Original article

Two-year results of the randomized clinical trial DILALA comparing laparoscopic lavage with resection as treatment for perforated diverticulitis

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Background: **Traditionally, perforated diverticulitis with purulent peritonitis was treated with resection and colostomy (Hartmann's procedure), with inherent complications and risk of a permanent stoma. The DILALA (DIverticulitis – LAparoscopic LAvage *versus* resection (Hartmann's procedure) for acute diverticulitis with peritonitis) and other randomized trials found laparoscopic lavage to be a feasible and safe alternative. The medium-term follow-up results of DILALA are reported here.**

Methods: **Patients were randomized during surgery after being diagnosed with Hinchey grade III perforated diverticulitis at diagnostic laparoscopy. The primary outcome was the proportion of patients with one or more secondary operations from 0 to 24 months after the index procedure in the laparoscopic lavage *versus* Hartmann's procedure groups. The trial was registered as ISRCTN82208287.**

Results: **Forty-three patients were randomized to laparoscopic lavage and 40 to Hartmann's procedure. Patients in the lavage group had a 45 per cent reduced risk of undergoing one or more operations within 24 months (relative risk 0·55, 95 per cent c.i. 0·36 to 0·84; $P = 0·012$) and had fewer operations (ratio 0·51, 95 per cent c.i. 0·31 to 0·87; $P = 0·024$) compared with those in the Hartmann's group. No difference was found in mean number of readmissions (1·37 *versus* 1·50; $P = 0·221$) or mortality between patients randomized to laparoscopic lavage or Hartmann's procedure. Three patients in the lavage group and nine in the Hartmann's group had a colostomy at 24 months.**

Conclusion: **Laparoscopic lavage is a better option for perforated diverticulitis with purulent peritonitis than open resection and colostomy.**

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Introduction

Diverticular disease is a common condition in the Western world and is more common with advancing age[1]. The yearly incidence of perforated diverticulitis is estimated to be 3·5 per 100 000[2]. Traditionally, the treatment of perforated diverticulitis (Hinchey grade III and IV) has been either resection with a colostomy (Hartmann's procedure) or, less often, primary resection and anastomosis with or without a temporary diverting stoma[3,4]. Both surgical procedures are associated with a high risk of reoperation, prolonged hospital stay and readmissions, and for some patients the result will be a permanent stoma[5].

Laparoscopic lavage as an alternative to these procedures was reported to have promising results[6] and has now been investigated in three RCTs[7–10]. The 12-month results of the DILALA trial[9,10] showed laparoscopic lavage to be feasible and safe in patients with purulent peritonitis. The procedure significantly reduced the proportion of