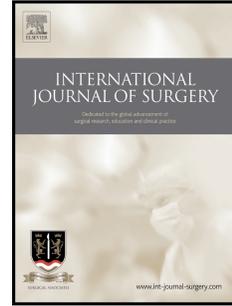


# Journal Pre-proof

An Invited Commentary on “Laparoscopic repair of perforated peptic ulcer is not prognostic factor for 30-day mortality (a nationwide prospective cohort study) (Int J Surg 2019; Epub ahead of print)

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Perforation is a severe complication of peptic ulcer, about 2-14 % of all ulcers.<sup>1</sup> In spite of higher HP detection and eradication rates and introduction of PPI drugs, the incidence has remained steady in the last 50 years.

Treatment with direct suture with or without omental patch is commonly used, as described at the end of the 19th century.<sup>1,2</sup>

Modern diagnostic and surgical techniques brought a few improvements:

1. Higher sensitivity and specificity in detection of perforated peptic ulcer (PPU) via CT scan, and better differential diagnosis with other causes of acute abdomen (i.e: perforated diverticula or pancreatitis)
2. non operative management (NOM)<sup>3</sup>
3. laparoscopic treatment (LS).<sup>1,2,4,5</sup>

1. In PPU the onset of peritonitis and sepsis is quick, and mortality can reach 50% in elderly patients if diagnosis is delayed for more than 12 hours.<sup>1</sup> In this respect, CT scan is one of the most useful tools for early diagnosis: both for detection of small collections of free peritoneal air, and for diagnosing the site of perforation. CT is advised when free air under the diaphragm is not apparent on x-rays (chest X-ray sensitivity is around 70%), while clinical examination is suggestive with perforated hollow viscus.

2. The NOM principle is that every ulcer will seal itself in time.<sup>3</sup> However, in case of failure of NOM, the mortality is very high. Indications are a gastroduodenogram showing no or minimum leak, mild symptoms and lack of peritoneal effusion and signs of sepsis. Continuous nasogastric suction, intravenous fluids and therapy with PPI are mandatory. The patient needs to be monitored for peritoneal abscess and late complications.

3. In their nationwide cohort study on 1008 patients, Zogovic et al.<sup>2</sup> infer that LS repair in patients with PPU does not reduce short term mortality, compared to open surgery (OS).

However, LS ulcer repair has become increasingly common. Direct suture is a simple OS procedure, but a complicated laparoscopic technique. The creation of special self-locking threads, that make the suturing procedures manageable even in an emergency setting, makes the procedure easier. The outcome is similar to OS, with the advantage of minimal abdominal scars and lower wound infection rates.

However, the cost of LS in terms of theater time and devices is probably exceedingly high for such a straightforward procedure and not all the hospitals have LS availability in emergency settings.

Another issue is peritoneal lavage, which is of paramount importance in PPU. Can it be performed effectively in laparoscopy? The washing of all peritoneal recess with several liters of warm saline is mandatory in PPU surgery and very simple in OS, but reaching the area around the ileum and the recesses in LS can be challenging even for an experienced surgeon. The incidence of late intra-abdominal abscess, in fact, is higher in laparoscopy.

Definitive PPU surgery, that is gastric resection in case of wide, callous or recurrent ulcers, needs to be performed in OS.

Perioperative gastric ulcer biopsy is commonly advised. In my opinion, relying only on this, could leave undiagnosed atypias or T1-2 tumors, or tumors not evident at the periphery of the ulcer. Therefore, I believe postoperative (3-4 weeks) endoscopic biopsy with adequate sampling is the safest choice.

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