The upper abdominal cavity contains the stomach and duodenum; the liver, gallbladder, and pancreas, which arise from the embryonic duodenum; and the spleen, which arises embryonically in the dorsal mesogastrium.

Topographic Anatomy of the Stomach

Three-fourths of the gastric organ is located in the left hypochondriac region and one-fourth in the epigastric region. Normally the field for operative exposure of the stomach is relatively small, being bounded by the left costal arch, the liver, and the transverse colon. The position of the stomach depends on its state of fullness and contraction and also on the position of the diaphragm.

For convenience the stomach is subdivided into the cardia, which is adjacent to the esophagus; the fundus, whose proximal end is termed the gastric fornix; the body, the portion that contains the greater and lesser curvatures and is chiefly responsible for acid secretion; and, distal to the angular incisure, the antrum, the pylorus, and pyloric canal (Fig. 1.1). The proximal duodenum consists of the duodenal bulb, which is about 2 cm in length, and the descending portion of the duodenum.

The posterior surface of the stomach, the gastrocolic ligament, and the lesser omentum form the anterior wall of the omental bursa (lesser peritoneal sac). This cavity is bounded behind by the parietal peritoneum of the posterior abdominal wall; the pancreas, the superior pole of the left kidney, and the adrenal gland are palpable on the left (Fig. 1.6). The roof of the omental bursa is formed by the lower margin of the liver in the region of the quadrate lobe and by part of the diaphragm in the region of the cardia; the transverse mesocolon forms the floor. The omental bursa can be reached by any of several routes:

- Through the gastrocolic ligament,
- Through the lesser omentum,
- Between the greater omentum and transverse colon,
- Through the foramen of Winslow,
- Through the transverse mesocolon.

![Fig. 1.1. Schematic illustration of the parts of the terminal esophagus, stomach, and duodenum. (After Lasrich and Prevot 1981)](image-url)
Fig. 1.2 a–f. Position of the duodenum as a function of its ligamentous fixation. a Normal position. The pylorus and duodenal bulb are higher than the antrum and are normally fixed by the hepatogastric and hepatoduodenal ligaments. The ligament of Treitz is normally developed. b Horizontal position of the duodenal bulb and superior part of duodenum with a short hepatoduodenal ligament. c The superior duodenal flexure is indented by the gallbladder. d Elevation of the duodenojejunal flexure. e The ligament of Treitz is absent, and the whole duodenum is to the right of the spine. f Short ligament of Treitz with kinking of the duodenum toward the right side. (Source see Fig. 1.1)

Because the approach through the gastrocolic ligament is the widest, it is the most frequently used.

Positional Anomalies of the Proximal Duodenum

Positional anomalies of the proximal duodenum (Fig. 1.2 a–f) are not uncommon and relate to its variable fixation by the hepatogastric and hepatoduodenal ligaments. The ligament of Treitz may be present in varying degrees, or it may be completely absent (Fig. 1.2 d–f).

Blood Supply of the Stomach and Proximal Duodenum

The celiac axis arises from the abdominal aorta at the level of the 12th thoracic vertebra and quickly divides into its three major branches: the com-