Laparoscopic Distal Pancreatectomy with Splenectomy

48

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Preference Card

- 5 mm 30° scope
- 10 mm 30° scope
- Camera
- Light cord
- Light source
- CO_2 source
- Fog reduction and elimination device (FRED ™)
- Laparoscopic ultrasound probe
- Laparoscopic electrocautery device and grounding pad
- Laparoscopic 5 mm LigaSure (Maryland tip)
- Laparoscopic suction and irrigation
- Laparoscopic clip applier
- Laparoscopic grasper
- Laparoscopic shears
- Laparoscopic PDS Endoloop ™
- 45 mm Endo GIA stapler
- 45 mm Endo GI purple load (one cartridge)
- Endoscopic retrieval bag
- Mini vessel loop pack
- Umbilical tape ¼ inch
- Pediatric feeding tube 5–8 Fr
- Trocars:
  - 12 mm Hasson
  - Three 5 mm trocars
- Sutures:
  - 0 Vicryl UR-6 × 2
  - 4-0 Vicryl PS-2 × 2
  - 3-0 silk SH × 6
  - 5-0 PDS RB1 × 2
  - 2-0 silk FSL for drain
- 19-French round Jackson-Pratt/Blake drain
- Have available: Major general and vascular trays in event of conversion to open procedure

Patient Positioning/Operating Room Setup

- Patient positioning and operating room setup (Fig. 48.1)
- Trocar placement:
  - Start with 12 mm Hasson cannula supraumbilical port placement.
  - Place camera in supraumbilical port.
  - Add 5 mm right upper quadrant trocar × 2.
  - Add 5 mm left upper quadrant trocar.

Nodal Points

Diagnostic Laparoscopy

- If no lesions, proceed with surgery. Otherwise, this is a stage IV disease and there is no benefit from surgery.

Enter Lesser Sac (Fig. 48.2)

- Using a DeBakey grasper, retract the stomach medially, while assistant retracts ligament.
- With the ultrasonic shears, divide the gastrocolic ligament from the distal antrum to the fundus, preserving the gastroepiploic vessels along the greater curvature.

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R. J. Rosenthal et al. (eds.), *Mental Conditioning to Perform Common Operations in General Surgery Training*,
https://doi.org/10.1007/978-3-319-91164-9_48

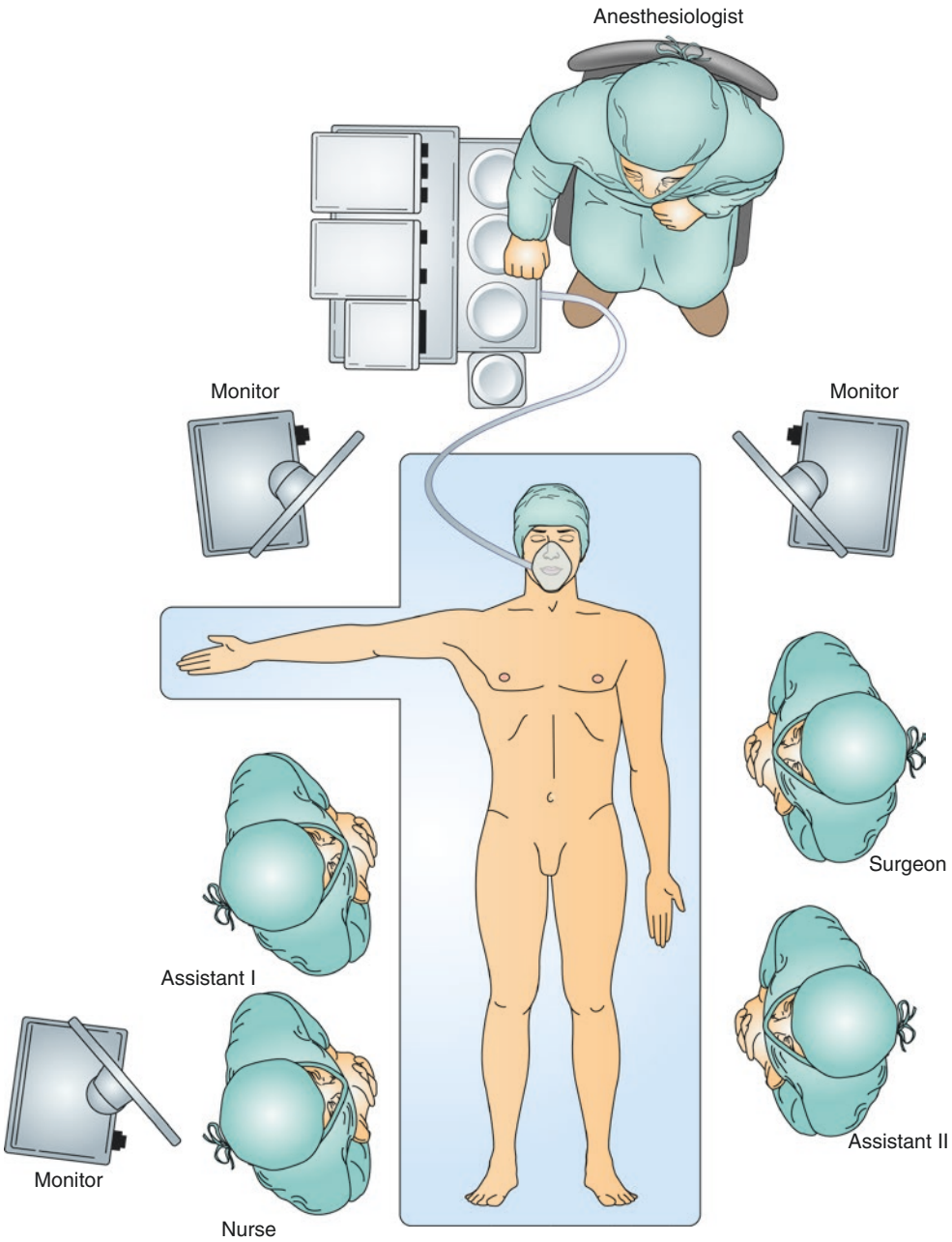

Fig. 48.1 Patient positioning and operating room setup. *ANS* anesthesiologist, *M* monitor, *S* surgeon, *A1* first assistant, *A2* second assistant, *N* nurse

- Dissect all the way along the greater curvature, making sure to divide the short gastric vessels up to the gastro-esophageal junction.

Mobilizing the Pancreas and Creation of the Retropancreatic Space (Fig. 48.3a, b)

- The stomach is retracted anteriorly and superiorly.
- Retract the transverse colon downward.
- Using the LigaSure device, divide the anterior layer of the transverse mesocolon in order to mobilize the posterior surface of the pancreas.
- Identification of lesion via laparoscopic ultrasound.
- Continue the dissection till the loose areolar tissue behind the pancreas is free.
- Start mobilization through the inferior border of the pancreas.
- The body and tail of the pancreas can be elevated by carefully dissecting the retropancreatic space.

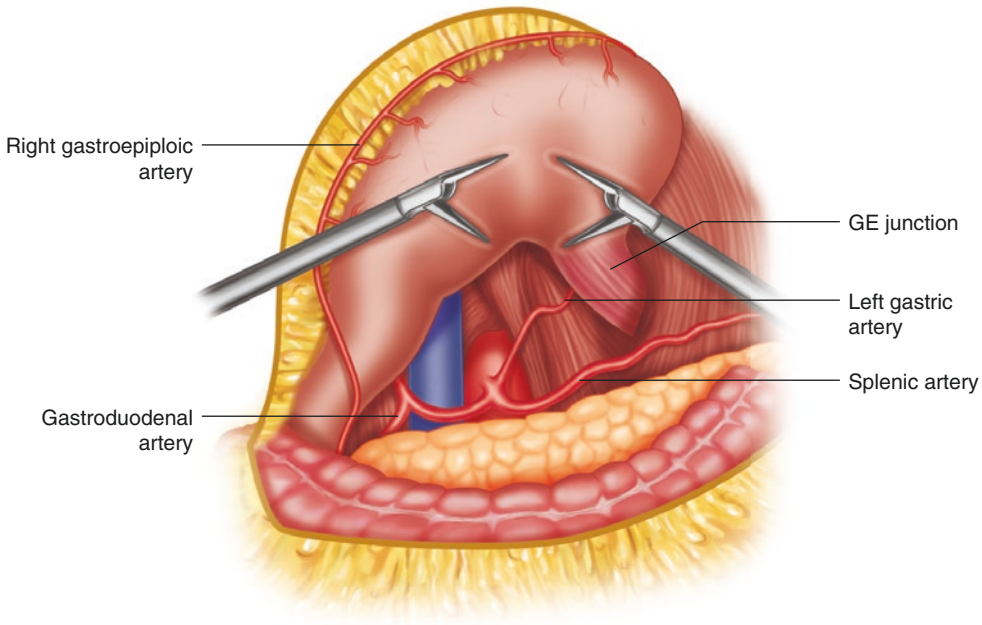

Fig. 48.2 Entering the lesser sac

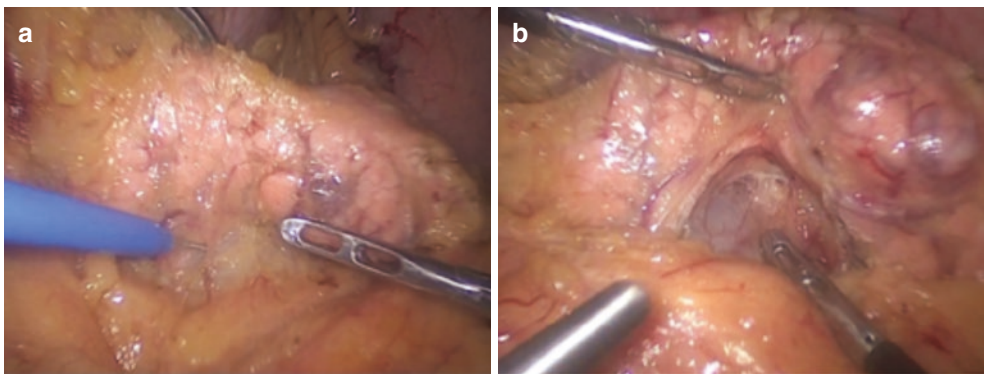

Fig. 48.3 (**a**) Mobilizing the pancreas and (**b**) creation of the retropancreatic space

Exposure of Vasculature

- Dissect along the inferior border of the pancreas until the portal vein, superior mesenteric vein, and inferior mesenteric vein are identified.
- Using blunt dissection, dissect through the fascial planes until the junction of the splenic vein and the superior mesenteric vein is identified.
- At this point, skeletonize and isolate the splenic artery at the upper border of the pancreas.
- Using an endoscopic linear with a vascular cartridge, divide the splenic artery.
- Reload stapler with vascular cartridge and divide the splenic vein.

Division of the Pancreas (Fig. 48.4a, b)

- Distal to the identified tumor, divide the body of the pancreas using an endoscopic linear stapler loaded with a medium-sized cartridge.

Distal Pancreatic and Spleen Mobilization

- Dissect the pancreatic tail free of the surrounding tissue all the way to the hilum of the spleen.
- While performing the medial to lateral dissection, resection of Gerota's fascia and adequate lymph node dissection should be performed.

- Perform lymph node dissection along the celiac trunk.
- Dissect the spleen free of its retroperitoneal attachments.
- Once completely free, remove the specimen in an endoscopic retrieval bag.

Hemostasis

- Secure the splenic artery stump with a PDS Endoloop™.
- Apply Floseal™ to the resection bed.

Drain Placement

- Place a 19-Fr round Jackson-Pratt drain adjacent to the cut edge of the pancreas and brought out of the left lateral trocar site where it is secured to the skin.

Specimen Retrieval

- Place specimen in an Endocatch bag.
- Retrieve bag through the supraumbilical incision.
- If specimen is larger than fascial opening, extend the opening enough to allow retrieval.

Closure

- Close the supraumbilical port fascia with a running #1 PDS suture.
- Remove remaining trocars and close the 5 mm skin incisions with 4-0 Vicryl.
- Cover incisions with Steri-Strips.

Pearls and Pitfalls

- Care should be taken when performing splenectomy as splenic injury can lead to a significant amount of blood loss. Any injury to the splenic capsule should be promptly repaired with non-absorbable suture before returning to the step of the operation that was being performed.

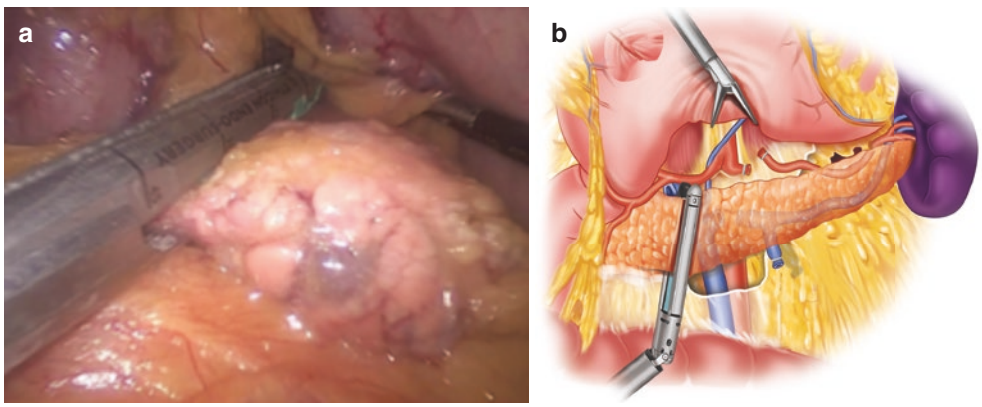

Fig. 48.4 (**a**, **b**) Division of the pancreas

Access Reader Checklist Appendix

☑ READER CHECKLIST
Laparoscopic Distal Pancreatectomy with Splenectomy

☑ PREFERENCE CARD

►**Instruments**
__5 mm 30o scope
__10 mm 30o scope
__Camera
__Light cord
__Light source
__CO2 source
__Fog reduction and elimination device FRED ™
__Laparoscopic ultrasound probe
__Laparoscopic electrocautery device and grounding pad
__Laparoscopic 5 mm ligasure (Maryland tip)
__Laparoscopic suction and irrigation
__Laparoscopic clip applier
__Laparoscopic grasper
__Laparoscopic shears
__Laparoscopic PDS Endo-Loop ™
__45 mm Endo- GIA stapler
__45 mm Endo GI purple load (one cartrigade)
__Endoscopic retrieval bag
__Mini vessel loop pack
__Umbilical tape ¼ inch
__Pediatric feeding tube 5 – 8 Fr
__19-French round Jackson-Pratt/Blake drain

►Instruments
__Trocars:
__12mm Hasson
__5mm Trocar/Sleeve x 3
__Have available major general tray and major vascular set in event of conversion to open procedure

►**Sutures**
__0 Vicryl UR-6 x 2
__4-0 vicryl PS-2 x 2
__3-0 silk SH x 6
__5-0 PDS RB1 x 2
__2-0 SILK FSL for drain

☑ PATIENT POSITIONING/ OPERATING ROOM SETUP

►**Operating Room Setup**
__Trocar placement
__Start with 12 mm Hasson cannula supra-umbilical port placement
__Place camera in supra-umbilical port
__Add 5mm right upper quadrant trocar x 2
__Add 5mm left upper quadrant trocar

☑ NODAL POINTS

►**Diagnostic Laparoscopy**
__If no lesions, proceed with surgery.
__Otherwise, this is stage IV disease and no there is no benefit from surgery

►**Enter into Lesser Sac**
__Using DeBeckey grasper retract stomach medially, while assistant retracts ligament
__With ultrasonic shears divide gastrocolic ligament from distal antrum to fundus, preserving gastroepiploic vessels along greater curvature
__Dissect all the way along greater curvature, making sure to divide short gastric vessels up to gastroesophageal junction

►**Mobilization of Pancreas and Creation of Retropancreatic Space**
__Stomach retracted anterior and superiorly
__Retract transverse colon downwards
__Using Ligasure device, divide anterior layer of transverse meso-colon to mobilize posterior surface of pancreas
__Identify lesion via laparoscopic ultrasound
__Continue dissection until loose areolar tissue behind pancreas is free
__Start mobilization through inferior border of pancreas
__Body and tail of pancreas elevated by carefully dissecting retropancreatic space

►**Exposure of Vasculature**
__Dissect along inferior border of pancreas until portal vein, superior mesenteric vein and inferior mesenteric vein identified
__Using blunt dissection, dissect through fascial planes until junction of splenic vein and superior mesenteric vein identified.
__At this point, skeletonize and isolate splenic artery at upper border of pancreas
__Using endoscopic linear with a vascular cartridge divide splenic artery
__Reload stapler with vascular cartridge and divide splenic vein

►**Division of Pancreas**
__Distal to identified tumor, divide body of pancreas using endoscopic linear stapler loaded with medium sized cartridge

►**Distal Pancreatic and Spleen Mobilization**
__Dissect the pancreatic tail free of the surrounding tissue all the way to hilum of spleen
__While performing medial to lateral dissection, resection of Gerota´s fascia and adequate lymph node dissection should be performed
__Perform lymph node dissection along celiac trunk
__Dissect spleen free of its retroperitoneal attachments
__Once completely free, remove specimen in endoscopic retrieval bag
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►**Hemostasis**
__Secure the splenic artery stump with PDS Endo-loop™
__Apply Flo-Seal™ to resection bed

►**Drain Placement**
__Place 19 Fr round Jackson-Pratt drain iadjacent to cut edge of pancreas and brought out of left lateral trocar site where it is secured to skin.

►Specimen Retrieval
__Place specimen in Endocatch bag
__Retrieve bag through supraumbilical incision
__If specimen larger than fascial opening, extend opening enough to allow retrieval

►**Closure**
__Close supraumbilical port fascia with running #1 PDS suture
__Remove remaining trocars and close 5mm skin incisions with 4-0 Vicryl
__Cover incisions with steri-strips