Discussion of 2021-1763

BOWEL DYSFUNCTION AFTER LOW ANTERIOR RESECTION FOR COLORECTAL CANCER: A FREQUENT LATE EFFECT OF SURGERY INFREQUENTLY TREATED

**DR SUSAN GALANDIUK** (Louisville, KY): This is an important topic, as function after rectal resection is something that is often overlooked. Patients think that avoiding a colostomy is the ultimate goal after rectal cancer surgery, but they often do not realize that their functionality is not going to be the way it was before surgery. I was not really that surprised at their findings.

 I think that we, as surgeons, have failed our patients to some degree. Too few of us continue to personally follow our own patients long‑term postoperatively, and work with them as they struggle to deal with their low anterior resection syndrome (LARS).

 Dr Cima has already begun answering this, but in terms of the higher number of patients observed with low anterior resection syndrome of which they expected, while mentioning the number of patients who receive neoadjuvant therapy. The type of anastomoses and what effect this had on LARS was not discussed in detail.

 For example, was there a difference with respect to whether patients received a colonic J‑pouch, side‑end anastomosis or end‑to‑end anastomosis, or whether the descending colon was used instead of the sigmoid colon for the proximal part of the colorectal anastomosis? Also, as you mention, your first-line therapy, second-line therapy, and third-line therapy, specifically did not ask patients whether they were using antispasmodics, prokinetic agents, or things like 5‑HT3 receptor antagonists. Could the number of patients who underwent LARS treatment have been higher had you asked about those types of medication? As surgeons, it is our duty to follow our own patients and not abandon them to other specialists, such as medical oncologists or gastroenterologists, who do not really understand the surgical anatomy or know what functionality we have created. And that is true not only for colorectal surgery, but also for complex gastrointestinal surgery.

 The increase in patient‑reported outcome measure research that we are currently seeing will hopefully allow us to ascertain what is important from the patient's perspective. We need to inform our patients before surgery what they are likely to experience and give them the necessary resources to deal with these problems after surgery, as I believe you are currently doing.

**DR BRUCE G WOLFF** (Rochester, MN): In the spirit of full disclosure, Dr Cima and I have been friends and colleagues in the Division of Colon and Rectal Surgery in Rochester for many years. Several years ago, I got a new job with our board, and we have not had combined clinical activities during that time.

 Very often, surgeons focus on the technical aspects of an operation, in this case, the resection and the anastomosis. After a successful procedure and hospital discharge, both the surgeon and the patient assume that it will be business as usual, so to speak.

 Dr Cima and colleagues have done a great service by reminding us that the operation is only a part of the outcome, and some functional results can be debilitating. We became interested in the functional aspects of rectal cancer resection and postoperative chemoradiation therapy in 1994 at Mayo, with a study then published in the *Annals of Surgery* long before the codification of LARS. The study showed nearly identical results and symptoms to the current study.

 Are there any new radiation techniques, such as proton beam, that could minimize the radiation effect? The study also raises the question of the section of bowel resected being specific to LARS. In another study at Mayo from 1992, we compared functional results in patients over the age of 60, half of whom underwent a subtotal colectomy as well as an ileorectostomy, and half underwent right hemicolectomy, thus both groups had removal of the ileocecal valve. Results showed an increase of 1.9 bowel movements per day in the ileorectostomy group and 1 more bowel movement per day in the right hemicolectomy group, compared with preoperative function. There were no specific symptoms of LARS in either group.

 I was intrigued by the finding that low anterior resection done by minimally invasive technique fared better than an open approach. I wonder if the authors might care to speculate on why this is so.

 Patients with the stoma were, of course, excluded, but one wonders how many patients were converted to permanent stoma because of refractory LARS.

 It is clear from this study that we are sadly lacking in patient education, and that we have not yet developed adequate treatment follow‑up for a very common and treatable disorder.

**DR WILLIAM B INABNET, III** (Lexington, KY): What percentage of your patients were enrolled in the enhanced recovery after surgery (ERAS) protocol, and was there synergy from the LARS educational materials that were introduced in the survey?

 It is striking that in the major LARS group, more than 70% underwent temporary diversion, which is much higher than the other 2 groups. Could you comment on the preoperative factors and the intraoperative findings that may have influenced that, and was there something inherent in those patients which contributed to major LARS that led to the need for diversion?

**DR NICHOLAS McKENNA** (Rochester, MN): Regarding Dr Galandiuk’s question, as far as the type of anastomosis and the configuration, we are limited somewhat by the CPT codes available. We do not know what percentage were end‑to‑end vs side‑to‑end vs side‑to‑side. There was a very small percentage of colonic J‑pouches created amongst these patients.

 As far as other medication used, we did survey about 5‑HT3 antagonists and found no patients were on these. Whether that is because of a lack of awareness of these medications or a lack of experience using these medications, it is hard to say. The only 2 medications we found patients were taking were fiber supplements and antidiarrheals, which are both very standard.

 In response to the functional results after surgery you touched on, we are working to improve these now. There is recent data out of Europe, where they began screening by surveying a large group of patients at their cancer surveillance visits. Patients were triaged in a nurse‑led clinic. Most of these treatments are standardized, at least the first-line treatment. We are trying to do that at Mayo now.

 Dr Wolff, as far as alternative radiation treatment, proton beam radiation is not currently being used at Mayo Rochester because of the need to treat the entire field, including the pelvic side walls, regional lymph nodes, and the mesorectum, so radiation oncologists are still using intensity-modulated radiation therapy, not proton beam radiation for rectal cancer at Mayo.

 The former papers from Mayo on bowel function support what you have said, that the rectum is a very important part, as far as postoperative function. As far as minimally invasive surgery being associated with less prevalence of major LARS, it is hard to definitively say why right now. It is probably more robotic if anything. There is some data showing improved urogenital function compared with laparoscopic surgery. With the robot, the surgeon can see the nerves better and has improved visualization of the pelvis. This likely contributes to some benefit in bowel function afterwards. This topic needs further exploration.

 As far as the 49 patients with a current stoma and how many were diverted secondary to recalcitrant LARS ‑ we do not have the exact data on whether LARS was the reason for diversion, but presumably a fair amount was.

 We are currently working to improve resources after surgery.

 Patients were managed on an ERAS protocol. Everyone went on ERAS starting in 2011, so probably around 65% of patients would have been within ERAS in the study. Within our ERAS framework, there is no formal education about LARS besides the standard preoperative counseling in terms of informed consent about postoperative expected function.

 I think now, with our dedicated educational booklet, LARS is talked about more, and it gives the patient something to take home with them, so that if they do not remember every detail discussed, they do have educational material to reference.

 To speak on a diverting loop ileostomy in association with major LARS, we must consider a combination of factors contributing to diversion, and to LARS. We are more apt to divert coloanal anastomosis because of the consequences of a leak, and they are going to have worse LARS because of the anastomotic level. Many patients who receive radiation get diverted, which is also contributing to major LARS. Whether a temporary stoma worsens LARS, that will happen regardless. There have been some studies in people who are diverted, and the longer they remain diverted, the worse their LARS tends to be. There is likely some disuse of the rectum and further deterioration of muscle memory that contributes to major LARS in patients who are diverted.