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3 Complications

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INTRODUCTION

Complications are a frequent consequence of surgery. A clear understanding of surgical principles and meticulous technique are essential but are not always sufficient to prevent complications, particularly when normal anatomical relationships have been altered by the presence of a malignancy. Furthermore, some complications are beyond the control of the surgeon. The judicious surgeon must always be cognizant of the potential complications associated with each step of a particular surgical procedure and actively work to minimize these risks. The prompt detection and management of perioperative complications is of paramount importance in order to minimize adverse sequelae.

For this chapter, we have chosen to address what we believe are the most relevant issues in regard to complications associated with gynecologic surgery. Urinary tract complications have not been included in this section since they are discussed in Chapter 30.

BOWEL COMPLICATIONS

Preoperative bowel preparation was considered an essential component in preventing complications associated with colorectal surgery for over a century. However, over the past several years, a series of studies have challenged this belief. A 2011 Cochrane review examining this issue concluded, based on over 5800 subjects participating in 18 trials, that there was no benefit conferred by preoperative bowel preparation. Mechanical bowel preparation versus rectal enema was also examined with no differences detected. In fact, a trend toward increased postoperative infectious complications with bowel preparation was discovered. It has been suggested that this association may be due to leakage of liquid stool from inadequately prepped bowel or from local structural and inflammatory changes of

the bowel wall that can result from a mechanical bowel prep. If bulky stool is encountered intraoperatively, it should be gently milked away from the area of resection or washed out from the anus to facilitate reanastomosis. Intravenous antibiotics with both aerobic and anaerobic coverage, such as a second-generation cephalosporin with metronidazole or amoxicillin/clavulanic acid, should be administered preoperatively. Ciprofloxicin or clindamycin may be substituted for the cephalosporin in penicillin-allergic cases. Preoperative use of oral antibiotics has been suggested by multiple studies to reduce the risk of surgical site infection following colectomy.

Historically, injury to the colon, particularly with gross contamination of the peritoneal cavity, was managed by colostomy formation. Recent prospective randomized studies examining the management of traumatic colon injuries have demonstrated either equal or improved outcomes with primary repair rather than colostomy. Though the risk for intra-abdominal sepsis is increased with multiple associated abdominal injuries, massive blood transfusion, and severe peritoneal contamination, the method of management of the colon injury does not affect the incidence of sepsis. In addition, the repair technique, hand-sewn versus stapled, also does not influence the complication rate. In the face of a colon injury with peritoneal contamination, broad-spectrum antibiotic prophylaxis should be continued for 24 hours.

Intraoperative bowel injuries are most likely to occur during entry into the abdominal cavity and during lysis of adhesions. If entering the abdomen through an old scar, the risk of injury is reduced if entry is gained just beyond the limit of the old scar. Sharp entry is preferred over use of an electrocoagulation device due to the clean, defined nature of a sharp injury. Thermal injuries are more difficult to detect and evaluate due to the potential for delayed tissue necrosis up to a few centimeters beyond the point of visible damage. When a significant thermal injury to the bowel occurs, a wide resection up to 3 to 5 cm from the edges of the injury with primary reanastomosis is recommended. Thin filmy intra-abdominal adhesions can be safely lysed using blunt dissection and the electrocautery devise. Thicker, less yielding adhesions require sharp dissection to avoid injury to the bowel.

Following difficult bowel dissections, direct visual inspection of all bowel surfaces is important. Of note, the risk of compromise of the distal sigmoid colon is increased in cases of ovarian cancer with extensive pelvic disease and with

endometriosis where the cul-de-sac may be obliterated. Injury in this area may be particularly difficult to visualize. When concern is raised, a large-gauge foley catheter should be inserted into the rectum and the balloon inflated. With the pelvis filled with saline and the proximal sigmoid occluded with gentle pressure, air is injected into the foley to inflate the bowel. Air will bubble to the surface if a laceration is present.

Small bowel lacerations involving less than half of the circumference of the bowel are repaired without resection. A single layer of full thickness delayed absorbable 3-0 sutures are placed 3 mm apart. The closure is oriented perpendicular to the path of the bowel to limit narrowing of the lumen. A second seromuscular layer imbricating the first layer is sometimes placed, provided that it does not compromise the bowel lumen. The closure should be watertight and is tested by gently milking bowel contents and intraluminal gas past the repair site. Pinching the bowel lumen at the anastomotic site should confirm a luminal diameter of at least 1 cm. If a larger laceration occurs, the edges are devascularized, or multiple small enterotomies involve a short segment of bowel, resection of the injured area with primary reanastomosis is warranted.

Repair of large bowel lacerations is similar to that for the small bowel with a few exceptions. Lacerations of up to 30% of the circumference of the bowel are closed primarily with larger injuries requiring bowel resection. Two-layer closures as described above are the standard. There is generally no concern regarding narrowing of the large bowel lumen by repair.

Routine use of a nasogastric tube following extensive gynecologic procedures or bowel resection has recently been re-examined. Nasogastric tube suctioning does not reduce the duration of ileus and may actually delay return of normal bowel function. Following bowel resection, the presence of a tube did not affect the incidence of anastomotic leakage or incisional hernia development. In addition to the substantial discomfort associated with nasogastric tubes, they are a major risk factor for postoperative pulmonary complications. Two recent meta-analyses suggested that only up to 10% of patients undergoing bowel resection and managed without nasogastric decompression would warrant insertion later in their postoperative course.

Several studies have recently evaluated the feasibility of early feeding of patients who have undergone bowel resection and other types of intraabdominal surgery.