The Medical Minute: Advances in the treatment of rectal cancer

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Cancers of the rectum are, unfortunately, a common disease, and along with colon cancer represent the second most common cause of cancer death in the United States. It is estimated that there will be about 42,000 new cases of rectal cancer diagnosed in the United States annually, and that 8,500 patients will die from this disease each year.

Historically, the diagnosis of a rectal cancer posed surgical challenges that, until recently, made the disease extremely morbid. Rectal cancers traditionally were associated with a high recurrence rate, their removal enjoined a high surgical complication rate, and patients often required a permanent colostomy or "bag" to cure the disease. The failure of surgery to cure the disease in many cases coupled with the social and financial toll of a permanent bag gave rectal cancer a unique visage compared to other malignancies. However, surgical and adjunct care of rectal cancer has improved over the past several decades, and has made the need for a permanent colostomy the minority rather than the archetypical outcome. Additionally, the laparoscopic approach to rectal cancer is an emerging option for disease treatment in high volume, experienced centers.

Rectal cancer - different than colon cancer

Unlike colon cancer, which is usually approached with surgery alone as initial therapy, rectal cancers are more complex in terms of the preoperative assessment that is required for proper care. The precise location of the rectal cancer is used to assess whether the cancer is truly

in the rectum versus the colon, and also helps guide the choice of surgery. Rectal cancers are then further assessed with transrectal ultrasound to assess the cancer's depth of penetration in the rectal wall, and to look for enlarged lymph nodes around the rectum that may indicate a more advanced stage of disease. Based on this information, some (but not all) rectal cancers should be treated with a combination of radiation therapy and chemotherapy for several weeks prior to surgery in order to sterilize the cancer, reduce its size, and thus lower the chance of recurrence. In some cases, this therapy may prevent the need for a colostomy.

The unique challenges to rectal cancer surgery

Compared to colon cancer, rectal cancer is a significantly more challenging disease to remove surgically. The rectum is located within the pelvis, a tightly confined space which has many other structures in close proximity to the rectum, and which can be inadvertently damaged if great care is not exercised. The process of removing the cancer involves a technique known as total mesorectal excision, which involves a careful dissection of the rectum and its surrounding fat envelope, which contains lymph nodes that may harbor cancer spread and therefore must be removed to lower recurrence rates and to achieve cure. With proper pre-operative assessment, appropriate use of pre-operative chemoradiation therapy, and correct surgical technique, local recurrence rates are routinely less than 10 percent. Additionally, due to improvements in surgical instrumentation, the need for a permanent colostomy has been decreased to 5 to 10 percent.

The option of laparoscopic surgery

Laparoscopic surgery for rectal cancer is one of the most technically demanding gastrointestinal surgeries. There is currently less experience

with this technique as compared to laparoscopic colon cancer resections, and the evidence for rectal cancer outcomes is still accumulating. However, there is emerging evidence that, in experienced hands, laparoscopic rectal cancer surgery offers some short-term benefits such as less postoperative pain, improved cosmetic results, and the potential for a shorter hospital stay, while not compromising survival from the cancer.

Experience matters

Studies have shown that one of the most important factors affecting both rectal cancer cure rates as well as the avoidance of a permanent colostomy is the experience of the surgeon and the hospital. Hospitals with a high volume of rectal cancer patients that can provide a multi-disciplinary approach as part of a commitment to sub-specialization provide the best environment for treatment of this disease. Having a colorectal surgeon involved in the treatment of rectal cancer is also important, since the additional training and experience they bring to the patient's care are invaluable. A colorectal surgeon is uniquely trained to assess the need for pre-operative chemoradiation, safely perform the rectal cancer resection and to avoid a colostomy when appropriate, often while incorporating a minimally invasive approach.

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