Staging Laparoscopy Promotes Increased Utilization of Postoperative Therapy for Unresectable Intra-Abdominal Malignancies

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Staging laparoscopy avoids unnecessary laparotomies in patients with unresectable intra-abdominal malignancies. However, the postoperative oncologic treatment of these patients has not been documented. This study compares rates and timing of postoperative chemotherapy (ChT) and/or radiation therapy (XRT) in patients with unresectable intra-abdominal malignancies initially evaluated by staging laparoscopy (SL) or exploratory laparotomy (EL). The records of patients surgically evaluated for esophageal, gastric, hepatobiliary, and pancreatic cancers or abdominal lymphoma were retrospectively reviewed. Data gathered included type of exploration (SL or EL), resectability, whether postoperative cancer treatment was given (ChT, XRT, or both), and the time from surgery to the beginning of such treatment. This study includes only patients with unresectable malignancies. Twenty-one patients underwent SL and 58 EL. Sixteen of the SL patients (76%) and 25 of the EL patients (43%) received postoperative cancer treatment (P = 0.009). The median number of days from surgery to postoperative cancer treatment was 13 days (range 5 to 41 days) for the SL group and 35 days (range 16 to 89 days) for the EL group (P = 0.0004). We conclude that patients with unresectable intra-abdominal malignancies discovered by SL are more likely to receive postoperative ChT and/or XRT than patients surgically evaluated by EL. Further studies to determine whether this better utilization of postoperative treatment results in better outcomes in these patients are needed. (J GASTROINTEST SURG 2000;4:542-546.)

KEY WORDS: Staging laparoscopy, exploratory laparotomy, esophageal cancer, gastric cancer, pancreatic cancer, hepatobiliary cancer, chemotherapy, radiation therapy

Patients with unresectable intra-abdominal malignancies have short life expectancies. Alternative therapies such as chemotherapy (ChT) and radiation therapy (XRT) are usually recommended in good-risk patients to possibly extend life expectancy and palliate symptoms. Therefore these patients are best served by avoiding extensive intra-abdominal procedures in order to minimize recovery periods without sacrificing good palliation.

Preoperative staging includes a complete history, physical examination, chest radiographs, and CT scans in most patients. Other modalities such as endoscopy, endoscopic ultrasonography, and angiography can be used on a selective basis. In addition to these modalities, staging laparoscopy (SL) has also been advocated to increase resectability rates in a variety of intra-abdominal malignancies including esophageal, gastric, hepatobiliary, and pancreatic cancers. Staging laparoscopy can not only increase resectability rates, but can also decrease the length of hospital stay, select patients for neoadjuvant protocols, and some palliative procedures can be accomplished laparoscopically.

Nevertheless, opponents of SL argue that this procedure only identifies a minority of unresectable patients thought to be resectable by conventional means. In addition, for some malignancies, such as gastric cancer, palliative resections are warranted, and for others, such as pancreatic cancer, some claim that operative palliation is superior to any nonoperative method, thereby always justifying open exploration.

Although these arguments may have merit in individual cases, the fact remains that for most patients...
with unresectable malignancies, ChT and/or XRT will be the primary anticancer treatments offered. Therefore promoting such postoperative therapy would, at least theoretically, benefit this group of patients. We asked the question: Is there a difference in the postoperative oncologic treatment of patients found to be unresectable by SL vs. EL.

MATERIAL AND METHODS

Patient Data

The records of patients surgically treated for esophageal, gastric, hepatobiliary, and pancreatic cancers and abdominal lymphoma between January 1, 1996, and June 30, 1998, were retrospectively reviewed. Only cases that were unresectable were further reviewed for the following information: exploration which determined unresectability (EL or SL), whether any palliative procedures were done, whether postoperative cancer treatment was given (ChT, XRT or both), and the time from surgery to the beginning of such treatment. All patients who underwent EL or SL were thought by the operating surgeon to be resectable prior to surgery.

Staging Laparoscopy

Staging laparoscopy was done by entering the abdomen through an infraumbilical approach, using either the Veress needle or Hasson cannula technique, as previously described. Briefly, the abdomen was insufflated with CO₂ gas to a pressure of 15 mm Hg. A 30-degree scope was used. The abdomen was inspected for signs of carcinomatosis, ascites, or liver metastasis. Additional ports were placed as needed, usually only one but occasionally two. Biopsies were obtained of all suspicious lesions to confirm the presence of malignancy. The lesser omentum was divided to expose and inspect the celiac axis, whereas the hepatoduodenal ligament and the root of the mesentery were inspected and suspicious lymph nodes biopsied. The primary tumor was assessed to determine the extent of direct extension into the adjacent organs, and whether this precluded resection. No extensive laparoscopic dissections, such as Kocher maneuvers, were attempted. Most staging laparoscopies were completed within 15 minutes, but none took longer than 30 minutes.

Exploratory Laparotomy

Exploratory laparotomy was done through either an upper midline incision or unilateral or bilateral subcostal incisions as per surgeon preference. Patients with esophageal or gastroesophageal junction carcinomas underwent surgical exploration through a single incision, a left thoracoabdominal incision, or a two-incision abdominal and right thoracic (Ivor-Lewis) approach. Determination of resectability was done in the customary manner for each malignancy.

Statistical Analysis

All data were analyzed using the True Epistat statistical computer program. Nominal data were analyzed using chi-square analysis. Time to treatment data were initially analyzed for normality using the Wilks-Shapiro test and found not to fit a normal distribution pattern. These data were subsequently analyzed nonparametrically using the Mann-Whitney U test. A p value of 0.05 was considered significant.

RESULTS

Table I presents the distribution of cancer types between the EL and SL groups. The preponderance of biliopancreatic malignancies in the EL group reflects the difficulty in establishing unresectability due to direct vascular invasion by bile duct or pancreatic cancers using SL. A total of 58 patients were evaluated by EL and 21 by SL. Nineteen patients were initially evaluated by SL, but were converted to EL because of a false negative SL (usually due to unappreciated vascular invasion). These patients were analyzed in the EL group.

Sixteen of the SL patients (76.2%) and 25 of the EL patients (43.1%) received postoperative anticancer treatment with ChT, XRT, or both (P = 0.009; Fig. 1). The median number of days from the time of the operation to the commencement of this therapy was 13 days (range 5 to 41 days) in the SL group and 35 days (range 16 to 89 days) in the EL group (P = 0.0004; Fig. 2).

Table II shows the distribution of the palliative procedures performed in the EL and SL patients.

<table>
<thead>
<tr>
<th>Cancer Type</th>
<th>Exploratory Laparotomy</th>
<th>Staging Laparoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Esophageal cancer</td>
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<td>2</td>
</tr>
<tr>
<td>Gastric cancer</td>
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<td>3</td>
</tr>
<tr>
<td>Biliopancreatic cancers</td>
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<td>7</td>
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<tr>
<td>Duodenal/ampullary cancers</td>
<td>2</td>
<td>0</td>
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<tr>
<td>Hepatic cancers</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Abdominal lymphoma</td>
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