Brief Report

New safer management for breast cancer patients who need neoadjuvant therapy during SARS-COVID pandemic

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Abstract. During the first hit of SARS-COVID pandemic, an important reorganization of Healthcare Services has been done, and new protocols and pathways to protect frail patients like oncological patients were designed. The second hit of pandemic had stressed these new pathways and suggests to health-workers some improvements for safer management of patents. We reported our experience in organizing the clinical pathway of neoadjuvant therapy candidate patients based on the execution of sentinel lymph-node biopsy and the placement of implantable venous access port in the same access to operating room before neoadjuvant chemotherapy suggesting a possible organizational model. In the period October–December 2020 we have included in this new type of path twelve patients and we have not registered any cases of COVID among the patients included. We think this new path, adopted amid the second hit, will be useful for all Breast Units that are facing the challenge of guaranteeing the highest standards of care in a historical moment where the health emergency occupies the efforts of health workers and the economic resources of health systems.

Keywords: Breast cancer, COVID-19, patient’s pathway, neoadjuvant therapy

1. Introduction

The SARS-COVID pandemic after the first outbreak in Wuhan and China has spread all the world with 61,036,793 confirmed cases, including 1,433,316 deaths as reported by the World Health Organisation (WHO)\textsuperscript{[1]}. Europe was affected by a first hit at the beginning of pandemic between March and May 2020 and now all the continent is burdened by a second hit, with the disposition by each national government of national or local curfew or lockdown. Italy has 1,502,568 confirmed cases, including 51,114 deaths\textsuperscript{[2]}.

During the first hit, an important reorganization of the Italian National Healthcare Services has been done, and new protocols and pathways to protect frail patients as oncological patients were designed\textsuperscript{[3,4]}. The second hit of pandemic had stressed these new pathways and suggest to health-workers some improvements for safer management of patents. This paper want illustrates how our Breast Unit had changed the hospital management of patients with breast cancer that undergo to neoadjuvant therapy before surgery.

2. Indication, staging and IVAP placement

Although originally developed for patients with advanced breast cancer, neoadjuvant chemotherapy (NACT) is now frequently administered to patients with operable tumors in an attempt to improve cosmetic outcomes and surgical sequelae. The main indications, as reported by AIOM\textsuperscript{[5]} and NCCN\textsuperscript{[6]} guidelines
are: locally advanced breast cancer (stage IIB-IIIC [7]);
early breast cancer (stage I A or I IA [7]) in cases
where conservative surgery is not initially feasible
due to, for example, a high breast cancer ratio or an
expected suboptimal aesthetic outcome for a particular
tumor location; patients with triple-negative carcinoma
(TNBC) or HER2 + as they are particularly sensitive to
therapies.

Furthermore, during first hit our breast cancer unit
has adopted the routinely perform of immunohisto-
chemical evaluation in women aged less than 45 years
old or more than 80 years old extending the indications
to NACT, particularly for younger than 45-year-old
patients with HER2+ or triple-negative cancers and for
older women with ER+ lesions, in order to guarantee
delayed access to clinic and reducing waiting time for
surgery. For the same reason we had standardize the
execution of sentinel lymph node biopsy (SLNB) in
clinical negative axillary patient before the NACT
[8–11]: this choice leads us to have a study of the axilla
not affected by therapy, accurate staging of the tumor
and a saving of time in planning the radical oncological
intervention due to a more precise surgical plan.

The administration of NACT through peripheral
vein is a high-risk procedure for the severe effects
in cases of extravasation of drugs, the consequent
pain and psychological trauma [12]. For these reasons
implantable venous access port (IVAP) with long-term
central venous catheters (CVC) are commonly used in
BC patients undergoing chemotherapy [13] and internal
jugular vein or axillary vein/subclavian vein are
commonly used for implantation.

The placement of the IVAP is an invasive procedure
that is commonly performed with sedation and local
anesthesia in an operating room: the outbreak of the
pandemic has led us, intending to reduce access of can-

Before pandemic we were led to organize at the
time of diagnosis two distinct surgical paths, one for
the immediate execution of the pre-NACT SLNB and
only later in an outpatient regime the positioning of the
IVAP with adjoining radiological correct placement,
now taking full advantage of the possibilities of the
operating room we perform in day surgery, with general
anesthesia of minimum duration (about 45 minutes)
both SLNB and implant of the IVAP and the immediate
radiological control of the correct placement. This new
combined approach to the patient allowed us during the
pandemic to reduce the number of surgical procedures
and consequently the number of hospital admissions
from a minimum of three (SLNB, IVAP positioning and
definitive surgery) to only two admissions, in patients
anyway, screened for COVID-19 infection by nasopha-
ryngeal swab performed no more than 48 hours before
admission to hospital.

Candidate patients to enter this path are patients over
18 years of age, not pregnant, with breast cancer with
the characteristics previously reported as optimal for
performing a NACT, who accept entry into this type
of therapeutic procedure and IVAP implantation.

In the period October–December 2020 we have
included in this new type of path twelve patients of
which 9 of the major stage of the IIB and three of
the minor stage of the IIA, and among these only one
patient (8.3%) interrupted the NACT for feedback to
the exams. disease progression with subsequent deci-
sion by the MDT to send the patient for demolition
surgery and subsequent adjuvant chemotherapy. The
remaining eleven patients were all brought to surgery
at the end of the NACT with restaging using Magnetic
Resonance to adequately re-stage both the T and N
parameters. There were ten sent to NACT at our center,
but among these patients with advanced breast cancer
appear to have been in a lower percentage than in 2020,
probably due to diagnostic delays due to the outbreak
of the first wave of the pandemic.

At the end of this first period during the second wave,
having noted an effective reduction in hospital admis-
sions and having not registered any cases of COVID
among the patients included in this path, we decided to
adopt it by default in patients with MDT indication to
be systematically treated. To date, concomitant also
the start of the COVID-19 vaccination campaign and the
lock-down measures, none of our patients undergoing
NACT in our third level center have been found to
be positive for COVID-19 following the diagnosis of
breast cancer.
3. Conclusion

We reported our experience in organizing the clinical pathway of NACT candidate patients to suggest a possible organizational model aimed at avoiding unnecessary access to hospitals, burdened by the effort to deal with the pandemic, amalgamating different services for a subgroup of patients defined as fragile and avoiding occasions of contagion. We think this new path, adopted amid the second hit, will be useful for all Breast Units that are facing the challenge of guaranteeing the highest standards of care in a historical moment where the health emergency occupies the efforts of health workers and the economic resources of health systems.

Ethics approval

Ethical approval was not required.

Conflict of interest statement

The authors have no competing interest to disclose.

Funding sources

This research received no specific grant from any funding agency in the public, commercial or not for-profit sectors.

References