The impact of laparoscopy on cancer management

Although the ultimate challenge for the reduction in cancer deaths is to prevent the neoplastic cell from developing and replicating, technical innovations have impacted both the timing of identification and the stage of cancer when discovered. Newer modalities involving alternatives to traditional radiologic imaging, introduction of serum markers, and use of combinations of technology are applied to management of our cancer patients with ever-increasing expectations of facilitating the earliest possible recognition of the cancerous process.

The technology juggernaut has focused on cancer management as well as diagnosis. The readership of *Surgical Endoscopy: Ultrasound and Interventional Techniques* is familiar with these monumental contributions since the advent of flexible endoscopy and especially colonoscopy over 30 years ago. The advantages of flexible endoscopic evaluation of patients with cancer rest not only on interpretive applications, but more importantly on our ability to biopsy, ablate, and resect the neoplastic tissue.

The next challenge for us as surgical endoscopists as we enter the first decade of the twenty-first century is to evaluate laparoscopy in a scientific manner as both a diagnostic and therapeutic instrument in cancer care. The creation of meaningful clinical trials will answer questions relating to the role of the laparoscope in preoperative assessment of abdominal tumors, the utility of conventional and “micro-laparoscopy” in providing a conduit for energy sources to ablate both primary and metastatic cancer, the facility of laparoscopy in allowing palliative bypass procedures, and the ultimate use of the endoscopic method for curative resection of malignant tissue.

During the last several years, studies have supported the utilization of preoperative laparoscopic assessment in patients diagnosed with esophageal, gastric, pancreatic, and hepatobiliary malignancy [1, 4, 7]. The goal of these studies is to identify subsets of patients who might benefit from nonextirpative approaches as offered by newer stent technology as well as chemoradiation. An additional goal has been to offer a staging technique that allows us to select patients who might benefit from neoadjuvant therapy prior to tumor excision. These staging maneuvers are based on our ability to retrieve malignant cells and to assess biopsy and cytologic specimens. Our interpretive capability has also been heightened by incorporating a “divining rod”—laparoscopic facilitated abdominal ultrasound.

As a therapeutic tool for cancer management, the laparoscope has garnered particular interest in the treatment of

cancer of the colon and rectum. Adequate margin of resection, nodal dissection, and anastomotic creation have been reported [3, 5]. Besides technical considerations, the extent of patient-related benefits is unclear. Clinical trials are currently ongoing, which are designed to answer the ultimate questions relating to cancer-free survival following the laparoscopic approach [6]. It remains important to consider traditional, open colonic resection as the “gold standard” until these issues are fully answered.

Since the likelihood of converting the laparoscopic approach to an open operation remains a factor, the consequences of conversion relating to long-term outcome of the cancer patient must be assessed in a rational and scientific manner. Studies, such as those conducted by the Clinical Outcomes of Surgical Therapy (COST) group [2], are aimed at determining the ultimate affect of the laparoscopic-assisted colectomy on the fate of the cancer patient. A retrospective assessment of 372 patients with colorectal cancer treated by laparoscopic-assisted colectomy reports that the development of port-site recurrence might not have as dire a consequence as formerly considered. Other important questions will be answered by a prospective randomization of 1200 patients in an ongoing National Cancer Institute-sponsored trial [6]. While randomized trials are being concluded, it is important for all of us to currently assess the literature relevant to laparoscopy and cancer management. Issues relating to port-site recurrence, altered immune responses, chemoprotection, effects of carbon dioxide, and metabolic changes need to be constantly debated and analyzed. During this year we will begin to assess these and other issues in the hope to reach consensus and to make decisions regarding important clinical and laboratory questions that should be answered. The pages of *Surgical Endoscopy: Ultrasound and Interventional Techniques* can provide such a forum, and we must challenge ourselves to participate in this important and ongoing dialogue.

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