Laparoscopic Appendectomy

31

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Preference Card

- 15-blade scalpel
- Adson forceps
- Rat tooth grasping forceps
- DeBakey forceps
- Kocher clamps
- Kelly Clamps
- Mayo scissors
- Electrocautery (35/35)/grounding pad
- Suction
- Army-Navy retractors
- 2-0 Vicryl on UR-6 needle
- 4-0 Vicryl PS-1 needle
- Needle driver
- Two ratcheted bowel graspers
- Maryland dissector
- Stapler with vascular 45 mm and medium thickness 45 cartridges
- Ultrasonic dissector (optional)
- Hassan blunt port, 5 mm ports ×2
- General endoscopic drape
- 10 mm scopes and 5 mm scope
- Camera/light cord
- Insufflation cord
- Endocatch
- Suction/irrigation and saline 1000 ml
- Bupivacaine
- 10 mm syringe, 25 G hypo
- Steri-Strips 0.5 inch
- Anti-fog
- Ligaclip applier 5 mm

Patient Positioning/Operating Room Setup (Fig. 31.1)

- Patient position supine, operating table rotated 15–30 degrees left.
- Left arm is tucked in at the patient's side. Right arm may be extended.
- Surgeon position on patient's left.
- Assistant position to the right of the surgeon initially and then move to the left.
- Nurse on patient's right.
- Anesthesiologist at patients head.
- Monitor position patient's right.
- Trocars (Fig. 31.2)
  - 12 mm camera port location at umbilical port.
  - Two 5 mm trocars, one suprapubic and one left lower quadrant lateral to rectus muscle. As an alternative an additional 12 mm trocar can be used in the left lower quadrant instead.

Nodal Points

Localization and Exposure of the Appendix (Fig. 31.3)

- Introduce left-hand ratcheted grasper through suprapubic port.
- Right-hand soft bowel clamp through left lower quadrant port.
- Identify terminal ileum and cecum.
- Retract the ileocecal fold of Treves cephalad.
- Hold appendix up with left-hand ratcheted grasper.
- Swipe small bowel and expose base of appendix with closed soft bowel clamp.
- If needed, introduce an additional 5 mm trocar at right upper abdominal wall.

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R. J. Rosenthal et al. (eds.), *Mental Conditioning to Perform Common Operations in General Surgery Training*,
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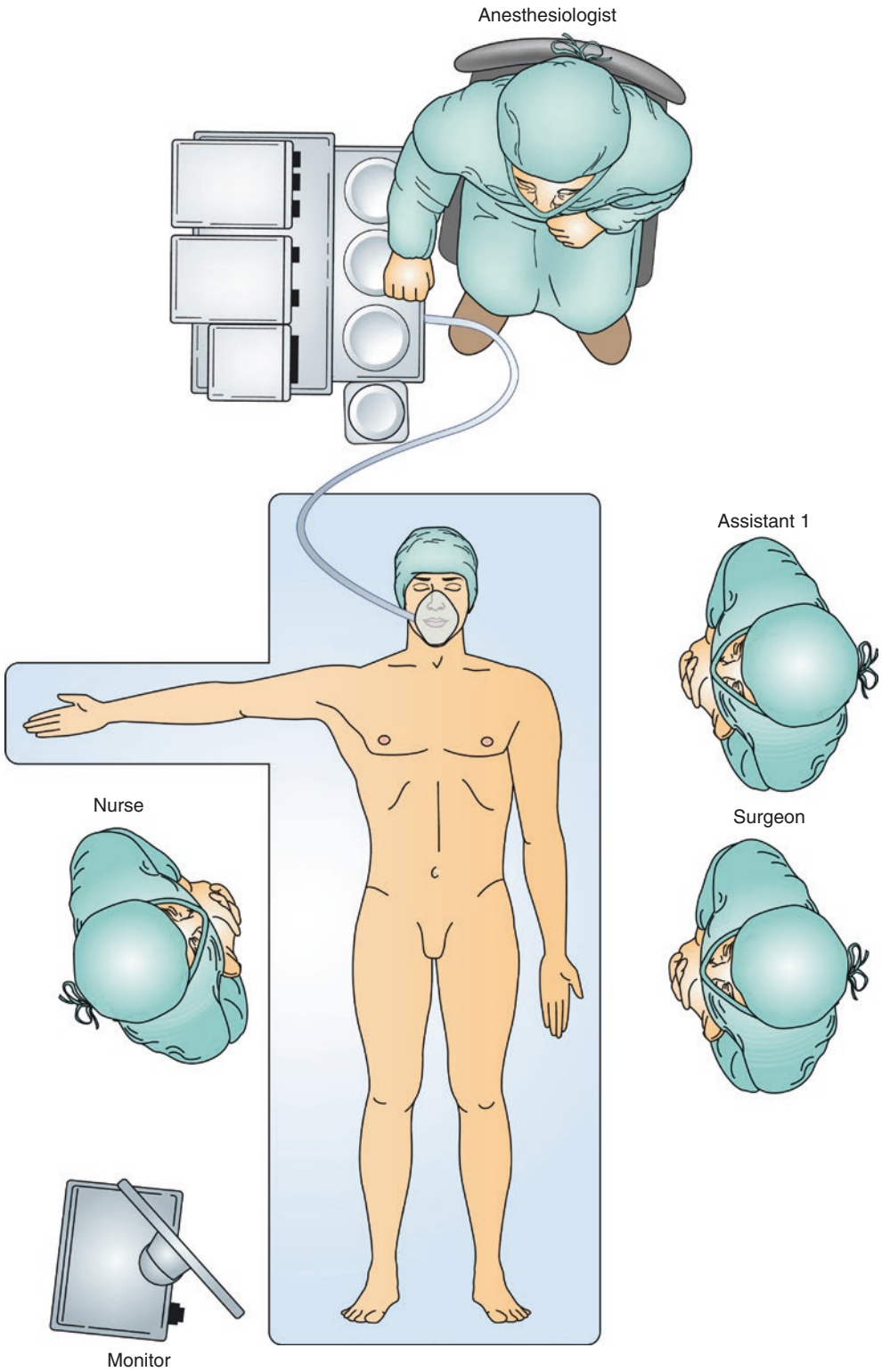

Fig. 31.1 Positioning the patient and the team. Patient in supine position. Anesthesiologist (ANS), surgeon (S), assistant (A1), nurse (N), monitor (M)

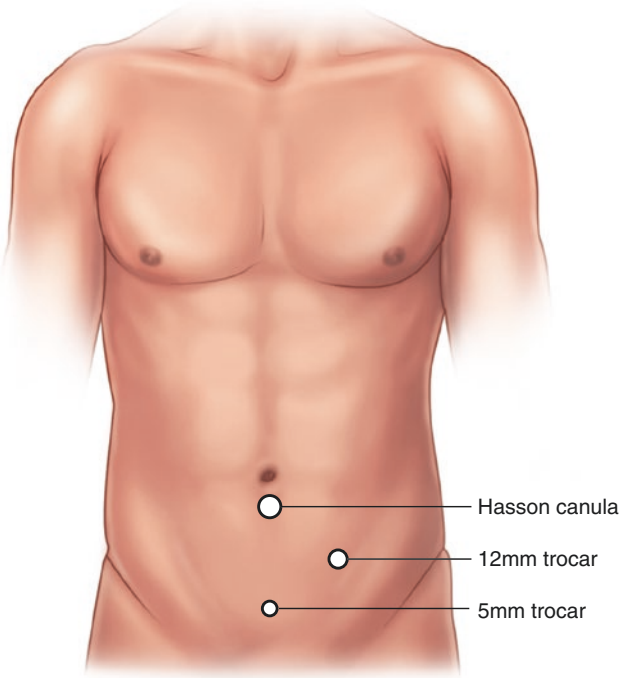

Fig. 31.2 Port placement for laparoscopic appendectomy

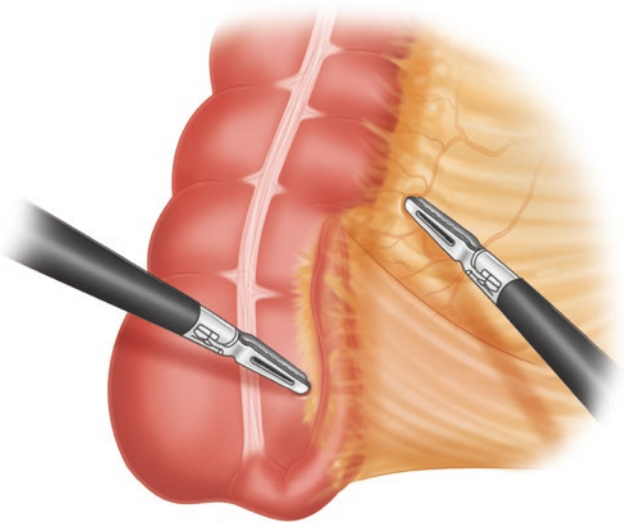

Fig. 31.3 Localization and exposure of the appendix

Take Down of Mesoappendix and Appendix Base (Figs. 31.4 and 31.5)

- Switch to a 5 mm camera and put it into left lower quadrant port.
- If another 12 mm trocar in the right lower quadrant is available, keep the camera at the umbilical port.

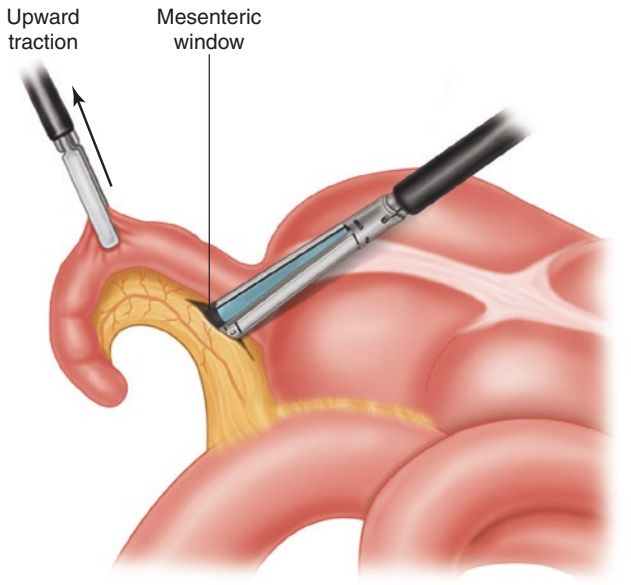

Fig. 31.4 Create window at mesoappendix near the base of appendix

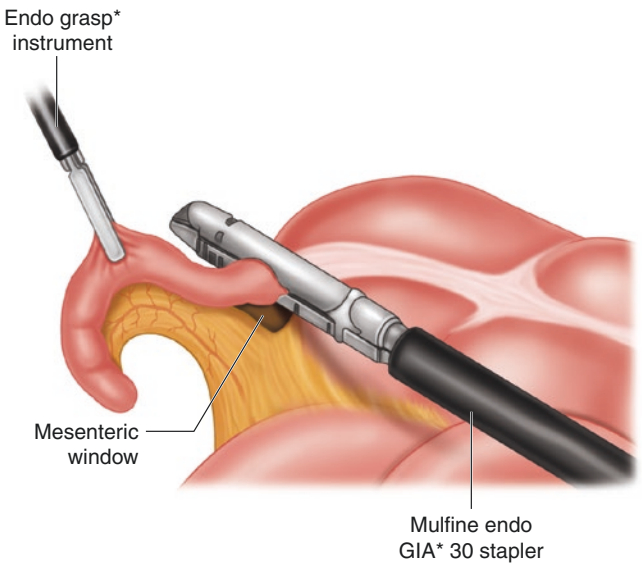

Fig. 31.5 Transect appendix at its base with stapler

- Introduce a vascular or medium cartridge linear stapler through umbilical port depending on which will be taken down first (vascular load for mesentery and medium load for appendix base).
- Alternatively, the mesentery can be taken down by Harmonic scalpel, or dissect a window in the mesoappendix near the base of the appendix (Fig. 31.4).
- The mesoappendix can be transected after applying clips and then electrocautery. The appendix can be transected by applying the stapler (Fig. 31.5). When clips are used, make sure they are not caught between the jaws of the stapler.

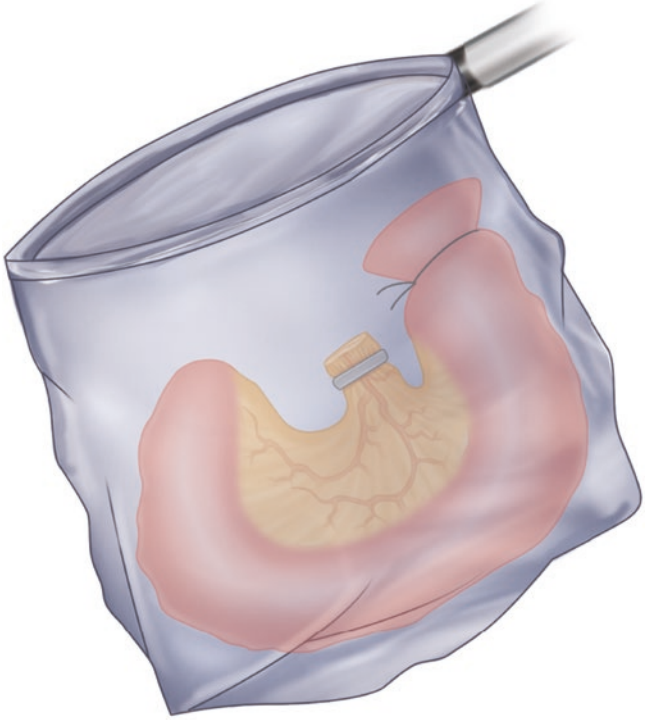

Fig. 31.6 Specimen removal

Irrigation, Hemostasis, and Specimen Removal (Fig. 31.6)

- Hold the appendix stump with a grasper through suprapubic port.
- Introduce clip applier through umbilical port, and clip staple line as needed for hemostasis.
- Introduce endo bag through umbilical port.
- Place appendix in the bag with a grasper.
- Remove bag.
- Irrigation and hemostasis of pelvis and appendix stump area.
- Close fascia at umbilical port site using 2-0 Vicryl on a UR-6 needle.
- If desired, infiltrate each port with local anesthetic.
- Close port site with subcuticular sutures using a 4-0 Monocryl or Vicryl suture.

Pearls and Pitfalls

- A Foley catheter should be placed to decompress the bladder and avoid injuries during trocar placement.
- In females if appendix is normal in appearance, explore the peritoneum, ovaries, tubes, and uterus to rule out endometriosis.
- In males if appendix is normal, explore the stomach, duodenum, and colon.
- If appendix is normal, explore the last 2 feet of small bowel to rule out Meckel's diverticulum.

Access Reader Checklist Appendix

☑ READER CHECKLIST
Laparoscopic Appendectomy

☑ PREFERENCE CARD

►**Instruments**
__15-blade scalpel
__Adson forceps
__Rat Tooth Grasping Forceps
__DeBakey forceps
__Kocher Clamps
__Kelly Clamps
__Mayo Scissors
__Electrocautery (35/35)/Grounding pad
__Suction
__Army-Navy retractors
__Two ratcheted bowel graspers
__Maryland dissector
__Stapler with vascular 45 mm and medium thickness 45 cartridges
__Ultrasonic dissector (optional)
__Hassan blunt port, 5 mm ports x2
__General endoscopic drape
__10 mm scopes and 5 mm scope
__Camera/light cord
__Insufflation cord
__Endocatch
__Suction/irrigation and Saline 1000 ml
__Bupivacaine
__10 mm Syringe, 25 G hypo
__Steri-strips ½ inch
__Anti fog
__Ligaclip applier 5 mm

►**Sutures**
__2-0 vicryl on UR-6 needle
__4-0 Vicryl PS-1 needle
__Needle driver

☑ PATIENT POSITIONING/ OPERATING ROOM SETUP

►**Patient Positioning**
__Patient position supine
__Operating table rotated 15 – 30 degrees left
__Left arm is tucked in at the patient's side
__Right arm may be extended

►**Operating Room Setup**
__Surgeon on patient's left side
__Assistant to right of surgeon initially, then move to left
__Nurse on patients right
__Anesthesiologist at patients head
__Monitor position at patient's right
__Trocars
  __12-mm camera port location at umbilical port.
  __Two, 5-mm trocar: one suprapubic and one left lower quadrant lateral to rectus muscle
  __Alternative: additional 12 mm trocar can be used in left lower quadrant

☑ NODAL POINTS

►**Localization and Exposre of Appendix**
__Introduce left hand ratcheted grasper through suprapubic port
__Right hand soft bowel clamp through left lower quadrant port
__Identify terminal ileum and cecum
__Retract leocecal fold of Treves cephalad
__Hold appendix up with left hand ratcheted grasper
__Swipe small bowel and expose base of appendix with closed soft bowel clamp.
__If needed, introduce additional 5 mm trocar at right upper abdominal wall

►**Takedown of Mesoappendix and Appendix Base**
__Switch to 5-mm camera and put it into left lower quadrant port
__If another 12 mm trocar in right lower quadrant is available, keep the camera at umbilical port
__Introduce a vascular or medium cartridge linear stapler through umbilical port depending on which will be taken down first (vascular load for mesentery and medium load for appendix base)

►**Takedown of Mesoappendiex and Appendix Base**
__Alternatively, mesentery can be taken down by harmonic scalpel, or dissect window in mesoappendix near base of appendix
__Mesoappendix can be transected after applying clips, then electrocautery.
__Appendix can be transected by applying stapler
__When clips used, make sure they are not caught between jaws of stapler

►**Irrigation, Hemostatis and Specimen Removal**
__Holding appendix stump with grasper through suprapubic port, introduce clip applier through umbilical port and clip staple line, as needed, for hemostasis
__Introduce Endobag through umbilical port
__Place appendix in bag with grasper
__Remove bag
__Irrigation and hemostasis of pelvis and appendix stump area
__Close fascia at umbilical port site using 2-0 vicryl on UR-6 needle
__If desired, infiltrate each port with local anesthetic
__Close port site with subcuticular sutures using a 4-0 monocryl or vicryl suture