

Study links obesity to increased risk of developing postoperative infection following colon surgery

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Obese patients appear to have a significantly increased risk of developing a surgical site infection after colectomy (procedure involving either partial or full removal of the colon), and the presence of infection increases the cost associated with the procedure, according to a report published online today that will appear in the September issue of *Archives of Surgery*.

Surgical site [infection](#) (SSI) is considered to be one of the best available measures of quality in surgery, and health care centers are starting to be financially penalized when SSI occurs, according to the authors. However, risk factors for SSI, of which the most common is obesity, are not considered in pay-for-performance models, the authors write as background information in the article.

"We chose to study colectomy as a standardized procedure because the risk of SSI following this procedure is known to be greater than that following other abdominal procedures," writes Elizabeth C. Wick, M.D., of the Johns Hopkins School of Medicine, Baltimore, and colleagues who evaluated SSI rates among obese and non-obese colectomy patients using data collected from claims from members of eight different Blue Cross Blue Shield (BCBS) insurance plans.

The authors identified 7,020 patients who were between 18 and 64 years of age and who underwent either a segmental or total colectomy for

[colon cancer](#), [diverticulitis](#) or [inflammatory bowel disease](#) between January 1, 2002 and December 31, 2008. Among these patients, 1,243 were identified as obese (defined as having a [body mass index](#) [BMI] greater than or equal to 30) and 5,777 were classified as non-obese.

The overall rate of SSI was 10.3 percent, with [obese patients](#) experiencing a higher rate of SSI compared to non-obese patients (14.5 percent vs. 9.5 percent). Obesity was the strongest predictor of SSI after adjusting for laparoscopy, diagnosis, sex and age, with obese patients experiencing a 60 percent increased odds of SSI compared to non-obese patients.

The mean (average) cost of colectomy was \$16,399, with the average cost for obese patients approximately \$295 more than that of non-obese patients. On average, developing a postoperative SSI was associated with increased cost of the procedure (average total cost of colectomy was \$31,933 in patients with infection versus \$14,608 in patients without infection), increased length of hospital stay (average of 9.5 days vs. 8.1 days), and a significantly higher rate of hospital readmission (27.8 percent vs. 6.8 percent).

"We conclude that patients undergoing colorectal surgery who develop SSIs, many of whom are obese, tax the health care system," the authors write. "Pay-for-performance policies in surgery should account for the increased risk of infection and cost of caring for this population. Failure to consider these differences could lead to perverse incentives that may penalize surgeons who care for obese patients and may even affect obese patients' access to colorectal surgery."

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