COVID-19 outbreak and the practice of surgery: do we need to change?

Editor

Most leading surgical societies have developed recommendations to help surgeons during the COronaVIrus disease 2019 (COVID-19) outbreak. Such guidelines are particularly restrictive in terms of indications for surgery and use of established techniques. For instance, the Intercollegiate General Surgery Guidance (IGSG) in the United Kingdom has suggested performing stoma instead of direct colorectal anastomosis, nonoperative treatment of acute appendicitis, limited indications for cholecystectomy and avoidance of laparoscopy. Even though there is no evidence of COVID-19 transmission during laparoscopic surgery[1-2], this suggestion has been shared by surgeons worldwide via social networks, and laparoscopy banned in several areas.

We believe that, since little is known about COVID-19, existing data are insufficient to propose guidelines radically changing the best established surgical practice. Therefore, at the Department of Surgery, University of Torino, we have not changed surgical techniques and approaches during the outbreak.

We report our clinical experience between the first day of lockdown (9 March) and 15 April. The results are compared to those obtained during the same period in 2019.

Starting 8 March, a national decree forced surgical units to limit their activity to emergency and cancer surgery[3-4]. Patients who entered the Emergency Department followed two separate pathways, depending on the presence of any symptom related to COVID-19. All patients with indication for surgery were screened for COVID-19 preoperatively[5]. In addition, patients scheduled for elective surgery were tested prior to surgery. If negative, they underwent the planned surgery, otherwise the operation was postponed and rescheduled after resolution of COVID-19 infection. A smoke filtration system was used in all laparoscopic procedures. During postoperative course, patients who developed a cough, fever or respiratory symptoms were tested for COVID-19 and, if positive, transferred to a COVID-19 area. Clinical results and statistics are presented in *Table 1*.

In the elective surgery group, two (1·5 per cent) patients were preoperatively diagnosed with COVID-19; after resolution both patients had surgery without complications.

Overall, one (of 373) (0·3 per cent) patient developed a COVID-19 infection during the postoperative course, successfully treated in a dedicated COVID-19 ward.

This analysis from a region badly hit by the COVID-19 outbreak brings four considerations. First, an increase in postoperative complication rate was not observed. Despite the fact the 2019 group included both major and minor surgical operations and patients in 2020 had a higher rate of medical comorbidities, short-term surgical outcomes were similar. Second, we recorded no increase in the anastomotic leak rate, thus challenging the recommendation that more patients undergoing gastrointestinal resection should be diverted. Third, we have not shifted towards an open approach. COVID-19 has never been identified in surgical smoke, and therefore surgeons should not switch

Table 1 Comparison between 2019 and 2020

	Elective surgery					Emergency surgery				
	2019		2020		*P*-value	2019		2020		*P*-value
Operations (*n*; %)	328	100%	134	100%		45	100%	29	100%	
Resection for cancer (*n*; %)	87	26·5%	100	74·6%	< 0·001¶	9	20·0%	2	6·9%	0·183¶
Age [years] (median; range)	59 (4-89)		66 (14-91)		0·001#	58 (16-93)		65 (15-90)		0·905#
Medical comorbidities (*n*; %)	139	42·4%	103	76·9%	< 0·001¶	20	44·5%	17	58·6%	0·341¶
Cardiovascular	54	16·5%	38	28·4%	0·004*	7	15·6%	6	20·7%	0·755¶
Pneumologic	30	9·1%	24	17·9%	0·008*	4	8·9%	2	6·9%	1¶
Kidney	13	4·0%	13	9·7%	0·015*	2	4·4%	2	6·9%	0·642¶
Diabetes	36	11·0%	25	18·7%	0·027*	3	6·7%	5	17·2%	0·250¶
Cirrhosis	6	1·8%	3	2·2%	0·723¶	4	8·9%	2	6·9%	1¶
Laparoscopy (*n*; %)	195	59·5%	85	63·4%	0·427*	19	42·2%	13	44·8%	1¶
Conversions (*n*; %)	7/202	3·5%	0	0·0%	0·109¶	5/24	20·8%	5/18	27·7%	0·720¶
Open (*n*; %)	126	38·4%	49	36·6%	0·710*	21	46·7%	11	37·9%	0·483¶
Postoperative ICU (*n*; %)	48	14·6%	11	8·2%	0·060*	12	26·7%	6	20·7%	0·594¶
Length of hospital stay [days] (median; range)	3 (0-62)		6 (0-33)		< 0·001#	5 (1-229)		5 (1-12)		0·779#
Complications (*n*; %)	65	19·8%	25	18·7%	0·775*	9	20·0%	3	10·2%	0·345¶
Dindo 1-2	46	14·0%	17	12·7%	0·704*	1	2·2%	1	3·4%	1¶
Dindo 3	10	3·1%	2	1·5%	0·522¶	2	4·5%	1	3·4%	1¶
Dindo 4-5	9	2·7%	6	4·5%	0·387¶	6	13·3%	1	3·4%	0·235¶
Anastomotic leak (*n*; %)	6/67	9·0%	2/60	3·3%	0·279¶	1/9	11·1%	1/5	20·0%	1¶

*Chi square test; ¶Fisher's exact test; #Mann–Whitney test.

to open surgery for unproven reasons. Fourth, only one patient during the post operative course and no one from the surgical team were infected by COVID-19, showing that adequate screening and pathways are able to guarantee patients' and operators' safety.

In conclusion, the need to modify surgical strategies during the COVID-19 outbreak is not confirmed by our experience. Nevertheless, larger series are needed to support such findings.

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