

Debate against: Do not perform a primary anastomosis during resection for acute diverticulitis

By

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No disclosure

Acute diverticulitis: from inflammation to fecal peritonitis

The Hinchey Classification

HINCHEY

I



- Pericolic abscess or phlegmon



HINCHEY

II



- Pelvic abscess or distant abscess



HINCHEY

III

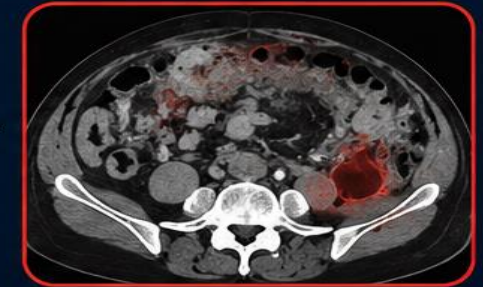


- Purulent peritonitis



HINCHEY

IV



- Fecal peritonitis



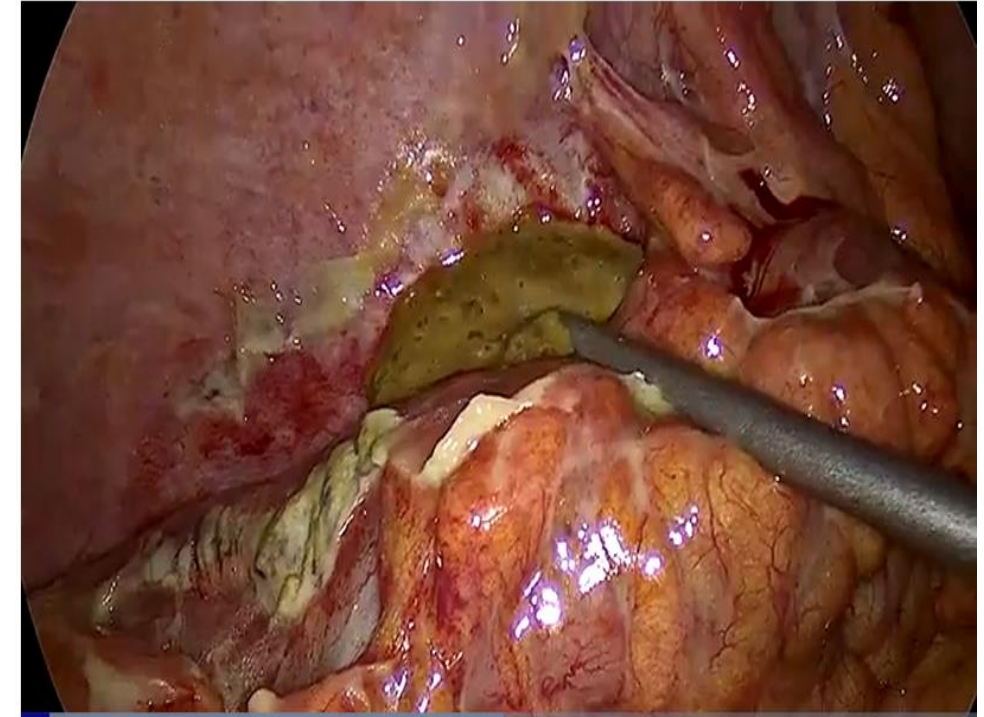
As the disease progresses, the biology changes



As the disease progresses, the biology changes.



**Would you really
anastomose this?**



Because sometimes, the safest anastomosis... is the one we don't make

The Acute Abdomen Is Not an Elective Colon:

- Inflammation.
- Edema.
- Contamination
- Sepsis
- Impaired healing.



We are asking the anastomosis to heal

at exactly the moment when the biological environment is least favourable

The real question is not: Can I anastomose? But can I safely anastomose this patient?

- Is the patient physiologically stable?
- Is the bowel healthy?
- Is perfusion reliable?
- What will happen if this anastomosis leaks?



The technical ability to create an anastomosis does not mean that it is the safest decision

Anastomotic Leak Is Not Just a Complication

Abscess



Sepsis



Reoperation



Stoma

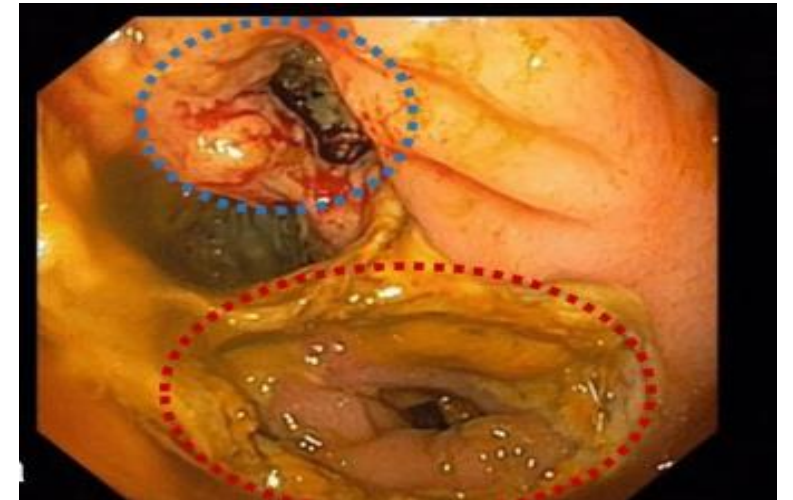


Morbidity



Mortality

In emergency surgery, the cost of failure is different



What about the evidence?



Mortality and Morbidity After Hartmann's Procedure Versus Primary Anastomosis Without a Diverting Stoma for Colorectal Perforation: A Nationwide Observational Study

Asuka Tsuchiya ✉, Hideo Yasunaga, Yusuke Tsutsumi, Hiroki Matsui, Kiyohide Fushimi

Results

We identified 8500 eligible patients (5455 HP and 3045 PA). In the propensity score-matched model, a significant difference between the HP and PA groups was detected in 30-day mortality (7.7% vs. 9.6%; risk difference, 1.9%; 95% confidence interval [CI], 0.5–3.4). The inverse probability of treatment weighting showed similar results (8.8% vs. 10.7%; risk difference, 1.9%; 95% CI, 1.0–2.8). In the instrumental variable analysis, the point estimate suggested similar direction to that of the propensity score analyses (risk difference, 4.4%; 95% CI, –3.3 to 12.1). The PA group had significantly higher rates of secondary surgery for complications (4.6% vs. 8.4%; risk difference, 3.8%; 95% CI, 2.5–4.1) and slightly longer duration of postoperative critical care interventions.

30-day mortality was 7.7 % (Hartmann procedure) vs 9.6 % (primary anastomosis)

Table 4 Subgroup analyses of 30-day mortality in propensity score-matched groups

	Matched groups				Risk difference, %	95% confidence interval
	Primary anastomosis	Hartmann's procedure				
	%	No. of deaths/ total no.	%	No. of deaths/ total no.		
Age, years						
15–59	1.6	8/503	1.2	7/567	0.4	(–1.2 to 2.0)
60–69	4.1	22/542	4.2	22/519	–0.2	(–2.7 to 2.3)
70–79	8.4	70/835	7.5	60/804	0.9	(–1.7 to 3.6)
≥80	18.4	169/920	13.9	126/910	4.5	(1.2 to 7.9)
Sex						
Male	8.4	122/1460	7.0	102/1463	1.4	(–0.6 to 3.3)
Female	11.0	147/1340	8.5	113/1337	2.5	(0.3 to 4.8)
Etiology						
Diverticular disease	4.2	36/862	4.5	40/894	–0.3	(–2.2 to 1.6)
Colon carcinoma	9.8	61/624	7.4	45/610	2.4	(–0.7 to 5.6)
Inflammatory bowel disease	0.0	0/22	0.0	0/15	0	(–20.4 to 14.9)
Iatrogenic or foreign objects	0.0	0/13	7.1	1/14	–7.1	(–31.5 to 16.4)
Ischemic disease	29.7	19/64	20.4	11/54	9.3	(–6.6 to 24.1)
Ileus	11.0	10/91	11.4	9/79	–0.4	(–10.5 to 9.2)
Data not provided	12.7	143/1124	9.6	109/1134	3.1	(0.5 to 5.7)
Peritonitis	9.9	203/2056	7.8	162/2071	2.1	(0.3 to 3.8)
Mechanical ventilation (day 1)	22.0	75/341	19.2	58/302	2.8	(–3.5 to 9.0)
Vasopressor (day 1)	18.6	227/1218	14.6	171/1175	4.1	(1.1 to 7.1)
Blood transfusion (day 1)	19.0	123/648	15.3	93/608	3.7	(–0.5 to 7.8)
Glucocorticoid (day 1)	18.7	87/466	13.4	61/455	5.3	(0.5 to 10.0)

condition and comorbidity. In conclusion, sigmoid colectomy and primary anastomosis is feasible and safe in many patients who need surgery for perforated diverticulitis, particularly when combined with loop ileostomy. Based on our own published analysis, however, we recommend performing Hartmann's operation in severely ill patients who carry substantial comorbidity, while the extent of peritonitis appears not to be of predominant importance.

Conclusions: Currently, surgeons perform HP more frequently than PADLI. When controlling for patient population differences, PADLI appears to be at least a safe alternative to HP for select patient populations needing emergent surgical management of acute diverticulitis.

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Hartmann's Procedure or Primary Anastomosis?

Subject Area:  [Gastroenterology](#)

[Martin E. Kreis](#); [Mario H. Mueller](#); [Wolfgang H. Thasler](#)

Dig Dis (2012) 30 (1): 83–85.

<https://doi.org/10.1159/000335726>  [Article history](#)

PubMed:22572692

[Multicenter Study](#) > [J Am Coll Surg](#). 2019 Jul;229(1):48–55.

doi: 10.1016/j.jamcollsurg.2019.03.007. Epub 2019 Mar 20.

Hartmann's Procedure vs Primary Anastomosis with Diverting Loop Ileostomy for Acute Diverticulitis: Nationwide Analysis of 2,729 Emergency Surgery Patients

[Lee](#)¹, [Jun Bai P Chang](#)¹, [Majed El Hechi](#)¹, [Napaporn Kongkaewpaisan](#)¹,
[er Bonde](#)¹, [April E Mendoza](#)¹, [Noelle N Saillant](#)¹, [Peter J Fagenholz](#)¹, [George Velmahos](#)¹,
[Ma Kaafarani](#)²

Randomised Controlled Trial

Hartmann's procedure versus sigmoidectomy with primary anastomosis for perforated diverticulitis with purulent or fecal peritonitis: Three-year follow-up of a randomised controlled trial

Pim P. Edomskis^{a,*}, Vincent T. Hoek^{a,1}, Pieter W. Stark^a, Daniël P.V. Lambrichts^a, Werner A. Draaisma^b, Esther C.J. Consten^{c,d}, Willem A. Bemelman^f, Johan F. Lange^{a,e}, on behalf of the LADIES trial collaborators



Conclusion: Long-term results showed that in haemodynamically stable, immunocompetent patients primary anastomosis is superior to Hartmann's procedure as treatment for perforated diverticulitis with respect to long-term stoma free rate, overall hospitalization and parastomal hernias.

Review

Perforated diverticulitis: To anastomose or not to anastomose? A systematic review and meta-analysis



F. Shaban^{a,*}, K. Carney^b, K. McGarry^c, S. Holtham^d

Conclusion: Resection and primary anastomosis should be considered as a feasible and safe operative strategy in selected patients with perforated diverticulitis. There is however a paucity of high level evidence and further research is needed.

Current Aspects on the Perforated Acute Diverticulitis Review

Efstathios T. Pavlidis¹, Theodoros E. Pavlidis¹

It is not about the anastomosis. It is about the patient

Surgery in Colonic

Diverticulitis

Tien Tran Phung Dung¹, Huan Nguyen Ngoc¹

1. Digestive Surgery, Cho Ray Hospital, Ho Chi Minh City, VNM

its use. The decision of the best choice is controversial, must be individualized, and depends on hemodynamic status, septic shock, qSOFA score, age, comorbidity, immune status, intraoperative findings, and MPI. Ongoing randomized controlled trials possibly may clarify this complicated issue.

Conclusions

Hartmann's procedure is an appropriate intervention for severe perforated sigmoid and rectosigmoid diverticulitis with fecal contamination of the abdominal cavity, shock, or patients with multiple comorbidities. Baseline patient factors heavily dictate survival and morbidity outcomes, with advanced age, intraoperative fecal contamination, and admission hypotension serving as critical prognostic drivers.

What about the guidelines?

European Society of Coloproctology: guidelines for the management of diverticular disease of the colon

Primary anastomosis will result in a lower stoma rate but may also increase the risk for complications. Many studies have used a diverting loop ileostomy.

The larger cohort studies included both Hinchey III and Hinchey IV and one of the cohort studies included 67 721 patients [141]. This study found a higher risk for complications in patients with anastomosis and diversion compared to colostomy.

Statement

Primary anastomosis with or without diverting ileostomy can be performed in haemodynamically stable and immunocompetent patients with Hinchey III or IV diverticulitis.
Evidence level 2, Conditional recommendation. Consensus 97% (second voting)

CLINICAL PRACTICE GUIDELINES

The American Society of Colon and Rectal Surgeons Clinical Practice Guidelines for the Treatment of Left-Sided Colonic Diverticulitis

Following resection, the decision to restore bowel continuity should incorporate patient factors, intra-operative factors, and surgeon preference. Grade of Recommendation: Strong recommendation based on moderate-quality evidence, 1B.

however, there was a trend toward increased mortality and postoperative sepsis when diversion was not utilized in the setting of a primary anastomosis.¹³⁷

Parameters generally favoring colostomy and Hartmann procedure include patient and intraoperative factors such as hemodynamic instability, acidosis, acute or chronic organ failure, and immunosuppression.



The World Society of Emergency Surgery

REVIEW

Open Access

2020 update of the WSES guidelines for the management of acute colonic diverticulitis in the emergency setting



Should primary anastomosis with or without protecting stoma be preferred instead of Hartmann's procedure in patients with diffuse peritonitis from diverticular perforation?

We recommend Hartmann's procedure (HP) for managing diffuse peritonitis in critically ill patients and in selected patients with multiple comorbidities (strong recommendation based on low-quality evidence, 2B).

In clinically stable patients with no comorbidities, we suggest primary resection with anastomosis with or without a diverting stoma (weak recommendation based on low-quality evidence, 2B).

The background is a teal-colored image featuring a low-angle, upward-looking perspective of several modern skyscrapers. The buildings are rendered in a slightly desaturated, artistic style. Overlaid on this background is a large, white, double-lined diamond shape that frames the central text.

Thank you