

PPIC® Closed Claim Case Review

Ventral Hernia Repair Surgical Complication

by Deborah Price, RN, MSN, PhD, Director, Risk Services, PPIC®

Abstract

There are approximately 100,000 ventral hernia repairs per year in the U.S., resulting in a reported 10-50% rate of recurrence. Laparoscopic repair is the most common approach, with an estimated 2% conversion to an open procedure. Comorbidities may preclude surgical intervention of non-symptomatic ventral hernia. The occurrence of bowel perforation, peritonitis, and death following ventral hernia repair may lead to allegations of substandard care.

Overview

The case involved a 55-year-old man with multiple comorbidities who underwent open repair of several non-symptomatic ventral hernias. The patient's primary care physician referred him to the surgeon for evaluation secondary to progressive enlargement of an umbilical hernia. This same surgeon had repaired a previous umbilical hernia in the patient. Two years before the surgery in question, the patient had undergone an emergency splenectomy after falling from a ladder. The patient's recovery had been complicated by pulmonary emboli, rib fractures, and ARDS; treatment had included a two-month induced coma. Documented medical history also included chronic inflammatory bowel disease, atrial fibrillation, hypertension, diverticulosis, and ulcerative colitis. The patient had taken oral Prednisone and Azulfidine for 20 years.

The surgeon recorded a large amount of diastasis recti above the umbilicus with two defects 3 cm to 3.5 cm in size. The abdomen was non-tender and non-distended with normal bowel sounds. The surgeon recommended surgical repair and instructed the patient to discontinue warfarin 3 days before the scheduled outpatient surgery. The primary care physician cleared the patient for surgery following a cardiology work-up.

During surgery, the surgeon found two large hernias directly above the umbilicus, and identified four other hernias approximately 1 to 1.5 cm in size. He described a "swiss cheese" sort of appearance. The surgeon tried to close all hernias with clean fascia, but used mesh on some sections due to tension of flesh.

The morning after surgery, the patient's wife called the hospital to report that he had been sick all night. When the surgeon returned her call, she told him that her husband was in pain, nauseated, vomiting, and feverish. She also reported a foul-smelling brown drainage from the surgical site. The surgeon, who did not see the patient, thought the drainage was blood. He ordered suppositories for nausea and instructed the patient to continue the medications.

The suppositories proved ineffective and the patient's nausea, drainage, and fever continued. Later that afternoon his wife again called the surgeon, who did not return that call. She then took the patient to the emergency room. The ER physician documented a history of nausea, vomiting, pain, increasing drainage, and a distended and firm abdomen with foul-smelling wound discharge. Redness was present around the wound. White count was elevated with a left shift. CT showed free abdominal air. The ER physician spoke with the surgeon, who said he would see the patient the next morning. The patient was admitted to the hospital for observation.

Mid-morning of the next day, the surgeon examined the patient, documenting brown fluid draining from the midline. He removed 5 of 20 staples, copiously irrigating the wound with a combination of sterile saline and hydrogen peroxide. He then ordered IV antibiotics, a clear liquid diet, and 8-hour wound care.

The following day the surgeon documented what he felt was an inappropriate amount of drainage. He obtained consent to re-explore the wound in order to rule out an occult bowel injury. During surgery, he noted fecal contents. The surgical report documented a 1 cm defect in the wall of the small bowel; the surgeon noted "it must be related to the surgery, and that area was repaired." The wounds were cleaned and irrigated. Closing them proved difficult; the surgeon described the fascia as essentially "swiss cheese." He applied a sterile dressing over the anterior abdominal wall.

During the surgeon's placement of a central venous line to start postoperative hyper-alimentation, the patient's heart rate dropped from 110-120 to 30-40. A code was called, but the hospital internist, ER physician, and surgeon were unsuccessful in their efforts to revive the patient. At autopsy, the medical examiner concluded the cause of death to be "perforation of small intestine due to surgical repair of ventral incisional hernia. The incisional hernia is a direct consequence of a splenectomy approximately 2 years prior to death for therapy of blunt force injury of the abdomen resulting from a fall from a ladder."



Expert Opinions

1. An asymptomatic ventral hernia repair in this patient was not indicated in the face of such extreme risk. Unless there is considerable documentation of problems with the ventral hernia, e.g. erosion of the skin and drainage of peritoneal fluid, infected deep tissues, or infected implanted mesh from prior procedures, ventral hernias can be left alone in high risk patients.
2. Medical/surgical comorbidities: following a splenectomy, the patient's medical problem risk profile had been profoundly altered. Significant medical risk factors included: (a) recent respiratory failure (2 months on ventilator post splenectomy), (b) atrial fibrillation with right atrium clot and (c) history of pulmonary embolism with respiratory failure and near-death (d) ulcerative colitis
3. The long history of inflammatory bowel disease suggested that abdominal surgery would carry high risk. An inflamed bowel is difficult to operate on and heals poorly. A 20-year course of oral Prednisone and Azulfidine suppresses wound healing and the immune system, and it increases risk of infection. Adhesions are common in abdomens with multiple incisions. Opening the abdomen to fix the incisional hernia carried an additional risk of >25% versus a heart operation or a hip replacement. Bowel injury is common in recurring abdominal surgery. Care is required to not miss injured bowel.

Discussion

Negligence allegations included:

- Negligent selection of an asymptomatic patient as a surgical candidate
- Negligent perforation of the small bowel
- Failure to see patient first post-operative day
- Failure to timely diagnose bowel perforation
- Failure to timely treat bowel perforation

Risk Prevention Strategies

The following recommendations are suggested for surgeons:

- Take extreme care to assess the surgical cavity prior to closure of the incision.
- It is essential to carefully consider comorbidities prior to surgical intervention.
- Outpatient surgical procedures may not be appropriate for high-risk patients.
- Immediately see patients with symptoms of an adverse surgical event.
- Checklists and standard protocols are valuable in preventing adverse events.

Summary

Plaintiff and defense experts raised numerous criticisms and questions regarding the patient selection through follow-up care. The medical examiner's conclusion did not explain why the patient arrested, but it officially memorialized that the perforation during surgery set in motion the complications that resulted in the patient's death. This case was resolved during mediation for \$950,000.

References

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