

CONSTANTINE T. FRANTZIDES, LUIS E. LAGUNA, AND
MARK A. CARLSON

Minimally Invasive Transverse Colectomy

Controlled data in the first half of the 2000s demonstrated that the oncologic outcome of minimally invasive colon resection for adenocarcinoma in tertiary centers was not inferior to that of open resection. In fact, in some publications there was the suggestion that oncologic outcome was better with the laparoscopic approach. Prior to the publication of this data, a growing body of evidence indicated that patients who had a minimally invasive colon resection had a better short-term outcome (in terms of pain, wound complications, recovery time, etc.) than patients with the equivalent open operation. So for the most part, the data on colon resection for adenocarcinoma from tertiary centers suggest equivalency or even superiority of the minimally invasive approach over the open approach.

Whether performed for a malignant or a benign indication, transverse colectomy is a relatively uncommon procedure compared to right or left colon resection. Because a transverse colectomy involves mobilization of both the hepatic and splenic flexures, the operative time and difficulty can be greater than for a one-sided resection. In large series of minimally invasive colectomy for both benign and malignant disease, a transverse resection typically accounts for up to 10% of the cases. Thus, transverse colectomy continues to be performed with modest frequency in laparoscopic colon surgery and so belongs in the armamentarium of the laparoscopic surgeon.

OPERATIVE INDICATIONS

In performing a colonic resection for a benign diagnosis, the operator typically resects just the segment of colon that is involved with the disease. There is the theoretical concern that a resection demarcated solely by the extent of benign disease would result in some anastomoses being constructed in a vascular “watershed” region (i.e., an area of the colon that lies between major blood vessels; see Fig. 14-1) and that a colocolostomy in such a region would have an increased risk for ischemia and dehiscence. Currently, it is generally acceptable to construct a colocolostomy during an elective segmental colon resection for a benign diagnosis, the margins of which are based on pathologic extent only. For reference, a transverse colectomy would require an anastomosis between the hepatic and splenic flexures (both hypothetical watershed regions); if this anastomosis can be performed without tension and there are no other extenuating circumstances, then we have no reservations about proceeding with this operation.

The indication for a transverse colectomy for colonic adenocarcinoma is somewhat more complicated. Traditional surgical practice prescribes that the longitudinal extent of resection for colon cancer depends on the location of the tumor with respect to the arterial blood supply (Fig. 14-1). The intent of this strategy is to resect the draining nodal basis en bloc with the tumor, so that at least staging and prognostic information may be obtained. If a tumor resides within a vascular watershed region (e.g., a hepatic flexure lesion), then a resection encompassing the major arteries proximal and distal to the lesion (i.e., an extended right hemicolectomy) would be indicated. For a tumor that overrides the middle colic artery, a transverse colectomy would be ideal. A difficulty may arise in determining to which artery a given tumor has the closest proximity; in cases in which this difficulty arises (such as in the proximal or distal transverse colon), it may be more prudent to perform an extended resection that encompasses both the proximal and distal arteries. For further discussion on the extent of resection for colon cancer, please see Chapter 15, on minimally invasive left colon resection.

The rationale for a transverse colectomy is to preserve colonic length; otherwise, all transverse lesions might as easily be treated with an extended right or subtotal colectomy. If the surgeon finds, however, that the right colonic limb salvaged by a transverse colectomy is unreasonably short (say, 10 cm), then it may be more prudent to perform an extended right hemicolectomy with a transverse ileocolostomy. The ileum usually is easier to mobilize than the right colon, and the former perhaps has the theoretical advantage of increased vascularization over the colon. Regardless of these hypothetical concerns, the extent of resection is a relative choice made by the operating surgeon during the procedure, and clinical guidelines are intended to help the surgeon make this decision.

PREOPERATIVE EVALUATION

The goals of preoperative evaluation for the patient undergoing a colon resection may be organized as follows: (1) obtain a diagnosis for the disease being resected; (2) determine whether the proposed procedure is appropriate; (3) define the segment of colon requiring resection; (4) determine whether there is local involvement of the disease with contiguous organs; (5) if the diagnosis is cancer, determine the clinical stage and whether a concomitant procedure will be necessary; and (6) ensure that the patient will tolerate the proposed procedure.