

## Safety of cancer surgery during the COVID-19 pandemic

### Editor

Concerns have arisen about cancer surgery during the COVID-19 pandemic because of the suspected high risk of infection and poorer surgical outcomes<sup>1,2</sup>. As a result, several surgeons and associations recommend limiting oncological surgical procedures, potentially leading to poorer outcomes<sup>1,3</sup>. Similar concerns have arisen about minimally invasive surgery (MIS)<sup>2,4</sup>.

We hypothesized that during the COVID-19 pandemic, in patients without infection, cancer surgery can be performed safely in hospitals with sufficient resources and means to establish separate circuits for uninfected patients. We analysed digestive, urological and breast cancer surgery during the COVID-19 pandemic, between 1 March and 9 April 2020, and compared it with surgery from the same 2019 period. Patients without evidence of COVID-19 were included. The objectives were postoperative morbimortality, analysed by the Dindo-Clavien and Comprehensive Complication Index (CCI) scores, MIS safety and SARS-CoV-2 infection frequency.

COVID-19 was excluded via preoperative interview to identify symptoms or community contact with infected people. From 23 March, RT-PCR was carried out on all patients, and 48 (45.3 per cent of total) had a negative test result. One patient was positive and his operation was delayed and excluded from the study. The first 58 patients (54.7 per cent) did not receive this test. Our hospital had clearly defined areas and routes for confirmed or suspected cases of COVID-19 according to recommendations<sup>3,4</sup>. The maximum peak of COVID-19 hospitalized patients was 22.2 per cent of the total hospital beds.

Finally, 106 patients (group 1) were analysed and compared with 122 patients from 2019 (group 2). Sixty-six (62.3 per cent) group 1 patients received MIS. No significant differences were found in surgical complexity,

		Group 2 (2019)	Group 1 (2020)	P
Patients		122	106	
Age (σ)		64.7 (12.1)	66.8 (13.7)	0.22
Gender	Male	69 (56.6%)	65 (61.3%)	0.47
	Female	53 (43.4%)	41 (38.7%)	
Charlson		5.7 (2.6)	5.3 (2.3)	0.32
BMI (σ)		26.4 (4.2)	27.3 (4.9)	0.13
Previous chemotherapy		22 (18%)	16 (15.1%)	0.55
Minimally invasive surgery	Yes	72 (59%)	66 (62.3%)	0.68
	No	50 (41%)	40 (37.7%)	
<b>Procedure</b>	<b>Complexity</b>			
Transurethral bladder cancer resection	2	21 (17.2%)	22 (20.8%)	0.34
Breast	2	25 (20.5%)	20 (18.9%)	
Colon	3	18 (14.8%)	15 (14.2%)	
Rectum	4	15 (12.3%)	9 (8.5%)	
Partial/total nephrectomy	3	9 (7.4%)	11 (10.4%)	
Radical prostatectomy	3	6 (4.9%)	7 (6.6%)	
Liver resection	4	11 (9%)	3 (2.8%)	
Pancreatectomy	4	4 (3.3%)	5 (4.7%)	
Carcinomatosis	4	2 (1.6%)	3 (2.8%)	
Orquiectomy / penile resection	2	2 (1.6%)	3 (2.8%)	
Gastrectomy	3	3 (2.5%)	2 (1.9%)	
Thyroidectomy	3	5 (4.1%)	1 (0.9%)	
Radical cystectomy	4	0	4 (3.8%)	
Esophagectomy	4	1 (0.8%)	0	
Soft tissue sarcoma	3	0	1 (0.4%)	







MIS proportion, age, gender, BMI or Charlson Comorbidity Index (Table 1).



Overall mortality was 2.8 per cent (3 cases) in group 1 and zero in group 2, with no significant differences ( $P = 0.13$ ). One patient discharged with a negative RT-PCR was readmitted with a positive test and subsequently died. Another patient with two negative RT-PCR and antibodies (ELISA) developed bilateral pneumonia and died. No other patients in the study had suspected COVID-19. Therefore, there was only one confirmed case of death from infection following surgery (0.94 per cent), probably community-acquired. If the second death in group 1 were considered positive despite a negative RT-PCR, the percentage would be 1.9 per cent.

There was no increase in complications measured with the CCI, which also includes mortality (group 1: mean 6.6, SD: 16.3; group 2: mean 7.9, SD: 15.8) ( $P = 0.64$ ).

In the multivariable analysis, only procedure complexity had a significant influence on the development of complications (according to global estimates using the CCI) ( $P < 0.001$ ). Oncological surgery in 2020 ( $P = 0.87$ ), BMI ( $P = 0.25$ ), age ( $P = 0.56$ ), preoperative chemotherapy ( $P = 0.6$ ) and MIS (0.37) did not have a significant influence.

In conclusion, in our experience cancer surgery in the outbreak phase can be safely performed in a hospital with less than 25 per cent of beds occupied by COVID-19 patients, assuming established separate wards and transfer circuits and a reasonable COVID-19 testing procedure. Furthermore, we consider MIS during the pandemic to be safe in those patients without demonstrable infection.

J. C. Rodríguez-Sanjuán<sup>1</sup> ,  
S. Castanedo<sup>1</sup> ,  
E. Toledo<sup>1</sup> , P. Calleja<sup>2</sup> ,  
J. Jimeno<sup>1</sup> , M. Gómez<sup>1</sup> 

E. J. Anderson<sup>1</sup>  and  
J. L. Gutiérrez-Baños<sup>2</sup> 

*Departments of<sup>1</sup>General Surgery  
and<sup>2</sup>Urology, University Hospital  
“Marqués de Valdecilla”, University of  
Cantabria, Santander, Spain*

DOI: 10.1002/bjs.11767

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