

Append



TERI JUNGE, CST/CFA

delectomy

CASE STUDY

DR MITCHELL HAS A 46-YEAR-OLD FEMALE PATIENT IN THE EMERGENCY DEPARTMENT WHO PRESENTED WITH RIGHT LOWER QUADRANT PAIN, DIARRHEA, FEVER, NAUSEA AND VOMITING. UPON PHYSICAL EXAM, SHE EXHIBITS REBOUND TENDERNESS OVER McBURNEY'S POINT. HER CBC SHOWS AN ELEVATED WHITE BLOOD CELL COUNT. HER PREGNANCY TEST IS NEGATIVE AND HER UA SHOWS NO SIGN

OF URINARY TRACT INFECTION. DR MITCHELL'S PRELIMINARY DIAGNOSIS IS APPENDICITIS. HE WOULD LIKE TO PERFORM AN APPENDECTOMY, USING THE TRADITIONAL APPROACH, AS SOON AS POSSIBLE. THE PATIENT HAS NO KNOWN ALLERGIES.

USE THE INFORMATION PROVIDED IN THE SAMPLE PREFERENCE CARD AND INSTRUMENT LIST (TABLES 1 AND 2) AS RESOURCES FOR COMPLETING THE CASE STUDY.

Editor's Note

An example of a completed case study for an appendectomy follows. Suggested variations for the appendectomy case study report include: Pediatric patient, pregnant patient, endoscopic approach, change of diagnosis during the procedure (eg ovarian cyst).

Preoperative Phase

PLANNED PROCEDURE: Appendectomy

SURGEON'S NAME: Dr Mitchell

DEFINITION, PURPOSE, AND EXPECTED OUTCOME OF PROCEDURE: Appendectomy—removal of the appendix. Usually performed when appendix is inflamed to prevent rupture.

PATIENT'S AGE AND GENDER: 46-year-old female

ADDITIONAL PATIENT INFORMATION: No known allergies

PREOPERATIVE DIAGNOSIS: Appendicitis

DIAGNOSTIC EXAMS AND PERTINENT RESULTS: History—right lower quadrant pain, diarrhea, fever, nausea and vomiting; CBC—elevated white blood cell count; pregnancy test—negative; UA—no sign of urinary tract infection; physical exam—rebound tenderness over McBurney's point

RELEVANT ANATOMY: Layers of the abdominal wall; peritoneal cavity; colon (specifically the appendix and cecum); female reproductive system; urinary system

RELATED PATHOLOGY: Appendicitis; peritonitis; Meckel's Diverticulum; consider the possibility that the condition could have a gynecologic origin (eg ovarian cyst)

EQUIPMENT LIST: Electrosurgical unit; suction apparatus; headlamp (available)

INSTRUMENT LIST: Minor instrumentation set; medium Richardson retractor

SUPPLY LIST:

PACK	Customized basic pack
BASIN SET	Double
GLOVES	Surgical Technologist—Scrub Role (STSR); surgeon; surgical assistant (sizes of choice—recommend double gloving)
BLADES	#10 x 2
DRAPES	4 towels; laparotomy sheet with vertical fenestration
DRAINS	Usually not needed; Penrose or drain of surgeon's choice available
DRESSINGS	Bacitracin ointment; Telfa; 4x4 gauze; 2" paper tape
SUTURE	Ties: 2-0 Vicryl Reel Pursestring: 3-0 Vicryl SH Peritoneum: 2-0 Vicryl CT-1 Fascia: 2-0 Vicryl CT-1 x 2 Sub-Q: None Skin: Staples

MEDICATIONS AND RELATED SUPPLIES: Bupivacaine 0.5% available for postoperative pain control, control syringe, and 25 gauge 1½" needle

OTHER: N/A

PLANNED ANESTHETIC: General

PLANNED INCISION AND DESCRIPTION: McBurney's incision—The McBurney's incision is a right lower quadrant (RLQ) incision. McBurney's point is two-thirds the distance between the umbilicus and the anterior superior spine of the ilium. The incision is perpendicular to, one-third above, and two-thirds below the imaginary line between the umbilicus and the ilium. The incision may be adjusted slightly to coincide with the most tender point. The incision may also be placed slightly more laterally to coincide with the lateral edge of the rectus abdominis allowing maximal exposure. The Rocky-Davis transverse incision is occasionally used as an alternative.

PATIENT POSITION AND NECESSARY POSITIONING SUPPLIES: Supine with both arms extended and secured on

armboards; foam headrest and elbow pads; safety strap applied two inches proximal to the knees

SKIN PREP—TYPE AND PARAMETERS: Shave probably not necessary for female patient; Betadine 5-minute prep that extends from the mid-chest to the thighs and laterally as far as possible

DRAPE APPLICATION: Four towels (cloth or adhesive) exposing the RLQ; laparotomy sheet; apply light handles and secure electro-surgical pencil cord and suction tubing

PRACTICAL CONSIDERATIONS: If a surgical assistant is not available, the STSR will be expected to fill the

active activities, respond to hand signals and anticipate, or predict, the needs of the patient and other surgical team members.

- Pass the scalpel (“skin knife”—#10 blade on a #3 knife handle) to the surgeon’s dominant hand in accordance with school or facility policy (use of a safe transfer technique may be necessary).
 - Prepare electro-surgical pencil and/or hemostats for use.
 - Expect the surgeon to place the scalpel on the Mayo stand. Keep hands out of the way.
2. *Hemostasis is achieved by the surgeon while the surgical assistant maintains tension on the wound edges and*



FIGURE 1

Making the incision.

scrub and assistant roles simultaneously. A major instrumentation set should be available.

Intraoperative Phase

This section shows each procedural step, followed by the role of the surgical technologist-scrub role (STSR).

1. *The surgeon incises the skin over McBurney’s point. The surgical assistant maintains tension on either side of the wound.*
 - Ensure readiness of all equipment and supplies.
 - Expect the use of nonverbal communication during the procedure. Observe the intraoper-

removes excess blood and electro-surgical plume, as needed.

- Pass the electro-surgical pencil to the surgeon’s dominant hand.
- Alternatively or additionally, hemostats (curved Criles are appropriate for the adult patient) may be needed.
 - Pass the Crile(s) to the surgeon’s dominant hand.
 - Pass the electro-surgical pencil or suture material (2-0 Vicryl reel) to the surgeon.
 - If suture is used by the surgeon, pass the suture scissors (straight Mayo) to the surgical assistant.
 - Repeat the previous steps as needed.

- Retrieve all items, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is anticipated.
 - Pass the suction tubing with the Yankauer tip attached to the surgical assistant, if necessary. (The suction apparatus is typically positioned on the sterile field near the surgical assistant's dominant hand. Typically, it is not necessary for the STSR to pass or retrieve the suction apparatus during the procedure.) Reuse is anticipated.
 - Retrieve the scalpel and place it in its designated storage location (usually on the back table). Reuse of the "skin knife" is not anticipated.
 - Retrieve the electrocautery pencil, clean the tip as needed, and place in the holster when not in use. Reuse is anticipated.
 - Prepare the scalpel ("deep knife"—#10 blade on a #3 knife handle) for use.
4. ***The surgeon makes a small incision (nick) with the scalpel in the aponeurosis of the external oblique.***
 - Pass the scalpel to the surgeon's dominant hand.
 - Provide the electrocautery pencil to the surgeon, as needed. Retrieve the electrocautery pencil, clean the tip as needed, and place in the holster when not in use. Reuse is anticipated.

FIGURE 2

Exposing the appendix.



- Provide additional surgical sponges, as needed. First, place the fresh sponge(s) near the wound edge(s); then remove the soiled sponge(s) from the surgical site and place in the kick bucket.
 - Prepare two small retractors (such as US Army) for use.
3. ***The wound edges are retracted by the surgical assistant. The incision is deepened through the subcutaneous tissue layer to the aponeurosis of the external oblique with the electrocautery pencil by the surgeon.***
 - Pass the US Army retractors to the surgical assistant with the shallow ends toward the wound.
 - Prepare the Metzenbaum scissors and the tissue forceps with teeth for use.
 - Expect the surgeon to place the scalpel on the Mayo stand. Keep hands out of the way.
 5. ***The aponeurosis of the external oblique is opened (in the direction of its fibers) to the length of the skin incision with a Metzenbaum scissors by the surgeon.***
 - Pass the Metzenbaum scissors to the surgeon's dominant hand and a tissue forceps with teeth to the opposite hand.
 - Retrieve the scalpel and place it in its designated storage location (usually on the Mayo stand). Reuse is anticipated.

6. ***The edges of the external oblique are retracted by the surgical assistant exposing the internal oblique.***
 - Larger retractors will likely be needed; the surgical assistant will probably switch to the deep end of the US Army without the assistance of the STSR.
 - Retrieve the scissors and tissue forceps, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is anticipated.
 - Prepare the scalpel for use.
7. ***The fascia of the internal oblique is incised in the direction of the muscle fibers by the surgeon.***
 - Pass the scalpel to the surgeon's dominant hand.
 - Expect the surgeon to place the scalpel on the Mayo stand. Keep hands out of the way.
8. ***The surgeon separates (splits) the internal oblique in the direction of its fibers using caution to protect the iliohypogastric nerve.***
 - The surgeon will likely use his or her fingers (blunt dissection) to split the fibers of the internal oblique.
 - Retrieve the scalpel and return it to its designated storage location on the Mayo stand. Reuse is anticipated.
 - Anticipate the need for larger retractors (such as medium/large Richardson-Eastman). Retrieve them from the back table and place in the location on the Mayo stand that was previously occupied by the US Army retractors that are currently in use. Do not turn completely away from the field and only glance away from the operative site momentarily to retrieve the retractors.
9. ***The surgical assistant retracts the internal oblique to expose the transversus muscle.***
 - Provide two medium/large Richardson-Eastman retractors to the surgical assistant when needed.
10. ***The surgeon uses blunt dissection to split the transversus muscle in the direction of its fibers to expose the preperitoneal fat.***
 - Retrieve the US Army retractors, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is anticipated.
 - Provide the electro-surgical pencil to the surgeon, as needed. Retrieve the electro-surgical pencil, clean the tip as needed, and place in the holster when not in use. Reuse is anticipated.
11. ***The preperitoneal fat is retracted laterally by the surgical assistant to expose the peritoneum.***
 - A moistened sponge on a stick may be useful to sweep the preperitoneal fat to the side.
 - Anticipate opening of the peritoneum.
 - Moistened laparotomy sponges replace all 4x4 sponges. First, place two laparotomy sponges near the wound edges; then remove the 4x4s from the surgical site and place in the kick bucket.
 - Prepare two curved Criles for use.
12. ***The surgeon carefully grasps the peritoneum with two clamps. The surgical assistant lifts the clamps to form a fold of peritoneum. The surgeon pinches the fold to ensure that the abdominal viscera are not trapped within the fold.***
 - Pass two curved Criles to the surgeon, one at a time.
 - Prepare the scalpel for use.
13. ***The surgeon nicks the peritoneum with the scalpel.***
 - Pass the scalpel to the surgeon's dominant hand.
 - Prepare the Metzenbaum scissors and a tissue forceps without teeth for use.
 - Expect the surgeon to place the scalpel on the Mayo stand. Keep hands out of the way.
14. ***The surgeon extends the peritoneal incision with a scissors.***
 - Pass the Metzenbaum scissors and a tissue forceps without teeth to the surgeon.

TABLE 1 Preference card

Preference card

SURGEON:	Dr Mitchell	
PROCEDURE:	Appendectomy—Adult (Traditional Approach)	
POSITION:	Supine	
GLOVE SIZE/STYLE:	8 white with 7½ ortho over	DOMINANT HAND: Right
<hr/>		
EQUIPMENT:	Electrosurgical unit with dispersive electrode Standard setting: 40/40 Blend 1 Suction Apparatus Headlamp (available)	
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SUPPLIES:	Basic pack (customized) Laparotomy sheet (vertical fenestration) Double basin set Gloves for all sterile team members Poole suction tip—disposable Electrosurgical pencil Aerobic and anaerobic culture tubes (available)	
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INSTRUMENTATION:	Minor instrumentation set Medium Richardson retractor	
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SUTURE AND USAGE:	Ties:	2-0 Vicryl Reel
	Pursestring:	3-0 Vicryl SH
	Peritoneum:	2-0 Vicryl CT-1
	Fascia:	2-0 Vicryl CT-1 x 3
	Sub-Q:	None or 3-0 Vicryl CT-1 (obese patient)
	Skin:	Staples or 3-0 Nylon (if ruptured)
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DRESSINGS:	Bacitracin ointment Telfa 4x4 gauze 2" Paper tape	
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SKIN PREP:	Shave, if necessary Betadine—5 minute	
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MEDICATIONS:	Bupivacaine 0.5% (available for postoperative pain control) Control syringe (if needed) 25 gauge 1½" Needle (if needed)	
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- Retrieve the scalpel and return it to its designated storage location on the Mayo stand. Reuse is anticipated.
 - The Criles may be left in place to retain the peritoneum or may be removed. If removed—retrieve, clean as needed, and place in their designated storage location on the Mayo stand. Reuse is anticipated.
- 15. Peritoneal fluid is cultured, if necessary.**
- Retrieve the scissors and tissue forceps, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is anticipated.
 - While keeping up with the needs of sterile team members, be sure to maintain the sterile field in a safe and orderly fashion.
- 17. If the appendix is located retroceally, it may be necessary for the surgeon to broadly grasp the cecum to deliver it and the attached appendix.**
- Provide additional moistened laparotomy sponges, as needed. First, place the fresh laparotomy sponge(s) near the wound edge(s); then remove the soiled sponge(s) from the surgical site and place in the kick bucket.
 - Prepare the Metzenbaum scissors and tissue forceps without teeth for possible use.



FIGURE 3

Placement of retractors.

- Provide aerobic and anaerobic culture tubes, if needed.
 - Provide the Poole suction tip to evacuate peritoneal fluid, if needed.
 - Replace the Yankauer suction tip when the Poole tip is no longer needed.
- 16. Ideally, the appendix is mobilized (freeing fibrous adhesions) and delivered by the surgeon using finger dissection.**
- Culture specimens must be processed immediately.
 - No additional instrumentation is needed at this time.
- 18. It may also be necessary for the surgeon to mobilize the cecum from the lateral peritoneal reflection.**
- Pass the Metzenbaum scissors and tissue forceps without teeth to the surgeon, if needed. Otherwise, replace in their designated storage locations on the Mayo stand.
 - Prepare two Criles for possible use.
- 19. If present, the band tethering the midportion of the appendix is cut by the surgeon to allow mobilization of the appendix.**
- Pass two Criles, if needed. Otherwise, replace in their designated storage location on the Mayo stand.



FIGURE 4

Placement of
purse string

suture.

- Prepare and pass the Metzenbaum scissors and tissue forceps without teeth, if needed.
 - Provide suture or the electrocautery pencil, as needed.
 - Prepare two Babcocks for use.
- 20. The surgeon secures the appendiceal body with one or two noncrushing instruments.**
- Pass one Babcock to the surgeon; a second Babcock may be needed according to the length of the appendix. If the second Babcock is not used, replace it in its designated storage location on the Mayo stand.

- Retrieve the instruments and supplies, clean as needed, and place in their designated storage locations. Reuse is anticipated.
- 21. The appendiceal base is visualized at its junction with the cecum as the surgical assistant places gentle traction on the cecum.**
- Provide additional moistened laparotomy sponges, as needed. First, place the fresh laparotomy sponge(s) near the wound edge(s); then remove the soiled sponge(s) from the surgical site and place in the kick bucket.
 - Prepare for division of the appendiceal mesentery (also known as the mesoappendix).
 - Prepare two curved Criles and the Metzenbaum scissors for use.
- 22. The appendiceal mesentery is clamped, divided, and ligated from distal to proximal by the surgeon. The surgeon uses the tip of the Crile to create an opening in the distal mesentery and places the clamp. The second Crile is passed through the same opening and placed opposing the first. The surgical assistant and surgeon each steady one Crile while the surgeon cuts the mesentery between the clamps. The tissue contained within the clamps is ligated. Mobilization of the appendix will continue proximally along the length of the mesentery until the base of the appendix is exposed.**
- Pass two curved Criles sequentially to the surgeon's dominant hand.
 - Pass the Metzenbaum scissors to the surgeon's dominant hand.
 - Prepare the 2-0 Vicryl reel for use. Note the amount of suture that remains on the reel. Request a replacement, if necessary.
 - Pass the 2-0 Vicryl reel to the surgeon.
 - Retrieve the Metzenbaum scissors, clean as needed, and place in its designated storage location on the Mayo stand. Reuse is anticipated.
 - Pass the suture scissors to the surgical assistant.
 - The suture reel and suture scissors may be retained by the team members for reuse. Otherwise, retrieve and prepare for reuse.

TABLE 2 Instrument list/count sheet—minor set

Instrument list/count sheet—minor set

INSTRUMENT NAME	QUANTITY	SET ASSEMBLY	INITIAL COUNT	FIRST COUNT	FINAL COUNT
Halsted mosquito straight 5"	4				
Halsted mosquito curved 5"	8				
Crile curved 5ž"	4				
Crile straight 5ž"	2				
Rochester pean 6o"	2				
Allis 6"	2				
Babcock 6o"	2				
Mayo-Hegar needle holder 7"	2				
Crile-Wood needle holder 6"	1				
Mayo scissors straight 5ž"	1				
Mayo scissors curved 5ž"	1				
Metzenbaum scissors curved 7"	1				
Metzenbaum scissors curved 5ž"	1				
Foerster sponge forceps straight 9ž"	2				
Backhaus perforating towel clamp 5o"	4				
Lorna nonperforating towel clamp 5o"	2				
Senn sharp	2				
Volkman 3 prong sharp	2				
US Army	2				
Richardson-Eastman medium/large	2				
Yankauer suction tip	1				
Frazier suction tip 9 French with stylet	1				
Probe with eye 5ž"	1				
Grooved director 5ž"	1				
Tissue forceps without teeth 5ž"	1				
Tissue forceps with teeth 5ž"	1				
Adson tissue forceps with teeth 4Æ"	2				
Knife handle #3	2				

Signature of individual preparing set: _____

- The above steps will be repeated along the appendiceal mesentery until the base of the appendix is exposed.
 - Retrieve the Criles, clean as needed, and place in their designated storage location on the Mayo stand. Reuse is anticipated.
 - Alternatively, the surgeon may double clamp and cut all attachments, then ligate.
 - Prepare a straight Crile for use.
- 23. When the appendiceal mesentery is completely separated from the appendix, the surgeon crushes the base of the appendix and the contents of the appendix are milked distally to 1 cm creating proximal and distal crush marks.**
- Pass the straight Crile to the surgeon.
- 24. The surgeon applies a clamp to the appendiceal base (proximal crush mark).**
- Anticipate continued use of the straight Crile.
 - Prepare the 2-0 Vicryl reel for use.
- 25. An absorbable suture ligature is applied by the surgeon to the appendiceal base (proximal to the clamp) without strangulating the tissue. The clamp is loosened by the surgical assistant while the ligature is secured, then reapplied. The surgical assistant may cut the suture ends long to facilitate control of the appendiceal stump.**
- Pass the 2-0 Vicryl reel to the surgeon.
 - Pass the suture scissors to the surgical assistant.
 - The suture reel and suture scissors may be retained by the team members for reuse. Otherwise, retrieve, clean as needed, and prepare for reuse.
- 26. Another ligature is placed by the surgeon at the distal crush mark.**
- Pass the 2-0 Vicryl reel to the surgeon if needed.
 - Pass the suture scissors to the surgical assistant if needed.
 - Prepare the sterile field to accept the contaminated instruments, supplies, and specimen that will result when the appendix is severed.
 - Spread a towel near the wound edge
 - Place a kidney basin on the towel to contain the contaminated items.
- Prepare the scalpel for use.
- 27. The surgeon uses the scalpel to sever the appendix flush with (distal to) the clamp that remains at the appendiceal base.**
- Pass the scalpel to the surgeon's dominant hand.
 - Retrieve the instruments and supplies, clean as needed, and place in their designated storage locations. Reuse is anticipated.
- 28. The appendix and all contaminated instruments are contained and removed from the immediate sterile field.**
- All of the instruments and supplies that have been exposed to the intestinal mucosa and the specimen (severed appendix) are placed in the basin. Expect the surgeon to place the scalpel in the basin. Keep hands out of the way. These items are considered contaminated and are not to be touched or reused. Reuse of the basin is anticipated.
 - Prepare the electro-surgical pencil for possible use.
- 29. The appendiceal stump may be cauterized by the surgeon to prevent mucocele formation.**
- Provide the electro-surgical pencil, if needed. The tip must be replaced if contact with the intestinal mucosa occurs. The contaminated tip is placed in the small basin with the other contaminated items. Place in holster when not in use.
 - Prepare the purse string suture (3-0 Vicryl SH loaded onto an 8" needle holder) and a tissue forceps without teeth for use. Discard the suture packaging material in the sterile suture/trash bag.
- 30. An absorbable cecal purse string suture may be applied by the surgeon to facilitate inversion of the appendiceal stump.**
- Pass the purse string suture to the surgeon's dominant hand and the tissue forceps without teeth to the opposite hand.

- Pass the suture scissors to the surgical assistant.
- All additional contaminated items are placed in the basin. Expect the surgeon to place the suture needle in the basin. Keep hands out of the way. The basin is then isolated in a designated location on the back table.

31. The surgeon may identify the terminal ileum and deliver the distal ileum approximately 24" into the wound to rule out Meckel's diverticulum. If a Meckel's diverticulum is found, a resection is performed.

- Observe the actions of the surgeon and listen for verbal clues.
- Mentally prepare for a possible diverticulectomy.
- Request additional supplies, if needed.
- Retrieve the instruments and supplies, clean as needed, and place in their designated storage locations. Reuse is anticipated.
- Prepare the electrocautery pencil for possible use.

32. Hemostasis is achieved.

- Provide the electrocautery pencil, if needed. Otherwise, replace in the holster.
- Retrieve the electrocautery pencil, clean the tip as needed, and place in the holster when not in use. Reuse is anticipated.

33. The abdominal viscera are returned to the abdominal cavity.

- Organize the sterile field for the first count.
- Request, label, and prepare the wound irrigation solution (may be delivered in a pitcher or a bulb syringe—according to the surgeon's preference).

34. The wound is irrigated.

- Pass the wound irrigation solution to the surgeon. Be sure to state the name of the solution.
- A kidney basin may be useful to contain excess irrigation solution.
- Provide the Poole suction tip, if needed.
- Make a mental note of the amount of irrigation fluid used.



- Prepare four curved Criles for use. Remember, two Criles may already be in position on the peritoneum, reducing the current need to two.

35. The surgeon may place four clamps on the quadrants of the peritoneum to facilitate closure.

- Pass the curved Criles (two or four) sequentially to the surgeon's dominant hand.
- Retrieve all irrigation supplies; refill as needed, place in their designated storage locations. Reuse is anticipated.
- Prepare the peritoneal suture (2-0 Vicryl CT-1 loaded onto an 8" needle holder) and a tissue forceps with teeth for use. Discard the

FIGURE 5

Irrigating the wound.

suture packaging material in the sterile suture/trash bag.

36. *The peritoneum is continuously closed by the surgeon. (Wound irrigation may be performed following closure of each layer.)*

- Pass the peritoneal suture to the surgeon's dominant hand and a tissue forceps with teeth to the opposite hand.
- Initiate the first count.
- Pass the suture scissors to the surgical assistant.
- Complete the first count and report the results to the surgeon.
- Provide wound irrigation supplies, as needed.

suture packaging material in the sterile suture/trash bag.

37. *(The thin transversus muscle is usually not closed.) The external fascia of the internal oblique is continuously closed by the surgeon.*

- Pass the fascial suture to the surgeon's dominant hand and if necessary, a tissue forceps with teeth to the opposite hand.
- Pass the suture scissors to the surgical assistant, if necessary.
- Retrieve the Criles, clean as needed, and place in their designated storage location on the Mayo stand. Reuse is not anticipated.

FIGURE 6

Closing the peritoneum.



- Expect the surgeon to place the needle holder containing the needle from the peritoneal suture on the Mayo stand. Keep hands out of the way.
- The tissue forceps with teeth and suture scissors may be retained by the team members for reuse. Otherwise retrieve, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is anticipated.
- Provide a pair of smaller retractors (such as US Army) to the surgical assistant when needed.
- Prepare the fascial suture (2-0 Vicryl CT-1 loaded onto an 8" needle holder) and tissue forceps with teeth, if necessary. Discard the
- Retrieve the Richardson-Eastman retractors, clean as needed, and place in their designated storage location on the Mayo stand. Reuse is not anticipated.
- Provide wound irrigation supplies as needed.
- Expect the surgeon to place the needle holder containing the needle from the fascial suture on the Mayo stand. Keep hands out of the way.
- The tissue forceps with teeth and suture scissors may be retained by the team members for reuse. Otherwise retrieve, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is anticipated.

- Retrieve the needle holder containing the needle from the peritoneal suture. Remove any excess suture from the needle and discard in the sterile suture/trash bag. Place the needle in its designated storage location (needle magnet) on the back table. Clean the needle holder as needed and place in its storage location on the Mayo stand. Reuse is anticipated.
- Prepare the suture (2-0 Vicryl CT-1 loaded onto an 8" needle holder) for the aponeurosis of the external oblique and if necessary, a tissue forceps with teeth for use. Discard the suture packaging material in the sterile suture/trash bag.

38. *The aponeurosis of the external oblique is continuously closed by the surgeon.*

- Pass the suture for the aponeurosis of the external oblique to the surgeon's dominant hand and, if necessary, a tissue forceps with teeth to the opposite hand.
- Pass the suture scissors to the surgical assistant if necessary.
- Provide wound irrigation supplies as needed.
- Expect the surgeon to place the needle holder containing the needle from the suture used for the aponeurosis of the external oblique on the Mayo stand. Keep hands out of the way.
- The tissue forceps with teeth and suture scissors may be retained by the team members for reuse. Otherwise retrieve, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is anticipated.
- Retrieve the needle holder containing the needle from the fascial suture. Remove any excess suture from the needle and discard in the sterile suture/trash bag. Place the needle in its designated storage location (needle magnet) on the back table. Clean the needle holder as needed and place in its designated storage location on the Mayo stand. Reuse is anticipated.
- Prepare the fascial suture (2-0 Vicryl CT-1 loaded onto an 8" needle holder) and, if necessary, a tissue forceps with teeth for use. Place the suture packaging material in the sterile trash/suture bag.

39. *Scarpa's fascia is closed by the surgeon with interrupted sutures.*

- Pass the fascial suture to the surgeon's dominant hand and, if necessary, a tissue forceps with teeth to the opposite hand.
- Pass the suture scissors to the surgical assistant if necessary.
- Provide wound irrigation supplies as needed.
- Expect the surgeon to place the needle holder containing the needle from the fascial suture on the Mayo stand. Keep hands out of the way.
- Retrieve the needle holder containing the needle from the aponeurotic suture. Remove any excess suture from the needle and discard in the sterile suture/trash bag. Place the needle in its designated storage location (needle magnet) on the back table. Clean the needle holder as needed and place in its designated storage location on the Mayo stand. Reuse is not anticipated.
- Retrieve the suture scissors and tissue forceps, clean as needed, and place in their designated storage locations on the Mayo stand. Reuse is not anticipated.
- Prepare two Adson tissue forceps with teeth and the skin stapling device for use.

40. *(The subcutaneous layer is usually not closed.) The skin is closed.*

- Pass the surgeon two Adson tissue forceps with teeth (one to each hand).
- Pass the skin stapling device to the surgical assistant's dominant hand.
- Retrieve the needle holder containing the needle from the fascial suture. Remove any excess suture from the needle and discard in the sterile suture/trash bag. Place the needle in its designated storage location (needle magnet) on the back table. Clean the needle holder as needed and place in its designated storage location on the Mayo stand. Reuse is not anticipated.
- Retrieve the US Army retractors, clean as needed, and place in their storage location on the Mayo stand. Reuse is not anticipated.

- Perform the final count and report the results to the surgeon.
- Report the total amount of irrigation solution used to the circulator and/or anesthesia provider.
- Obtain the dressing materials.

41. The wound is dressed.

- Clean and dry the surgical site if needed.
- Provide the dressing materials; assist with application as needed.
- Retrieve the Adson tissue forceps and skin stapling device and place in their designated storage locations on the Mayo stand. Reuse is not anticipated.
- Maintain sterility of the Mayo stand, back table, and basin set until the patient has been transported from the OR (according to school or facility policy).

Postoperative Phase

POSTOPERATIVE DIAGNOSIS: Appendicitis

PROCEDURE PERFORMED: Appendectomy

WOUND CLASSIFICATION: Class II (or higher according to the situation—eg rupture)

IMMEDIATE POSTOPERATIVE CARE: Excess prep solution is removed from the patient's skin, the dispersive electrode is removed, and the integrity of the skin is noted. The patient may be extubated and provided with a warm blanket. The patient is transferred to the gurney and transported to the postanesthesia care unit (PACU) where she remains for approximately one hour. During the initial recovery phase from general anesthesia, the patient's vital signs are monitored, her condition observed, and her physical needs (eg pain control and temperature regulation) are met. When the patient meets the PACU discharge criteria, she is transported to the inpatient room.

PROGNOSIS: Discharge from the health care facility is expected one to three days postoperatively. The patient is expected to return to normal

lifestyle, activities, diet, and exercise within four to six weeks.

POSSIBLE COMPLICATIONS: Hemorrhage, wound infection, formation of intraabdominal abscess, peritonitis, sepsis, adhesion formation, stump rupture, or injury to nearby structures.

ADDITIONAL RESPONSIBILITIES: According to the situation, the surgical team members may be responsible for completion of the instrument and OR cycles. The team may remain "on-call" in the event that this patient suffers complications or another patient requires surgical intervention.

About the author

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Appendectomy case study

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- A McBurney's incision is made in which quadrant?
 - right upper
 - left upper
 - right lower
 - left lower
- Which position is used for appendectomy?
 - prone
 - supine
 - lateral
 - reverse Trendelenburg
- Which suction tip is used immediately after the incision?
 - Yankauer
 - Pynchon
 - Frazier
 - Andrews-Pynchon
- When exposing the peritoneum, what is used to grasp the peritoneum?
 - Halsted mosquito straight
 - Halsted mosquito curved
 - Crile straight
 - Crile curved
- Which suction tip is used to evacuate peritoneal fluid?
 - Yankauer
 - Pynchon
 - Poole
 - Frazier
- Which are used, if needed, to secure the appendiceal body without crushing it?
 - Criles
 - Babcocks
 - Allis
 - Kellys
- Which type of closing device is used at the base of the appendix?
 - 2-0 Vicryl Reel
 - 3-0 Vicryl SH
 - staples
 - none of the above
- Which are mismatched?
 - 2-0 Vicryl SH/pursestring
 - 2-0 Vicryl Reel/ties
 - 2-0 Vicryl CT/fascia
 - none are mismatched
- When may the wound be irrigated?
 - after the abdominal viscera are returned to the abdominal cavity
 - after Scarpa's fascia is closed
 - after each layer of the peritoneum is closed
 - all of the above
- Which is used to close the subcutaneous layer?
 - Adson tissue forceps
 - skin stapling device
 - suture scissors
 - the subcutaneous layer is not usually closed.

Appendectomy case study

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Mark one box next to each number. Only one correct or best answer can be selected for each question.