Minimizing the perils of appendicitis

Learn how to act quickly when this common and dangerous condition threatens your patient. By Joan Della Rocca, CRNP, CCRN, MSN

The most common acute condition leading to abdominal surgery, appendicitis can be difficult to pinpoint because signs and symptoms can vary widely and may occur with other disorders. In up to 20% of patients who undergo emergency appendectomy, pathologic examination of the tissue shows a normal appendix. Yet misdiagnosed or untreated, appendicitis can be life-threatening.

Appendicitis is an acute inflammation of the appendix, a fingerlike organ attached to the cecum with no known function. Obstruction of the appendix lumen, most commonly by a hard fecal mass (fecalith), typically triggers the inflammation. (See Obstructed, inflamed appendix.) Ulceration of the appendix mucosa has been recently reported as a major cause of the disease.

Ineffective fluid drainage from the appendix lumen lets bacteria invade the appendix wall, triggering infection. If the infected appendix isn’t removed, it can perforate and cause peritonitis. Perforation is most likely within 48 hours after appendicitis develops, with the incidence as high as 80%.

Abdominal pain plus
Abdominal pain is the classic symptom of appendicitis, commonly accompanied by additional signs and symptoms.
• Pain usually begins in the periumbilical region. As inflammation increases, the pain becomes more severe and localized to the right lower quadrant midway between the anterior iliac crest and the umbilicus, an area known as McBurney’s point.
• Rebound tenderness is a sign of acute appendicitis and peritoneal inflammation. If the practitioner applies firm, slow pressure to the abdomen at a point away from the reported pain and quickly releasing it triggers severe pain, rebound tenderness is present.
• Anorexia is common, and up to 60% of patients have nausea and vomiting.
• Temperature elevation of 99°F (37°C) to 100.5°F (38°C) may occur, or temperature may be normal.
• Elevated white blood cell (WBC) count of greater than 10,000/mm³ is common. (Normal, 4,500/mm³ to 10,000/mm³)

Signs and symptoms of perforation include a WBC count of 20,000/mm³ or greater; a tense, rigid abdomen; and a temperature of 102°F (39°C) or higher. Older adults with altered pain perception delay seeking treatment and are more likely to develop perforation.
Reaching a tentative diagnosis

Various disorders can cause signs and symptoms similar to those of appendicitis, especially in women. Acute gastroenteritis, pyelonephritis, ectopic pregnancy, and pelvic inflammatory disease are a few examples. No one diagnostic test can confirm appendicitis, but lab results, imaging studies, the patient history, and physical examination findings can help the practitioner rule out other conditions.

The abdominal computed tomography scan has become the most important imaging study for detecting appendicitis. Other imaging studies, such as ultrasound and an X-ray of the kidneys, ureters, and bladder, may reveal an inflamed appendix or another abnormality. Even if diagnostic studies don’t clearly point to appendicitis, anyone with highly suspicious signs and symptoms should be evaluated by a surgeon because missing this diagnosis can be deadly.

A patient with suspected appendicitis needs to be hospitalized and closely monitored. In anticipation of surgery, he should be kept N.P.O. and have an intravenous (I.V.) line inserted for fluid administration. He may receive opioids for pain and I.V. antibiotics to reduce the risk of postoperative wound infection or to treat sepsis, if indicated. If the surgeon believes the appendix is inflamed, he’ll remove it laparoscopically or via laparotomy to prevent perforation. (See Two appendectomy techniques.)

Nursing care before and after

Care for a patient with appendicitis as you would any surgical patient, with these considerations.

Preoperative care. Your patient may have extreme discomfort, so explain why these measures are necessary to encourage his cooperation.
- Teach him about using a pain intensity rating scale and encourage him to request medication before the pain becomes too intense. Also discuss nonpharmacologic pain management techniques such as repositioning and avoiding quick movements. Administer opioids as ordered, and monitor their effectiveness.
- Monitor his vital signs with special attention to signs of perforation, such as a temperature greater than 102°F (39°C).
- Administer I.V. fluids and antibiotics as ordered.
- Avoid applying heat to the abdomen or administering cathartic medications or enemas, which could trigger perforation.
- Teach your patient what the surgery entails and what to expect postoperatively, such as early ambulation, coughing and deep breathing with wound splinting, and the use of incentive spirometry.

Postoperative care. Assess your patient for complications and help him prepare for discharge.
- Monitor his vital signs, pulse oximetry readings, and lab results, especially his WBC count.
- Assess his incision site for signs of infection, such as erythema and discharge, and make sure it’s intact with no evidence of bleeding or dehiscence.
- Perform a head-to-toe physical assessment, with a special focus on the abdomen, including bowel sounds and the presence of distension. Ask whether he’s been passing flatus or had a bowel movement. Document your findings.
- Assess him for nausea or vomiting and administer antiemetics as ordered.
- Continue assessing his pain, using the same pain scale you used preoperatively, and administer pain medications as ordered.
- Help him walk as ordered to prevent deep vein thrombosis and other complications.
- Teach him to splint his wound and encourage him to cough and deep-breathe while sitting on the side of the bed.
- While he’s in bed, place him in high Fowler’s position to encourage full lung expansion. Encourage him to use the incentive spirometer every hour to expand his lungs and prevent atelectasis.

When your patient’s bowel function returns, he can gradually start taking food and fluids by mouth. A patient who’s had an uncomplicated laparoscopy to remove a nonperforated appendix is usually discharged from the hospital within 24 hours.

Special care for perforation and abscess. Your
patient’s recovery will be much longer and his nursing care more complex if his condition included an abscess or a perforated appendix. If he had an abscess, his wound may be closed with a drain in place. In the case of perforation, the wound may be left unsutured and packed. He also may have a nasogastric tube in place to decompress his stomach and prevent distension. Follow facility policies and procedures to keep it patent, and suction as ordered. Administer I.V. antibiotics as ordered to treat infection.

Preparing for discharge
Discharge teaching for a patient who’s undergone appendectomy should include the following:
• Teach him to observe his wound for any signs of infection, such as redness, warmth, and drainage, and to take his temperature daily. Tell him to immediately report any abnormalities to the surgeon.
• Advise him to resume eating normally as tolerated and to include protein-rich foods to promote healing.
• Warn him not to lift anything that weighs more than 5 pounds (2.25 kg).
• Provide information about his discharge medications, including instructions on when to take them and possible adverse reactions to watch for.
• Give him the surgeon’s phone number and instruct him to make a follow-up appointment 2 weeks from his discharge date. Encourage him to ask questions, and give him written instructions he can refer to at home.

REFERENCES

RESOURCES

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