Open Appendectomy

47

Edward Cho and Samy Maklad

Indications

- Acute appendicitis
- Interval appendectomy after treatment of appendiceal abscess/phlegmon
- Benign tumor of the appendix

Essential Steps

1. Make right lower quadrant incision over McBurney's point or the point of maximum tenderness that was marked prior to the anesthesia induction (*rarely*, *the incision is made in the lower midline or right paramedian*).
2. Divide each muscular and aponeurotic layer parallel to fibers to achieve a muscle-splitting incision.
3. Enter the peritoneum and note any discoloration or malodor of the peritoneal fluid. If present, send the peritoneal fluid for gram stain and culture.
4. Expose the cecum, pulling it into the wound and elevating it with a moist pad.
5. *Divide the lateral peritoneal attachments of the cecum* (*may be required for better exposure*).
6. Deliver the appendix into the wound.
7. If the appendix appears normal, check the terminal ileum and pelvis. Check for any fluid in the right paracolic gutter which may arise from another pathology such as perforated peptic ulcer (*convert to laparotomy if necessary*).
8. Carefully divide and ligate the appendiceal mesentery at the base of the appendix.
9. Crush the stump of the appendix with a clamp; then, move the clamp distally 1 cm on the appendix.
10. Ligate the proximal edge of the crushed appendix.
11. Take a *purse-string suture/z-stitch* in the wall of the cecum at the base of the appendix.
12. Transect the appendix above the ligature and remove it.
13. Invaginate the stump and tie the *purse-string suture/z-stitch*.
14. Place omentum over the site.
15. Aspirate any purulent material, cautiously irrigate, and gently suction.
16. *Incise and drain if a well-formed abscess cavity is encountered. Remove all fibrinous material lining the abscess cavity and send for culture*.
17. Check hemostasis.
18. Close the incision in three layers: peritoneum and transversalis fascia and internal and then external oblique.
19. *Close the subcutaneous tissue and skin/pack the wound open*.

E. Cho, MD, MPH • S. Maklad, MD (✉)
Department of General Surgery, University of Iowa Hospitals and Clinics, Iowa City, IA, USA
e-mail: maklad80@gmail.com

J.J. Hoballah et al. (eds.), *Operative Dictations in General and Vascular Surgery*,
DOI 10.1007/978-3-319-44797-1_47

Note These Variations

- Choice of incision
- Incision of the peritoneum to mobilize the cecum
- Location of the appendix
- Method of stump inversion
- Degree of purulence, whether drain used

Complications

- Pelvic abscess
- Stump leak
- Missed pathology (e.g., perforated ulcer)
- Small bowel obstruction

Template Operative Dictation

Preoperative Diagnosis Acute appendicitis

Procedure Appendectomy

Postoperative Diagnosis *Same/mesenteric adenitis/Crohn's disease/pelvic inflammatory disease/mucocele/mucinous adenocarcinoma/other*

Indications *Acute appendicitis*: This ___-year-old *male/female* presented with right lower quadrant pain of ___ duration, fever, and elevated WBC count. *Computed tomography scan/ultrasound/physical examination* was consistent with acute appendicitis. The decision was made to proceed with open appendectomy.

Interval appendectomy: This ___-year-old *male/female* had an appendiceal abscess treated by percutaneous drainage and antibiotics ___ weeks earlier and now presents for interval appendectomy. The decision was made to proceed with an open appendectomy.

Description of Procedure The patient was placed on the operating table in the supine position. Time-outs were performed using both preinduction and pre-incision safety checklist to verify correct patient, procedure, site, and additional critical information prior to beginning the procedure. General endotracheal anesthesia was induced. The abdomen was prepped and draped in the usual sterile fashion.

An incision was made in a natural skin line centered *over McBurney's point/over the palpable mass in the right lower quadrant/over the point of maximum tenderness*. Subcutaneous tissues were divided until the aponeurosis of the external oblique was encountered. This was opened in a direction parallel to its fibers, extending medially toward the rectus sheath and laterally to the iliac crest. The underlying internal oblique aponeurosis was exposed. The transversus abdominis was then encountered and similarly split. The transversalis fascia was entered. The peritoneum was lifted with forceps and entered, while being careful not to injure the bowel below. *Turbid fluid was encountered and cultured*. Moist pads were placed to protect the edges of the wound. The cecum was identified and pulled into the wound and held in place using a moist pad. *The appendix came into view/the lateral peritoneal attachment of the cecum was incised to mobilize the cecum and appendix*. The appendix was noted to be *free/retrocecal and inflamed/gangrenous/perforated/normal*. [*If normal*: *The terminal ileum was then run for ___ ft and found to be normal/inflamed. Pelvic viscera were inspected and found to be ___. A presumptive diagnosis of Crohn's disease/mesenteric adenitis/inflamed Meckel's diverticulum/pelvic inflammatory disease was made*. (*Include details of other procedures performed.*) *The decision was made to proceed with appendectomy*.]

The mesentery of the appendix was divided between clamps and ligated with 3-0 silk. The base of the appendix was crushed with a clamp. The clamp was then advanced and clamped distally 1 cm, toward the tip of the appendix. The appendix was ligated at the proximal edge of the crushed portion with a 0 chromic ligature. A *purse-string suture/z-stitch* was taken in the wall of the cecum. The appendix was held upward and cut distal to the ligature and removed. The stump was (*cauterized and*) then invaginated into the cecum using forceps, and

the *purse-string suture/z-stitch* was tied in such a manner as to completely invert and cover the stump. Hemostasis was checked. Omentum was placed on the site of the operation.

No other pathologies were noted/an abscess was encountered and a swab was sent for gram stain and culture. The abscess was well formed; *its entire lining of fibrinous material was removed and sent to the lab for culture*. All purulent material was aspirated, and the field was gently irrigated with normal saline. *A closed suction drain was placed in the abscess cavity*. The incision was closed in layers in the following fashion: the peritoneum and transversalis fascia were closed with a running suture of ___. The opening in the rectus sheath and the internal oblique was then closed with a *running/interrupted* suture of ___. The external oblique was closed with interrupted ___. *Subcutaneous tissues and skin were closed with ___/the wound was packed open with fine mesh gauze*.

A debriefing checklist was completed to share information critical to postoperative care of the patient. The patient tolerated the procedure well and was taken to the postanesthesia care unit in satisfactory condition.

Acknowledgment This chapter was contributed by Lori Soni, M.D. in the previous edition.