

Laparoscopic Lavage Is Feasible and Safe for the Treatment of Perforated Diverticulitis With Purulent Peritonitis

The First Results From the Randomized Controlled Trial DILALA

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Objective: To evaluate short-term outcomes of a new treatment for perforated diverticulitis with purulent peritonitis in a randomized controlled trial.

Background: Perforated diverticulitis with purulent peritonitis (Hinchey III) has traditionally been treated with surgery including colon resection and stoma (Hartmann procedure) with considerable postoperative morbidity and mortality. Laparoscopic lavage has been suggested as a less invasive surgical treatment.

Methods: Laparoscopic lavage was compared with colon resection and stoma in a randomized controlled multicenter trial, DILALA (ISRCTN82208287). Initial diagnostic laparoscopy showing Hinchey III was followed by randomization. Clinical data was collected up to 12 weeks postoperatively.

Results: Eighty-three patients were randomized, out of whom 39 patients in laparoscopic lavage and 36 patients in the Hartmann procedure groups were available for analysis. Morbidity and mortality after laparoscopic lavage did not differ when compared with the Hartmann procedure. Laparoscopic lavage resulted in shorter operating time, shorter time in the recovery unit, and shorter hospital stay.

Conclusions: In this trial, laparoscopic lavage as treatment for patients with perforated diverticulitis Hinchey III was feasible and safe in the short-term.

Keywords: diverticulitis, Hartmann, laparoscopy, lavage, morbidity

Perforated diverticulitis of the colon is an uncommon serious abdominal condition, and perforation with purulent peritonitis (Hinchey III)¹ is even more uncommon.² The traditional treatment for this group of patients has been open operation with resection of the inflamed and perforated colon with a stoma, that is, the Hartmann procedure. Considerable morbidity has been reported after the Hartmann procedure³ and many patients will never undergo secondary surgery with reversal of the stoma and restored bowel continuity.⁴ Less invasive types of surgical treatment have thus been considered.^{5–8} One such procedure is laparoscopy with abdominal lavage, which in a large prospective case series reported good results.⁵ However, no randomized trials have yet reported any results. As the published evidence primarily includes retrospective series,⁷ the need for randomized studies is obvious.

The aim of this analysis was to compare short-term results of laparoscopic lavage with the Hartmann procedure within a randomized trial “Diverticulitis—Laparoscopic LAVage vs resection (Hartmann procedure) for acute diverticulitis with peritonitis” (DILALA).

METHODS

Trial Design

This trial was designed as a prospective, randomized, controlled trial (1:1) of laparoscopic lavage versus open Hartmann procedure. The protocol has previously been described in detail.⁹ Patients were included at 9 surgical departments in Sweden and Denmark from February 2010 to February 2014. The reports from this trial follow the CONSORT statement when applicable.¹⁰

Participants

Inclusion of patients was based on radiologic examination of the abdomen showing intra-abdominal fluid or gas and a decision to perform surgery followed by the patient’s informed consent. After inclusion, patients were taken to the operating room and the procedures were commenced with a diagnostic laparoscopy.

The exclusion criteria were as follows: patients not possible to operate due to concomitant disease or patients participating in another randomized trials in conflict with the protocol and endpoints of the DILALA trial.

When the diagnostic laparoscopy of the abdomen revealed a diverticulitis Hinchey grade III (purulent peritonitis and an inflamed part of the colon), patients were intraoperatively randomized. Patients with Hinchey grade I to II (no free fluid/pus in the abdomen), Hinchey grade IV (fecal contamination), or other pathology at laparoscopy were not eligible for randomization.

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