

Staging Laparoscopy in Stomach Cancer

Mide Kanserinde Evreleme Laparoskopisi

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Dear Colleagues,

In this issue, I will talk about a method that surgeons dealing with gastric cancer (GC) have to resort to in order to detect the spread to the peritoneum, which they see as a problem despite advances in technology and imaging methods: Diagnostic laparoscopy for staging in GC.

GC is an important health problem worldwide and the only curative treatment is surgery. It has been reported that the morbidity can reach 39% in GC surgery, and it is considered a high-risk surgery in Europe and other Western countries. Therefore, surgical planning and postoperative follow-up are of great importance (1) The right surgical intervention for the right patient and the planning of neoadjuvant chemotherapy (NAC) for the necessary patients play an important role in determining the patient's survival. For which patients the diagnostic laparoscopy will be applied in the staging used for this purpose and the timing of the surgery planning are still controversial.

Staging laparoscopy has been included in the diagnostic methods in advanced GC for years. Some treatment guidelines even recommend doing it routinely before surgery. When we look at its historical development, we see that there are different opinions (1,2). Some surgeons state that there is no need for laparoscopy since a significant portion of the patients will require palliative surgery (3). The majority of the surgeons states that it is beneficial. Diagnostic laparoscopy in GC allows imaging of the peritoneum and organs. Peritoneal spread, ascites, mesenteric or omental spread can be diagnosed with computed tomography, but the diagnostic accuracy is low (4). The rate of diagnosis can be increased with laparoscopy. It also allows taking samples for cytological examination. Detection of peritoneal spread changes the surgical approach because it means a jump in the phase of the disease. These patients are considered as having stage 4 disease and if there are no signs of bleeding or obstruction, systemic chemotherapy is given priority.

It was shown that peritoneal spread was more common in tumors in the esophagogastric region, in those involving the entire stomach, in those with lymphadenopathy (LAP) on computed tomography, in poorly differentiated adenocarcinomas, and in tumors of T3-T4 stage. The rate of peritoneal involvement was found to be statistically significantly higher in patients with esophagogastric or whole stomach involvement and in patients with LAP detected by using imaging methods (2). In another study, a significant difference was found in tumors larger than 4 cm (5).

Although laparoscopy is a more invasive method than some imaging methods, it has advantages such as detection of 5 mm or smaller metastases that cannot be demonstrated by other methods, evaluation of peritoneal surfaces, liver surface and lymph nodes, and taking samples for peritoneal cytology in terms of micrometastases. Our experience in these patients has shown that although they are defined as having locally advanced disease in imaging methods, peritoneal involvement may not be detected in some patients (6). As a matter of fact, peritoneal metastasis is detected in approximately 20-30% of patients with GC, although there is no finding on imaging. In a study conducted by the Memorial Sloan Kettering Cancer Center, 657 patients with potentially resectable gastric adenocarcinoma underwent laparoscopic staging over a 10-year period and metastatic disease was detected in 31% of the patients (7,8). The risk of occult peritoneal metastasis is higher especially in surgical stage (T4) tumors of advanced gastrointestinal system cancers and in patients with the appearance of linitis plastica (9). Staging laparoscopy to be performed in these patients will increase morbidity in a significant part of the patients and will prevent radical surgical interventions that will not contribute to survival. In a study evaluating the diagnostic contribution of additional PET/CT and diagnostic laparoscopy in patients with locally advanced disease (T3-4 or N+) detected by standard staging methods, endoscopic ultrasound (EUS) and high-resolution CT, and without distant

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metastasis findings; distant metastases were detected by using PET/CT in 10% of patients, and peritoneal metastases were detected in 19% by using laparoscopy (10). Diagnostic laparoscopy can be used for accurate staging and treatment in patients who are thought to have T2 or more advanced lesions with EUS, who do not have evidence of stage 4 disease, who do not need palliative gastrectomy due to local symptoms, and who are planned for neoadjuvant treatment. It is helpful in choosing the most appropriate treatment.

Patient selection for laparoscopy is still controversial. According to the results of the REGATTA trial, palliative gastrectomy should not be performed in patients with peritoneal invasion. Therefore, staging laparoscopy is recommended to detect peritoneal spread during laparoscopy, to avoid non-therapeutic laparotomy, and to shorten the time to initiation of chemotherapy (11).

In a study conducted in Japan (JCOG0405), staging laparoscopy was made to detect occult peritoneal involvement. If LAP and paraaortic lymph nodes were detected in the patients, extended surgery was performed after NAC (12). Peritoneal involvement was reported to be positive in 21% of this patient group. In these patients, restaging laparoscopy was performed to decide on surgery after chemotherapy. In another study in Japan, the false negative rate was reported to be 10%. This rate varied between 0-17% in different publications (2). In order to reduce this rate, careful exploration was recommended. In the publications recommending repetitive laparoscopy after chemotherapy applied after the first staging laparoscopy, positivity was detected in 12% of the patients, and there were some who stated that repeated staging laparoscopy was more beneficial in poorly differentiated tumors and linitis plastica (13). It was also stated that the survival of these patients was not good, although they responded well to neoadjuvant treatment.

In practice, the entire abdomen and the bursa omentalis should be explored. A good exploration will reduce false negative rates. When the results of the Japanese groups and Western countries are compared in the studies, it is seen that the false-negative rates are lower in Western countries, and it is stated that the reason for this is indications for laparoscopy (2).

Laparoscopy is also used for the evaluation of tumor resectability and is superior to other radiological methods in this respect (4). The most important problem is to determine when laparoscopic staging is necessary and to decide on its timing. There is no clear consensus on whether it should be performed immediately before surgery or as a separate intervention. However, in patients with more advanced disease (T3, T4 or linitis plastica), laparoscopy is required before laparotomy to rule out occult intraperitoneal metastases. In this way, it was reported that it was possible to avoid unnecessary laparotomy in almost 60% of the patients (1,9).

Staging laparoscopy is considered a safe procedure that is performed under general anesthesia in an average of one hour. Intestinal injury was reported in some publications. It was reported that this rate was quite low and around 0.4% (2).

In conclusion, diagnostic laparoscopy for GC staging is useful in detecting occult metastases. Cytological testing of peritoneal fluid allows identification of occult carcinoma. Chemotherapy provides a statistically significant improvement in survival in patients with positive cytological tests. If there is no bleeding or

obstruction in patients with positive peritoneal cytology, the role of surgery is unclear and chemotherapy should be prioritized. The patient group to be selected should include patients with T3 and/or N+ tumors detected in preoperative imaging. In this way, it will be possible to detect occult metastatic disease. The timing of laparoscopy is slightly different from the West in our country, considering the density of our hospitals. Patients should be planned before curative surgery and surgery should be performed if appropriate.

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