Effect of stitch length on complications

Hardin M., Oh J. S., White C. E., Cohn S. M.,

United States Army Institute of Sutgical Research, JBSA Fort Sam Houston, TX

Approved for public release, distribution unlimited

unclassified unclassified unclassified

UU 2

Standard Form 298 (Rev. 8-98)
Prescribed by ANSI Std Z39-18
Effect of Stitch Length on Complications

We very much enjoyed the recent article in the Archives by Millbourn and colleagues evaluating the effect of stitch length following closure of midline incisions on the incidence of wound infection and incisional hernia. These authors systematically challenged the surgical dogma of obtaining large fascial bites when closing abdominal wounds. This study used a novel experimental design with 2 different needle sizes in the treatment groups, ensuring surgeon compliance while maintaining the essential greater than 4 ratio of suture length to incision length.

We were unable to discern a few methodological issues. First, a power analysis showed a difference of 6% in the rate of wound infection; however, the expected baseline wound infection rate in the study population was not clearly stated. Also, although the 2 treatment groups appear similar based on the demographic variables presented, it would be helpful to review other important parameters (such as smoking, chronic obstructive pulmonary disease, and emergent surgery) that have been shown to be independently associated with surgical site infection or incisional hernia. Finally, because the suture to wound length ratio is associated with the incidence of incisional hernia, can the authors delineate the percentage of patients in each group with a suture to wound length ratio of less than 4?

It is remarkable how a simple change in technique resulted in such a significant decrease in complications. The authors should be commended for this landmark trial, which challenges the sacred cow of “mass closure” for abdominal incisions.

Mark Hardin, MD
John S. Oh, MD
Christopher E. White, MD
Stephen M. Cohn, MD

Author Affiliations: United States Army Institute of Surgical Research, Fort Sam Houston, Texas (Drs Hardin and White); Brooke Army Medical Center, San Antonio, Texas (Dr Oh); and University of Texas Health Science Center at San Antonio (Dr Cohn).

Financial Disclosure: None reported.

Stenting or Not Stenting Before Operating Malignant Colonic Obstruction? That Is the Question

We read with interest the article by Cheung et al1 published in the December 2009 issue of the Archives. First, we congratulate them for the completion of their randomized trial comparing stents with emergency surgery for obstructing left-sided colon cancer, because we all know how difficult it is to conduct such a trial in an emergency setting while comparing 2 very different approaches. Their results regarding the success rate of stents are impressive, though we in France have not had the same experience. Our results of stenting are far less favorable than those of the authors. We have conducted a quite similar randomized trial (I.P. et al, unpublished data, 2010), including 60 patients on an intent-to-treat basis (30 in each group), with stoma for any reason as the main end point. A total of 17 patients (57%) sustained a stoma after emergent open surgery compared with 13 (43%) patients after stenting and subsequent surgery (P = .30). Most stoma (n = 12) in the stenting group were placed because of failure or complications of the procedure. Hence, in our experience, stenting did not meet its goal by avoiding the stoma in nearly half of our patients.

A recent systematic review on this topic showed that the validity of results are limited because of the small sample sizes of the included studies, and additional comparative studies will add to the certainty of the conclusions that can be drawn.2 The awaited studies are there (I.P. et al, unpublished data, 2010), but unfortunately with conflicting results (obtained during the same period, 2002-2006). This situation highlights the need for further evidence-based evaluation of stenting as a bridge to surgery aiming to avoid the need for a stoma. So, to the question asked by Ludwig and Ridolfi3 commenting on the aforementioned article,4 we would answer that yes, this question deserves a further randomized trial or at least a further systematic quantitative review. On the other hand, besides morbidity and stoma rates, this further evaluation should answer the question of possible tumor dissemination following stenting,5 because in our experience (I.P. et al, unpublished data, 2010), besides the clinical perforations, 8 resected colonic specimens showed silent perforations by the prosthesis, raising the question of oncologic outcomes.

Karem Slim, MD
Isabelle Pirlet, MD
Bertrand Millat, MD, PhD

Author Affiliations: Department of Digestive Surgery University Hospital, University Hospital of Clermont-Ferrand, Clermont-Ferrand, France (Dr Slim); and Department of Digestive Surgery, Saint-Eloi Hospital, Montpellier, France (Drs Pirlet and Millat).

Correspondence: Dr Slim, Department of Digestive Surgery, University Hospital of Clermont-Ferrand, Hotel-Dieu Blvd Leon Malfray, Clermont-Ferrand, 63058 France (kslim@chu-clermontferrand.fr).

Author Contributions: Study concept and design: Pirlet and Millat. Acquisition of data: Slim, Pirlet, and Millat. Analysis and interpretation of data: Slim, Pirlet, and Millat. Drafting of the manuscript: Slim. Critical revision of the manuscript for important intellectual content: Slim, Pirlet, and Millat. Statistical analysis: Millat. Obtained funding: Millat. Administrative, technical, and material support: Millat. Study supervision: Slim and Millat.

Financial Disclosure: None reported.


In reply

We greatly appreciate Slim and colleagues’ interest in our article.1 We also congratulate them on their multicenter randomized controlled trial. They rightly pointed out that there may be possible tumor dissemination following colonic stenting in theory, but there are no oncological consequences reported in the literature so far.2 On the other hand, systematic reviews have demonstrated the safety and efficacy of endoluminal stenting for patients with colorectal cancer, with low stent-related mortality of less than 1%. The median perforation and stent migration rates were only 4% and 11%,3 respectively.4 In our earlier reported series, in which colonic stenting was used in 68 patients with distal colorectal tumors from February 2002 to August 2008—including emergency stenting in 53 patients with acute intestinal obstruction, palliative stenting for endoscopically obstructed cancer in 12 patients, as well as preemptive stenting in 3 patients with locally advanced stenotic rectal cancer intended for neoadjuvant chemoradiation—the technical success and clinical success rates were 81% and 65%, respectively.2 Our experience showed that colonic stenting is a useful adjunct in the management of distal colorectal cancer. Apart from being an alternative measure for palliation, it is an effective and noninvasive way for relieving obstruction in patients with obstructed tumors, allowing them to undergo subsequent I-stage laparoscopic tumor resection. It is also useful in patients with locally advanced rectal cancer, in whom neo-