

The COVID-19 pandemic should not take us back to the pre-laparoscopic era

Emanuele Botteri¹, Mauro Podda², Alberto Sartori³

On behalf of the Executive Board of the Italian Society for Endoscopic Surgery and new technologies (SICE)

¹ UO Chirurgia Generale, ASST Spedali Civili di Brescia, PO Montichiari, Brescia

² UO Chirurgia Generale e d'Urgenza, Policlinico Universitario, Università degli Studi di Cagliari, Cagliari

³ UO Chirurgia Generale Ospedale San Valentino, Montebelluna, Treviso

e.botteri@libero.it

dott.sartori@gmail.com

mauropodda@ymail.com

CORRESPONDING AUTHOR:

Emanuele Botteri e.botteri@libero.it +39 030 9963280

All authors declare no conflict of interest

No funding received

Dear Editor,

We read with interest the manuscript published by Salomone Di Saverio *et al* in your Journal [1].

We believe that there could not be disagreement on two points:

1. All patients requiring emergency undelayable surgical procedure should be tested for COVID-19. Awaiting the results of the testing should not delay surgical treatment whenever this is urgently needed.
2. Non-Operative Management strategy of urgent surgical diseases should be considered and proposed to the patient when it's safe and efficient, as it's already done in a majority of centers [2].

However, we have concerns regarding several other points raised in the paper, which we would like to discuss in a constructive way:

1. The authors present the Intercollegiate General Surgery Guidance in the UK as a shared guidance though all European nations. On the European side there's a much more prudent attitude towards the use of laparoscopy, as highlighted by the joined Recommendations edited by SAGES and EAES available online on their websites, which our Society totally endorsed. Here pros and cons are carefully described and the suggestion is "to WEIGHT SPECIFIC RISK/BENEFIT PARAMETERS CONCERNING THE USE OF LAPAROSCOPIC APPROACH IN THE PATIENT WITH SURGICAL EMERGENCY AND COINFECTION BY SARS-CoV-2"[www.eaes.eu]. While we agree that

“uncertainty exists about knowledge of the COVID-19 viral spread in theaters”, we don’t understand what makes the authors “feel safer performing open surgery”. A recent publication reported 34 patients, all asymptomatic for COVID19, who underwent surgery for various indications and who developed COVID19 pneumonia after surgery. Seven had laparoscopies for appendectomy(2), partial colectomy(4), radical gastrectomy(1), but all recovered [3]. Regarding operators’ safety, we reiterate once again that COVID-19 has never been isolated so far from the peritoneal cavity of infected subjects undergoing abdominal surgery, consequently its virulence is not known. Even in case of contamination, i.e. due to bowel opening, laparoscopy offers for sure many more chances to protect operators as all gases are confined into a cavity, compared to the spread due to open surgery. Filtration devices can be extremely affordable and for sure don’t impact on hospital economy [4]. Some work still needs to be done in prevention of leaks while exchanging instruments through cannulas, as it’s most probable that single use trocars offer a better way to prevent leaks due to the internal double rubber seals, but this requires specific investigation.

2. It’s true that a recent meta-analysis of RCTs demonstrated few advantages of laparoscopy compared to open surgery in the treatment of perforated peptic ulcers, but still some advantages were observed, such as reduced rate of wound infection, being most of the other metrics subjective. Laparoscopy for perforated peptic ulcers does not require any dissection, so any particular aerosolization can be expected.
3. Laparoscopic cholecystectomy for acute cholecystitis has a higher incidence of conversion and complications, compared to elective cholecystectomy, but still nobody doubts that the laparoscopic route should be preferred for the evident benefits for the

patient. Selection of patients requiring undelayable surgery is mandatory, but then, it seems reasonable to still prefer the laparoscopic route, also considering that the hypothesis of no use of electrocauterization without relevant blood loss might be true for a midline laparotomy, but not in case of a subcostal incision such as for open cholecystectomy.

4. Complete imaging workup is mandatory and not due to the current situation, to minimize diagnostic laparoscopies and negative appendectomies, not so common anymore. Moreover, a perforated appendectomy is difficult to perform through a Mc Burney access. It's definitely more cautious to use a midline or pararectal incision, which would then require a large access. Considering also the limited use of electrocautery, it seems quite illogic to renounce the clear advantages of laparoscopy compared to laparotomy.
5. Even before the recent revision of the European Society for Gastrointestinal Endoscopy (ESGE) guidelines for malignant obstruction of the colon [5] palliation was a clear indication for stenting, being the risk of perforation, even delayed, almost negligible. This would avoid emergent surgery, and consequent stoma formation, in a rate between 80 and 90% of individuals. Thanks to the results of the ESCO trial and of the CREST study (UEGW2019, Barcelona, Spain) we know that no oncologic issue is raised by the use of metal stents in malignant colonic obstruction. Therefore, stenting seems a better option compared to emergent surgery, not only for the better advantages mainly in terms of lower complications and lower need of both temporary and permanent stomas, but also, in times of viral infection, as it may help in delaying a general anesthesia which may be fatal in asymptomatic carriers of the virus [3].

6. Finally, Acute Diverticulitis can only be diagnosed by CT scan. The recent publication of the SAGES / EAES Consensus already states that any Hinchey II abscess >4 cm represents an indication for percutaneous drainage rather than emergent surgery. Concerning the kind of resection and anastomosis, the authors advise to prefer a stoma formation to reduce risks. Nevertheless, according to the few studies available, it is known that the risk of permanent stoma after Hartmann procedure is much higher compared to primary anastomosis covered by a defunctioning stoma, while the risk of clinically relevant leak seems negligible. It seems therefore not justified to permanently burden the health of individuals for an unclear risk for both patients and operators.

A cost-benefit analysis should be performed more carefully. Laparoscopy has proven advantages for the patient (shorter hospital stays, lower complication rates, and faster patient recovery) that, at the same time, can decrease overall hospital stay and hence hospital cost.

At the moment, there is not enough evidence to recommend a modification of the approach for surgical emergencies from laparoscopy to laparotomy when indicated.

As surgeons, as doctors and as men, we hope to learn and to evolve from this difficult time, not to go backwards.

All authors declare no conflict of interest

No funding received

F.Agresta *President*

M.Guerrieri *President Elect* G.Silecchia *Past President*

A.Arezzo *General Secretary*. W.Petz *Treasurer*

Vicepresidents: G.Anania D.Cuccurullo R.Brachet Contul

Executive Board: A.Agrusa, ME Allaix, E. Botteri, V.Caracino, E.Cassinotti, G.D'Ambrosio,

M.Milone, I.Muttillo, M.Pisano, M.Podda, A.Sartori.

References

1. Di Saverio S, Khan M, Pata F, et al. Laparoscopy at all costs? Not now during COVID-19 and not for acute care surgery and emergency colorectal surgery: a practical algorithm from a Hub Tertiary teaching hospital in Northern Lombardy, Italy. *J Trauma Acute Care Surg.* 2020; doi:10.1097/TA.0000000000002727
2. Podda M, Gerardi C, Cillara N, et al. Antibiotic Treatment and Appendectomy for Uncomplicated Acute Appendicitis in Adults and Children: A Systematic Review and Meta-analysis. *Ann Surg.* 2019; 270:1028–1040. doi:10.1097/SLA.0000000000003225
3. Lei S, Jiang F, Su W, et al. Clinical characteristics and outcomes of patients undergoing surgeries during the incubation period of COVID-19 infection. *EclinicalMedicine.* 2020; doi:10.1016/j.eclinm.2020.100331
4. Mintz Y, Arezzo A, Boni L, et al. A Low Cost, Safe and Effective Method for Smoke Evacuation in Laparoscopic Surgery for Suspected Coronavirus Patients. *Ann Surg.* 2020; doi: 10.1097/SLA.0000000000003965
5. van Hooft JE, Veld JV, Arnold D, et al. Self-expandable metal stents for obstructing colonic and extracolonic cancer: European Society of Gastrointestinal Endoscopy (ESGE) Guideline - Update 2020. *Endoscopy.* 2020; doi: 10.1055/a-1140-3017.