of 20 to 25 cm. For rumenotomy in a large cow, it may be advantageous to make the incision cranial to the midway point. For cesarean section, the incision may begin 10 cm ventral to the transverse processes and may extend 30–40 cm.

To incise the skin, reasonable pressure should be exerted on the scalpel to ensure complete penetration. This incision is continued ventrally, so the skin is opened in one smooth motion. Separation of the skin and subcutaneous tissue reveals fibres of the external abdominal oblique muscle and fascia (Figure 13.1B). This layer is incised vertically to reveal the internal abdominal oblique muscle (Figure 13.1C). A similar incision through the internal abdominal oblique muscle reveals the glistening aponeurosis of the transverse abdominal muscle (Figure 13.1D).

Then the muscle is picked up with tissue forceps and is nicked with a scalpel in the dorsal part of the incision to avoid cutting the rumen. The incision through the transverse abdominal muscle and peritoneum may be extended with scissors or a scalpel for entrance into the peritoneal cavity (Figure 13.1E).

A thorough, systematic examination of the abdomen should always be carried out before specific surgical manipulation is performed on a viscus. Unless a left displacement of the abomasum is present, the rumen will be visible following completion of the left-flank laparotomy incision, and the color of its serosa may be noted (Figure 13.1F).

The rumen is palpated to determine the nature of its contents. The left kidney is pendulous and also can be palpated straight in from the incision if the rumen is empty. If the rumen is full, the kidney is located by passing a hand around caudal to the dorsal sac of the rumen.

Passing a hand forward on the left side of the rumen, the spleen, reticulum, and diaphragmatic area may be palpated, and the presence of adhesions or abscesses in this area may be ascertained. Moving behind the rumen over to the right side, the viscera within the omental bursa are palpated.

Further forward on the right side, it is possible to palpate the caudate lobe of the liver and the gallbladder.

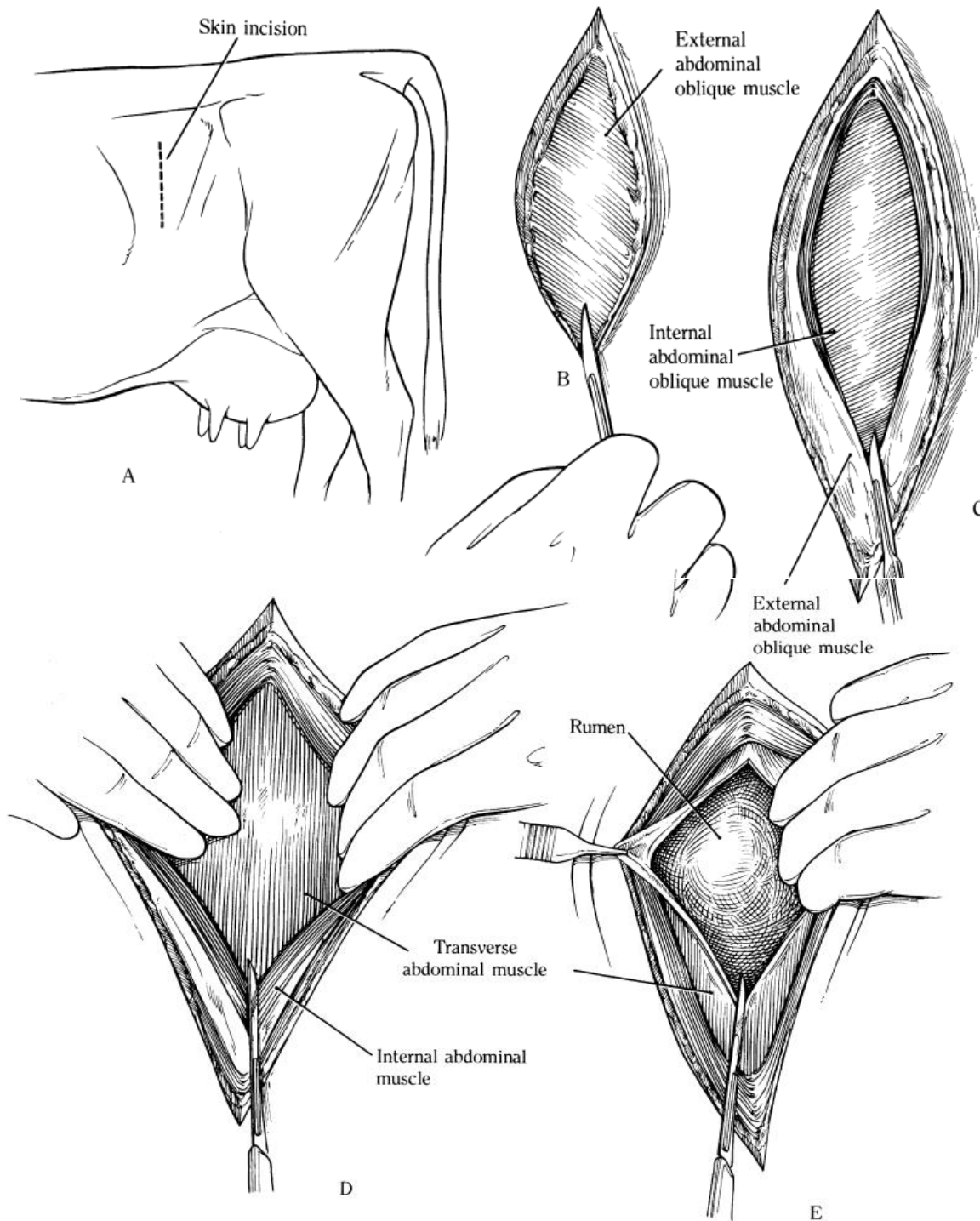
The pelvic region, including the uterus (in a cow) and bladder, should also be palpated. It is questionable whether routine palpation of the ovaries and fimbriae of the uterine tubes is appropriate in the cow, especially if peritonitis is present in the abdomen. It is possible that local infection and adhesions could result in problems with reproduction. Following this exploration, any specific procedures indicated, such as rumenotomy or abomasopexy, are performed.

Routinely, a flank laparotomy incision is closed in three layers. The peritoneum and transverse abdominal muscles are closed together with a simple continuous suture pattern using no. 0 or no. 1 synthetic absorbable suture (Figure 13.1G). Placing this suture layer in a ventral-to-dorsal direction is helpful to maintain the viscera within the incision, particularly on the right side.

The internal and external abdominal oblique muscles may be closed with a second simple continuous layer using no. 1 synthetic absorbable suture (Figure 13.1H). This suture line is anchored to the deeper transversus muscle at various intervals to obliterate dead space. It is also desirable to take even bites on either side with the muscle closures, so the muscles will come together without a defect and without wrinkling. If the external and internal abdominal oblique muscle layers are substantial in a large cow, closure should be performed in separate layers.

Generally, skin closure is performed with a continuous Ford interlocking pattern using heavy polymerized caprolactam (Vetafi™) (Figure 13.1H). At the surgeon's option, 2–3 simple interrupted sutures may be placed

in the ventral aspect of the incision (Figure 13.1H). This measure allows easy drainage if infection develops in the incision. Such an event is possible in the compromised conditions under which this surgical procedure may have to be performed. If the skin incision has been obviously contaminated, as by the delivery of an emphysematous fetus, an interrupted suture pattern may be more appropriate.



**Fig. 13.1.** A–H. Flank laparotomy and abdominal exploration.

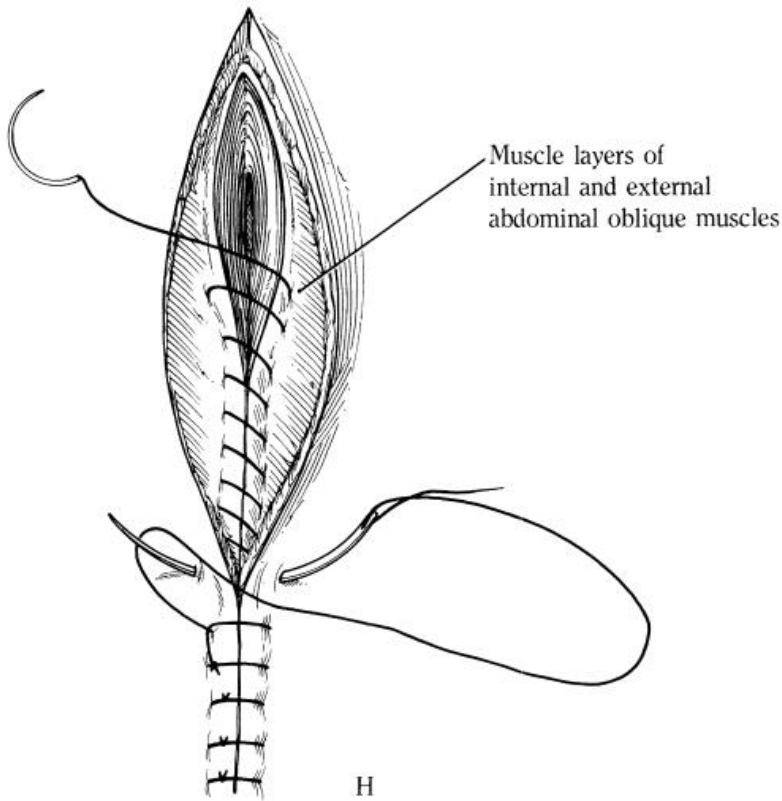
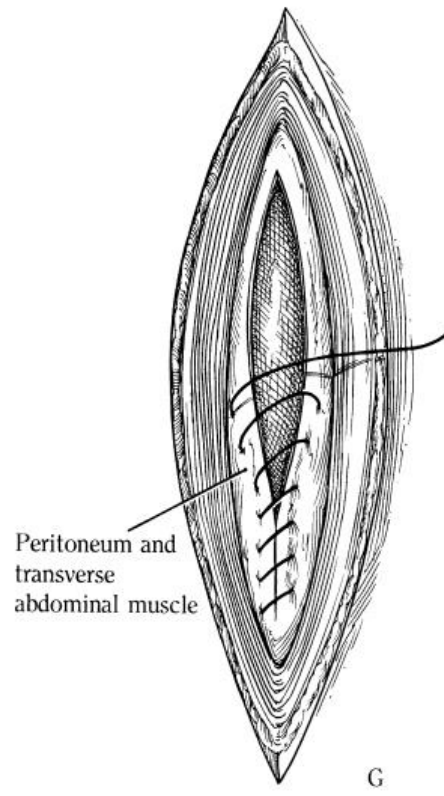
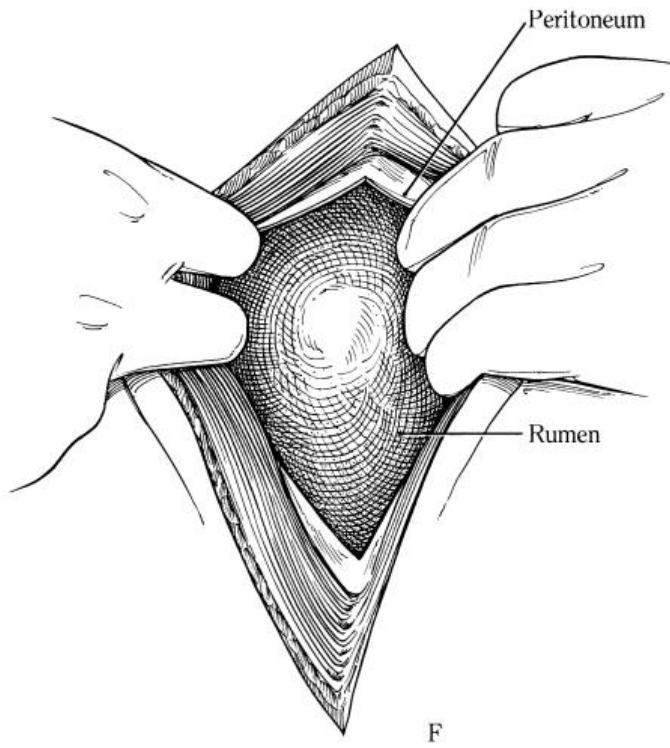
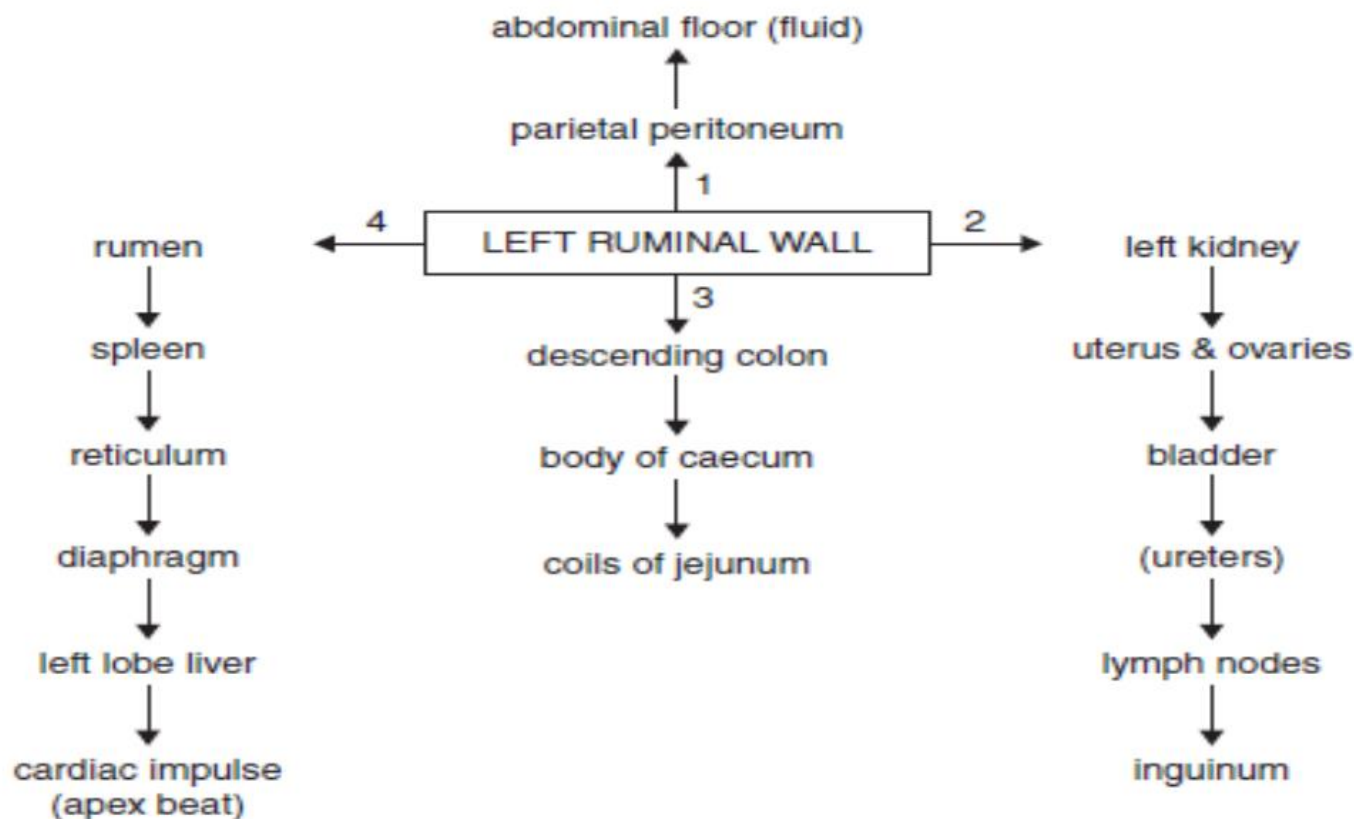


Fig. 13.1. Continued.



**Figure 3.7** Flow diagram of left flank exploratory examination. As in right flank approach (see Figure 3.8) entire accessible part of abdominal cavity should be rapidly checked in any abdominal disease. Start from left ruminal wall with palpation of parietal peritoneum (1), then caudal abdomen (2) and the right side structures (3), before concentrating on left flank and left cranial and ventral regions (4).