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## COVID-19-free Surgical Pathways for Breast Cancer Patients

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COVID-19 pandemic declared by the WHO on March 11th, 2020 had a strong impact on all aspect of the health system.<sup>1</sup> Under these unprecedented circumstances, special attention must be given to the impact of the pandemic on cancer patients. Cancer patients are fragile and at higher risk of complications due to the underlying disease.<sup>2</sup> Recent findings suggest that they are at higher risk of COVID-19 infection compared to the general population due to several factors such as immunocompromised state and poor functional status.<sup>3</sup> Despite the infective risk, they require effective and timely oncological therapy.

During this pandemic, our big challenge as breast surgeons is to minimize interruption of breast cancer treatment and balance it with patients' risk of infection. Although delays in surgical intervention in early-stage breast cancer of maximum sixty days seems not to be associated with worst prognosis, the big problem of delaying oncological surgery is the unpredictability of the end of the COVID-19 pandemic.<sup>4</sup>

The aim of this report is to describe the measure taken in our surgical department. We also developed a short questionnaire to explore the impacts of COVID-19 on our patients, their perception of the disease and treatment satisfaction.

### *Hospital management reorganization*

At S. Orsola Malpighi Hospital in Bologna, Breast Surgery and Gynecology and Obstetrics Departments were concentrated in a COVID-free pavilion. In the operating theatre, three operating

rooms (OR) were COVID-free and we had one OR dedicated to emergency in COVID-suspicious patients.

Depending on the limited availability of anesthesiologists, ventilators and hospital beds, priority for surgical procedures was given to oncological patients. After discussion with the crisis management team, we selected patients diagnosed with invasive carcinoma or with high-risk breast lesion of uncertain malignant potential and we postponed all elective non-oncological procedures. To reduce the risk of exposure and transmissions of COVID-19 during hospitalization, we adopted several measures following international recommendations and internal health management directives.<sup>5-10</sup>

### *Pre-admission*

Before planning preoperative examination, a standard telephone investigation was conducted to screen patients for:

- travels to high-risk areas in the previous 14 days.
- close contact with COVID-19 patients or with people with a SARS-CoV2 positive swab in the previous 14 days.
- signs and symptoms associated with COVID-19 such as cough, fever (>37,5°C), shortness of breath and anosmia.
- recent attendance in a COVID-19 hospital.

In case of any symptoms or suspicious anamnestic factors, patients were referred to the family doctor to assess the need for a nasopharyngeal swab. For those patients, surgical procedures were postponed until they were screened or tested negative for COVID-19.

As part of routine preoperative investigations, all patients underwent chest radiography and standards laboratory tests. Moreover, all patients were tested for COVID-19 using nasopharyngeal swabs 24 hours before surgery or 48 hours before when

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patients had to undergo pre-operative tumor localization procedures or lymphoscintigraphy. Only patients with a negative result could enter the ward and they were advised to self-isolation until admission.

*During admission*

All patients were educated about the importance of standard risk reducing protocols such as hand hygiene and the use of personal protection equipment (PPE). Every patient received a surgical face mask upon admittance and every patient bed was equipped with a disinfectant dispenser. Social distancing measures were observed, and beds were spaced two meters apart in each room.

All patients reporting symptoms associated with COVID-19 during the hospitalization were promptly isolated in dedicated single rooms until the negative result of the naso-pharyngeal swab came out. According to Ministerial Decree, all visits to admitted patients were interrupted, and patients could only be accompanied outside the ward. With the patient's consent, phone calls were used to update family members after surgery and every afternoon after patient's examination.

All general preventive measures were also followed by all the healthcare workers and naso-pharyngeal swabs were performed biweekly. Standard operating room PPE included hand gloves, surgical goggles, standard protective surgical gown,

**Table 1.** Questions and Answers of the 54 responders

Questions	Answers	%
As an oncological patient do you think to be more vulnerable/at risk to get coronavirus infection?	Definitely Moderately Slightly Not at all	11 33 22 33
During this emergency period due to coronavirus have you been afraid not to receive adequate oncological care?	Definitely Moderately Slightly Not at all	2 17 28 54
During this emergency period due to coronavirus did you feel overlooked by your medical team (surgeon, oncologist...) regarding your oncological disease?	Definitely Moderately Slightly Not at all	0 4 85 11
With respect to the coronavirus emergency did you receive exhaustive information on your hospitalization and post-operative outpatient checks?	Definitely Moderately Slightly Not at all	46 39 9 6
During the lockdown (from March 9th to May 3rd) have you been afraid of getting coronavirus in the hospital setting?	Definitely Moderately Slightly Not at all	9 26 3 26
During phase 2 (since May 4th until now) have you been afraid of getting coronavirus in the hospital setting?	Definitely Moderately Slightly Not at all	4 24 43 30
During the surgical hospitalization did you feel safe from getting coronavirus?	Definitely Moderately Slightly Not at all	37 50 9 4
Did the impossibility of receiving any visits from relatives made your hospitalization harder?	Definitely Moderately Slightly Not at all	19 19 33 30
Did you agree with banning visits in order to limit your own and others risk getting coronavirus?	Definitely Moderately Slightly Not at all	78 15 4 4
Overall are you satisfied with the service provided despite the coronavirus emergency?	Definitely Moderately Slightly Not at all	72 24 4 0



shoe covers and FFP2 mask covered by a surgical mask, due to FFP2 shortage. Surgical goggles were reutilized after cleansing with 70% ethanol solution. The unessential personnel were not allowed to enter the OR. Staff communication and case discussion were conducted through telematic meetings to encourage social distancing and decrease the risk of exposure.

### Questionnaire

For breast cancer patients, in addition to the oncological aspects, importance must be given also to the psychological aspect. With our multidisciplinary team, we developed a qualitative questionnaire using Google Form to investigate the impact of COVID-19 pandemic on our breast cancer patients, their concerns about contracting the virus and about how the virus may affect their treatment. The questionnaire was administered to all the 76 patients treated during the first lockdown at S. Orsola-Malpighi Hospital in Bologna and consisted of 18 questions about sociodemographic data and patients' perceptions of COVID-19 pandemic including specific questions regarding the hospitalization. We decided to contact all patients by phone before sending them the questionnaire to check their health conditions and explain the aim of the survey. The questionnaire was sent by e-mail between May 18th and 22nd and completed anonymously by the patients. All patients responding to the questionnaire gave an informed consent to their involvement in the survey. A total of 54 questionnaires were collected with a response rate of 71%. The main questions and answers are reported in Table 1.

The results emerging from the questionnaire showed that our patients are only moderately aware of their increased risk of infection probably due to their young age and few comorbidities. Although they reported to be afraid of getting COVID-19, risk reducing measures taken made them feel safe during the hospitalization.

None of the patients reported symptoms associated with COVID-19 after dismissing from our department. However, managing oncological elective procedures during COVID-19 pandemic remains a significant challenge for surgeons.

According to our experience, oncological breast surgery can be safely performed in a COVID-19-free pavilion.

Both healthcare workers and patients should carefully be educated on personal hygiene and the correct use of protection equipment, since we can minimize the risk of infection only with collaboration and cooperation between patients and staff. Following COVID-19-free surgical pathways, it was possible not to postpone oncological surgical activity, minimize perioperative viral transmission rates and make patients feel safe during the hospitalization.

### Conflict of Interest

The authors report no proprietary or commercial interest in any concept discussed in this article.

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