

The patient's pathway for breast cancer in the COVID-19 era: An Italian single-center experience

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Abstract

COVID-19 has been declared a pandemic by the World Health Organization. As of April 1, 2020, Italy was the country with the second highest number of cases in the world. The spread of COVID-19 has required a rapid reorganization of health service delivery in face of the pandemic. Breast cancer units have reprioritized their workload to guarantee the health of oncologic patients at the highest risk and regular screening activities. However, at the end of the pandemic emergency, many benign and reconstructive cases will return to our attention and their surgical treatment will be necessary as soon as possible.

KEYWORDS

breast cancer, COVID-19, multi-disciplinary team, patient's pathway

1 | INTRODUCTION

COVID-19 has been declared a pandemic by the World Health Organization (WHO) with 827 419 cases across 206 countries worldwide and 40.777 deaths as of April 1, 2020.¹ After the first outbreak in the Chinese province of Wuhan, Italy was the second most affected country with 102 669 cases (10.007 among health workers) and 11 875 deaths.² The virus spread was very rapid and, the Italian government ordered the national lockdown on March 10, 2020. As a consequence, a substantial reorganization of the Italian National and Regional Healthcare Services was implemented in order to reallocate resources and operators to face the virus emergency, while continuing to guarantee treatments of emergencies and chronic and oncologic patients. Indeed, breast cancer units are working to take care of the health of oncologic breast patients and to assure the regular provision of screening activities.

The aim of this short communication was to report our experience with the management of breast cancer in the COVID-19 era in order to share our experience and provide information useful to develop possible organization model in countries that are facing this health emergency.

2 | SCREENING AND DIAGNOSTIC ACTIVITIES

Breast cancer screening and diagnosis are done by breast radiologists in compliance with the European Society of Breast Cancer Specialists (EUSOMA) guidelines.³ While screenings have been suspended, the activities of diagnosis for women with breast symptoms have been maintained active during the COVID-19 emergency, with a reorganization of spaces and schedules in order to minimize the flow of patients to the breast radiology services. Despite such precautionary approach aimed at preserving care of patients at the highest care need, we are witnessing a marked decrease in the number of first diagnosis of breast cancers and an increase in patients' withdrawals due to fear of hospital contagion.

3 | MULTI-DISCIPLINARY TEAM (MDT) MEETINGS

In all cases of newly diagnosed breast cancer, a member of the MDT, usually the radiologist who did the diagnosis, conducted a first clinical examination of patients. As indicated by the EUSOMA³

guidelines, the MDT meets once a week: This activity replaces face-to-face meetings with telematic conferences in order to preserve the health of the MDT components. The regular implementation of this new way of working appears to have no negative impact on the quality of work, guaranteeing greater serenity for the MDT meeting components.

4 | SURGICAL MANAGEMENT

After a surgical decision has been made by the MDT, the surgeon who is in charge of the case discusses with the patient the treatment plan. After the spread of COVID-19 and the quarantine measures were put in place, we organized a telematic outpatient consult. The Web-based consultations allow surgeons to readily share with patients the information about treatment and all the imaging examinations. This is possible through the integrated picture archiving and communication system, with concurrent examination of the anatomy and the shape of the patient's breast.

This approach has so far given good results, even though in a minority of cases where the first clinical evaluation was not conducted by a surgeon, a change in surgical plan was necessary at hospitalization. The presence of plastic surgery skills and of a plastic surgeon in our surgical teams has allowed us to face such modifications of the surgical planning without delays in treatment.

In order to protect the patient's privacy, we have organized a space dedicated to the telematic consultations and the informatic service has provided a secure, private connection, following the Italian and European law on privacy protection.

For patients presenting a high grade of psychologic distress, the telematic consultations can be done by the breast cancer MDT psycho-oncologist to offer psychologic counseling and emotional support.

Preoperative assessment of breast cancer patients includes an evaluation of the anesthesiologic risk. With the COVID-19 emergency, the anesthesiologist has become the most important operators in relation to the massive occupation of intensive care units. As a consequence, the majority of the anesthesiologists are employed in the subintensive and intensive units and the other activities have been reduced. Before February 22, 2020, the breast surgery service provided three preoperative evaluations per day, usually including patients in the C priority class according to the American Society of Breast Surgeons triaging recommendations⁴ (eg, time of reconstruction, lipofilling, benign pathologies). After that date, only two patients per day have undergone anesthesiologic evaluation and these spaces are reserved for patient in priority class A class B and only some cases in class C1, including cases of borderline classification as ER+-DCIS or patient with active tumoral lesion.⁴ This modified organization has resulted in a delay between the time of diagnosis and the first surgical treatment.

The need to separate the COVID-19 patients from the other patients has changed the hospital structural organization. Our hospital has been divided into two major blocks. The COVID-19 block

includes an intensive care unit, a new para-intensive department, an imaging service, a surgical theater, and a section for the mild cases. The ordinary block is for oncologic COVID-19-negative patients and includes the surgical oncology units.

Patients scheduled for breast surgery are screened with a pre-admission oropharyngeal swab to test for COVID-19 with polymerase chain reaction tests. This test is made the day before surgery, and a dedicated new structure outside the main building has been created, where patients wait for the result in separate rooms. Only patients who tested negative for COVID-19 are admitted to the ordinary block for surgical treatment.

In the first phase, no specific guidelines for surgery-related risk situations, such as patient's expectorate production during intubation and prolonged contact with fluid, were issued. Nonetheless, following the Italian Superior Institute of Health (ISS) guidelines for health workers, our surgical breast unit reduced the number of the components of the scrub team, dressed FFP3 masks or powered air-purifying respirators, and used waterproof body dressings and shoes, eye protections, and two pair of surgical gloves.⁵

The organization of work of the surgical breast unit has also changed after the emergency of COVID-19. Our surgical sessions were reduced from four to two days a week. All nonurgent, non-cancer procedures have been suspended. Lesions with the worst prognoses have been operated before lesions with uncertain malignant potential. This decision, adopted due to the necessity to reallocate resources and health workers to face the virus emergency, and to minimize the circulation of people and the consequent spread of virus, has extended the length of time between first diagnosis and surgery. Before the emergency, our unit respected the standard the time of 30 days from diagnosis to surgery for breast cancer, as required by the EUSOMA³ guidelines, with an average of 22 days per patient. Nowadays, the median waiting time is 40 days.

Before the COVID-19 emergency, the immunohistochemical assessment on core biopsies was conducted only after a MDT evaluation on candidates to neo-adjuvant therapy on the basis of clinical characteristics. Our breast cancer unit has changed this policy, performing routinely an immunohistochemical evaluation in women aged less than 45 years old or more than 80 years old. On such basis, we have extended the indications to neo-adjuvant therapy, particularly for younger than 45-year-old patients with HER2+ or triple-negative cancers and for older women with ER+ lesions, prioritizing the biologic features of the lesion to the T N stage in the treatment choice.

Due to the complete interruption of surgeries for benign lesions and secondary reconstructive procedures, the waiting times for candidates to these procedures are now longer. According to national indications, in the C2 and C3 priority classes the waiting time should be limited to a maximum of 90 days. In the pre-COVID-19 era, the waiting time at our breast unit reached a median of 200 days because our surgical unit is located in a high volume, referral center. In the current situation, the median waiting time for the C2 and C3 classes of breast surgery has increased

to 240 days and with the prolongation of the emergency state it is expected to increase further.

The surgical team composition has also changed. Our unit includes three senior surgeons and three residents and is now divided into three single teams, which never come into physical contact in order to reduce the risk of contagion.

The surgical postoperative follow-up is affected by the restrictions applying to all hospital activities. The outpatient clinic of the breast surgical unit has been reduced from 6 to 3 days per week. The appointment time table has been organized balancing the timing of surgical consult and medication to avoid patient overlapping, and spaces have been made available to guarantee the distances between persons as indicated by the WHO⁶ and ISS.² Furthermore, the hospital has organized checkpoints at any hospital entrance for measuring the body temperature of staff and hospital users, and has extensively distributed alcohol-based gel for hand cleaning. All the appointments previously scheduled have been revised, re-allocating all postoperative uneventful late follow-ups to telematic consultations. Furthermore, to minimize the number of early postoperative accesses to the outpatient clinic, we have extended the application of negative pressure wounding dressings (eg, PICO, Smith & Nephew, London, UK) in higher-level oncologic procedures, for the prevention of wound complications and reduction in time of cicatrization.⁷⁻⁹ Before the pandemic, we were conducting a clinical study on the application of this wound dressing and their possible advantages in the management of wound cicatrization. In February 2020, we analyzed the partial data in our possession which indicated that this practice leads to better cicatrization outcomes and fewer accesses to clinic. For this reason, we have decided to adopt these dressing systems by default.

The increase in waiting times for secondary reconstructive surgery has prompted us to carry out immediate postmastectomy reconstructions. When suitable, we now prioritize direct to implant procedures in relation to the viability and perfusion of the mastectomy flaps and favor prepectoral tissue-expander implant in the other cases.¹⁰⁻¹³ When the patient refuses the prosthetic reconstruction, we use autologous latissimus dorsi flaps and we have continued to carry out autologous reconstructions because their use does not require access to intensive care units or significantly prolonged hospital stay. In fact, free flap microsurgical reconstructions were avoided in order to not impact on organization of surgical sessions and to not burden on intensive care units.

5 | CONSIDERATIONS

The spread of the COVID-19 infection has changed our habits and made necessary a rapid reorganization of health services to deal with the pandemic. Although the efforts of the entire health system are currently aimed to face the current viral emergency, cancer diseases continue to cause the death of thousands of people. It is clear that our efforts must be directed to protect the population from the virus by treating positive cases, while also guaranteeing life-saving

treatments to patients suffering from chronic and tumor pathologies. The latter will be essential in order to limit, as much as possible, the increase in waiting times and to avoid exposing fragile patients to unnecessary infectious risks.

The surgery selection criteria which prioritize the treatment of malignant breast lesions at immediate risk of life are leading to an accumulation of lesions included in B3 and C1 priority classes with a prolongation of their waiting times. With particular regard to this group of patients, as the positive predictive value for malignancy of lesions of uncertain malignant potential varies from 6 to 32%, according to different histotypes, this delay may compromise the prognosis of these patients.¹⁴

Moreover, in case of a second outbreak of pandemic this new patient's pathway can help the hospital to guarantee the higher level of care and the safest method to treat breast oncologic patients with a minimum risk of contagion.

At the end of the pandemic emergency, many benign and reconstructive cases will return to our attention. While their surgical treatment will be necessary as soon as possible, this will inevitably impose further stress on the hospital staff who is affected by the burden of the COVID-19 pandemic.

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