Risks, Costs High in Diverticulitis Surgery

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Elective colectomy outcomes vary by indication, with unexpectedly high risks and costs for diverticular disease, a national database analysis suggested.

Death, infection, and need for ostomy after the surgery were 67% to 90% more likely for patients with diverticular disease compared with those receiving the same operation for colon cancer after adjustment for other factors, reported Anne Lidor, MD, MPH, of Johns Hopkins Hospital, and colleagues reported online in the Archives of Surgery.

Total hospital charges were more than $6,600 higher with colectomy for diverticular disease, though inflammatory bowel disease (IBD) as an indication came in even higher for cost, complications, and mortality.

"These relatively poor outcomes should be recognized when considering routine elective colectomy after successful non-operative management of acute diverticulitis," the group wrote.

The disproportionate risk was unanticipated but may be because diverticulitis is inflammatory whereas colon cancer is not, the group suggested.

"The underlying concept or assumption seems to be that many patients being offered elective resection for diverticular disease do not really need the operation, since recent data and guidelines would suggest that the course of their disease may not ultimately take them to a middle-of-the-night emergency operation for perforation that routinely involves a stoma and the subsequent operation to reestablish gastrointestinal tract continuity," Kirk Ludwig, MD, and Lauren Kosinski, MD, both of the Medical College of Wisconsin in Milwaukee, noted in an invited critique.

However, they roundly criticized the study because the administrative database "simply does not provide enough detail to allow us to make any of these assumptions or draw these conclusions."

Without knowing the indication for surgery, it could be a case of comparing more demanding and complicated operations for patients with repeated episodes of diverticulitis, perhaps with a perforation or stricture, versus clearly visible anatomy and a pristine field for small sigmoid tumors.

The researchers argued that including only elective surgeries likely cut down on the bias toward worse outcomes from including complicated disease.

Regardless, the results emphasize the need to take such factors into account in healthcare scorecards of surgeons and hospitals rather than lumping all elective

colectomy together, Lidor's group suggested.

Their analysis included 78,879 adults who underwent elective colectomy of the descending colon or subtotal colectomy for diverticular disease (51%), colon cancer (43%), or IBD (6%) as recorded in the Nationwide Inpatient Sample for 2003 to 2009.

The unadjusted rate of mortality was highest for colorectal cancer patients (1.22%), whose comorbidity scores were higher on average. The rate was significantly higher than those in diverticular disease and IBD (0.44% and 0.85%).

Unadjusted postoperative infection rates were lowest with colectomy for diverticular disease as well (10.39% versus 15.40% for IBD and 11.29% for colon cancer, both P<0.001).

But the results changed after adjustment for age, sex, race, year of admission, and comorbid disease.

Adjusted odds ratios for colectomy for diverticular disease versus colon cancer were (all P=0.03 to P<0.001):

- 1.90 for in-hospital mortality
- 1.67 for postoperative infection
- 1.71 for hemorrhage
- 5.33 for acute myocardial infarction as a complication
- 1.96 for shock or sepsis
- 2.61 for renal failure
- 2.49 for pulmonary compromise
- 1.58 for thromboembolic complication
- 1.87 for placement of an ostomy during the operation

Possible explanations are more conversions from laparoscopic to open resection because of scarred and fibrotic tissue from prior episodes of inflammation, and higher prevalence antibiotic-resistant bacteria from multiple courses of antibiotics for recurrent episodes of diverticulitis, the researchers noted.

The administrative data was a limitation that likely underestimated wound infection, they pointed out.

Adjusted outcomes after colectomy for inflammatory bowel disease were worst across the board, with an OR of 6.54 for in-hospital death and 71.42 for ostomy placement compared with colorectal cancer surgery, and higher risk of all postoperative complications.

Total hospital charges after adjustment for comorbidity score and other factors were $6678.78 higher for diverticular disease and $18,557.13 higher for IBD patients than for those with colorectal cancer (both P<0.001).

Adjusted length of stay was 1 day longer with diverticular disease and 3 days longer

with IBD (both P<0.001).

"Colon resections are clearly not all the same," the group concluded.

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