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Laparoscopic Repair of Perforated Peptic Ulcer: Why We Convert?

Background: Perforated peptic ulcers (PPU) represent the second most frequent abdominal cause of perforation and the leading indication for gastric emergency surgery. There is the evidence that laparoscopy is a safe and practical approach to PPU, but a non-negligible part of patients need conversion to open surgery.

Aim: This study analyzed the outcome of patients with PPU that underwent a laparoscopic repair with the aim of finding out which factors had a significant impact on conversion.

Methods: We collected data on 93 patients undergoing laparoscopy for PPU during the period 2002-2018. There were 55 male (60%) and 38 female. Mean age was 58 years (± 19.03). Co-morbidities were present in 35 pts (38%). Mean Mannheim Peritonitis Index (MPI) was 18 (± 6.5). Two groups were identified: those of non-converted (NCG) and those converted (CG). We compared the two groups in order to find out factors that had a significant impact on conversion.

Results: Laparoscopic repair was completed in 66 pts (NCG, 71%), while there was a conversion in 27 cases (CG, 29%). Age (66.77 vs 44.08 vs 55.75 ± 19.93 ; $p = 0.010$) and MPI score (21.92 ± 6.67 vs 19.32 ± 5.21 ; $p = 0.069$) were significantly higher in CG. The ulcer size measured at surgery was significantly larger in the CG (1.93 ± 0.98 vs 0.68 ± 0.39 ; $p < 0.0001$). None of the patients in NCG had a PPU located in the posterior aspect of the duodenum and of the stomach. By contrast, patients in CG had a posterior perforation in 22% of the duodenal ulcers and 14% of the gastric ulcers ($p < 0.0001$). Postoperative complications (52% vs 20%; $p = 0.002$) and mortality (19% vs 4%; $p = 0.024$) occurred more frequently among CG. Mean postoperative stay was longer in CG (12 ± 6.3 vs 7.3 ± 2.4 ; $p < 0.0001$).

Discussion: Laparoscopy is a safe and effective approach in the treatment of PPU. Older patients, a higher MPI, a greater ulcer size, and a posterior location of the perforated ulcer are more likely to be related to conversion to open surgery.