The Impact of Covid-19 Pandemic on Breast and Thyroid Cancer Surgery: An Advantage or Disadvantage Factor?

Hermin Aminah Usman*, Fauzan Ali Zainal Abidin, Akbar Maulana
Department of Anatomical Pathology, Faculty of Medicine, Padjadjaran University, Bandung, Indonesia

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ABSTRACT

Background: Breast cancer (BC) and thyroid cancer (TC) are the types of cancer mostly treated at the Surgical Oncology Department with 24.1% and 6.8%, respectively, of all malignancies at Dr. Hasan Sadikin General Hospital. The delay in managing patients for both types of cancer will increase the risk of cancer stage progression. This study was conducted to determine the Covid-19 pandemic’s impact on delayed surgery due to longer waiting times in BC and TC patients.

Methods: This research is a descriptive study. The data were collected from BC and TC patients who received surgery in the Surgical Oncology Department from April to June 2020 at Dr. Hasan Sadikin General Hospital. These data include the time of surgery, gender, age, stage of the disease, chemotherapy history, management, time from diagnosis until surgery, last time receiving neoadjuvant chemotherapy until surgery, and time of surgery on schedule.

Results: Thirty-seven patients had undergone surgery; the stages of BC and TC patients were IIIB (66.6%) and II (50.0%), respectively. There were 31 BC patients (93.9%) who received neoadjuvant chemotherapy and underwent surgery, and total thyroidectomy with dissection was performed in 75% of TC patients. Operative procedures that were performed earlier than the schedule have been done in 20 (60.6%) and three patients (75.0%) for BC and TC patients, respectively, while 2 (0.6%) of BC patients were delayed in their management and no patient experienced a delay in management on TC.

Conclusions: The management of BC and TC patients with various stages has received operation procedures faster than the previously determined schedule in the period from April to June 2020. These results also suggest a possible advantage for cancer patients requiring surgery, particularly patients with advanced BC who have received neoadjuvant chemotherapy. In certain conditions, it turns out that a pandemic may positively impact, especially in the management surgery of breast and thyroid cancer patients. However, limited time at the early start of the pandemic may change these conclusions.

INTRODUCTION

Covid-19 is an infectious disease caused by the coronavirus. The virus that attacks the respiratory system is more comfortable to cause infection in people with weak immune systems, one of whom is cancer patients. Cancer is a chronic disease that has a high risk of causing severe complications due to Covid-19, in addition to heart and blood vessel disease, diabetes, and chronic respiratory disease [1].

Until now, there is no specific therapy in the treatment of Covid-19. Various research and vaccine developments are currently not proven to be able to fight Covid-19. The management of supportive therapy depends on the patient’s clinical condition, such as oxygen therapy, hydration, fever/pain management, and antibiotic administration if there is bacterial co-infection [2].

In the development of the Covid-19 outbreak, Dr. Hasan Sadikin General Hospital has become a referral hospital for Covid-19. This hospital has created and implemented policies to prevent the occurrence of Covid-19 transmission in the hospital environment. This policy is emphasized to reduce population density in services and health care for patients in referral hospitals. In its application, this hospital has converted several inpatient buildings into isolation rooms for Covid-19 patients. Therefore, a hospital policy is not to accept new patients except for emergency patients or those with life-threatening conditions. The hospital also has a policy on cancer patient care, in this case, the surgery schedule. This condition positively affects the management of cancer patients, one of which is surgery.

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Department with 24.1% and 6.8%, respectively, of all malignancies at Dr. Hasan Sadikin General Hospital, Bandung. In other departments, several malignancies consist of cervical cancer (15.4%), ovarian cancer (9.4%), leukemia (9.4%), malignant neoplasm of liver and intrahepatic bile duct (5.6%), nasopharynx carcinoma (8%), colon carcinoma (6.3%), lung carcinoma (6.6%), and malignant lymphoma (6.9%) [3].

Continuing or stopping therapy for cancer patients is still a discussion. The risk of developing cancer after discontinuing therapy also remains a matter of controversy among clinicians. The option of suspending surgical therapy during the Covid-19 pandemic in cancer patients with early stages can be an option during a pandemic [4]. The American Cancer Society has made recommendations that can help clinicians resolve ethical dilemmas affecting the inability of health care providers to services in this pandemic situation. These recommendations make oncologists have to determine the right time to perform diagnostic procedures, elective surgical therapy, or immediate emergency action and patient follow-up [5].

The recent updates on Covid-19 and cancer patients, including information on self-protection, treatment continuation, risk of procedures, and critical measures to provide optimal care for cancer patients, have been highlighted on the online pages of the European Society of Medical Oncology (ESMO) [6].

The postponement of the surgery schedule that occurred due to the Covid-19 pandemic was one of the challenges in managing cancer patients. An increase in tumor size, lymph node metastases, and distant metastases is thought to occur during the operation's delay. The level of difficulty of surgery and complications can increase due to the delay in the operation. This condition will undoubtedly affect the prognosis of cancer patients at various stages. This study was conducted to determine the pandemic’s impact on delayed surgery due to longer waiting times in BC and TC patients.

**METHODS**

This research is a descriptive study. This study’s population was patients with breast cancer and thyroid cancer at various stages who had definitive surgery performed in Surgical Oncology Department, and the specimens were received by the Anatomical Pathology Department for histopathological examination from April to June 2020 at Dr. Hasan Sadikin Hospital.

The number of samples collected was 37 people. The number of samples is based on the total population of breast cancer and thyroid cancer surgery. Researchers assume that this period represents the pandemic’s culmination’s impact on cancer patients receiving hospital services.

Furthermore, the search and retrieval of patient data were carried out in the Anatomic Pathology Department’s online data archive. The surgery plan schedule and the final operation schedule were also collected from the oncology outpatient clinic to look for patients who had delayed surgery. Delayed surgery here is defined as surgery that goes beyond the previously planned surgery schedule.

After all the data had been collected, confirmation was made to the patient or the patient’s family regarding the identity, history of cancer, the treatment received, and the suitability of the surgery schedule. The confirmation to the patient or the patient’s family was done via cellular phone. It was done to cross-check the results of the data collected.

Ethical Committee conducted the ethical test, and this study was declared ethical with certificate number LB.02.01/X.6.5/262/2020. Researchers have described the research objectives, benefits, procedures, risks, and confidentiality as ethical needs in research.

**RESULT**

Based on Table 1, it was found that many operations were carried out in April (18 operations or 54.5%), in May (18 operations or 54.5%), and in June (9 operations or 27.2%). The patients based on gender from the total cases consisted of 35 women and two men. Thirty-three breast cancer patients aged 26–66 years consisted of various stages, two patients with stage-IIA (6.0%), two patients with stage-IIIB (6.0%), three patients with stage-IIIA (9.0%), twenty-two stage-IIIB patients (66.6%), and four stage-IV patients (12.1%). There were four thyroid cancer patients aged 11–48 years with one stage-I patient (25.0%), two stage-II patients (50.0%), and one stage-III patient (25.0%).

A total of 31 breast cancer patients (93.9%) received neoadjuvant chemotherapy, one patient (0.3%) did not receive neoadjuvant chemotherapy, and one patient (0.3%) had no data on medical records and could not be confirmed by cell phone. All thyroid cancer patients did not receive neoadjuvant chemotherapy.

The most types of surgery performed on breast cancer patients were simple mastectomy with 22 (66.0%) cases in total, followed by simple mastectomy + resection of the pectoralis major muscles in 8 cases (24.0%) and modified radical mastectomy in 3 cases (9.0%). The most type of surgery in patients with thyroid cancer was total thyroidectomy with radical neck dissection in 3 cases (75.0%).

The longest waiting time for breast cancer patients from diagnosis to surgery was 18 months, while it was eight months for thyroid cancer. One breast cancer
patient received surgery with a waiting time of 1 month after neoadjuvant chemotherapy, and the longest waiting time was ten months.

The number of breast cancer patients who underwent surgery earlier than the determined schedule was 20 people (60.6%), according to the schedule 5 people (15.1%), delayed two people (0.6%), and with no records and that could not be confirmed via cellular phone six people (18.1%). The number of thyroid cancer patients who underwent earlier surgery was 3 (75.0%) and, according to the schedule, was one person (25.0%).

Table 1. Clinical characteristic

| Criteria                  | Breast Cancer N (%) | Thyroid Cancer N (%) |
|---------------------------|---------------------|----------------------|
| Total                     | 33 (100%)           | 4 (100%)             |
| **Time of surgery**       |                     |                      |
| April                     | 18 (54.5%)          | 1 (25.0%)            |
| May                       | 6 (18.1%)           | 2 (50.0%)            |
| June                      | 9 (27.2%)           | 1 (25.0%)            |
| **Gender**                |                     |                      |
| Male                      | 0                   | 2 (50.0%)            |
| Female                    | 33 (100%)           | 2 (50.0%)            |
| **Age (median, range in years)** | 47 (36-65)    | 33 (18-80)         |
| **Stage**                 |                     |                      |
| Stage IIA                 | 2 (6.0%)            | Stage I              | 1 (25.0%) |
| Stage IIB                 | 2 (6.0%)            | Stage II             | 2 (50.0%) |
| Stage IIIA                | 3 (9.0%)            | Stage IIIB           | 1 (25.0%) |
| Stage IIIB                | 22 (66.6%)          |                     |          |
| Stage IV                  | 4 (12.1%)           |                     |          |
| **Chemotherapy history**  |                     |                      |
| Neoadjuvant               | 31 (93.9%)          | N/A                  |
| None                      | 1 (0.3%)            | N/A                  |
| No Data                   | 1 (0.3%)            | N/A                  |
| **Management**            |                     |                      |
| Simple mastectomy         | 22 (66.0%)          | Total thyroidectomy  | 1 (25.0%) |
| Simple mastectomy with M. Pectoralis | 8 (24.0%) | | |
| Major resection           |                     |                     |          |
| Modified radical mastectomy | 3 (0.9%)   | Total thyroidectomy + radical neck dissection | 3 (75.0%) |
| **Time from diagnosed until surgery** (median, range in months) | 9.18 (1-18) | 6.25 (2-8) |
| **Last time receiving neoadjuvant chemotherapy until the surgery** (median, range in months) | 2.69 (1-10) | N/A |
| **Time of surgery on schedule patient** |                     |                      |
| Faster                    | 20 (60.6%)          | 3 (75.0%)            |
| On schedule               | 5 (15.1%)           | 1 (25.0%)            |
| Delayed                   | 2 (0.6%)            | 0                    |
| No Data                   | 6 (18.1%)           | 0                    |

N/A: Not Applicable
DISCUSSION

The government’s appeal through the information media to stay at home is an option to prevent the spread of the Covid-19 virus and related information [7]. This information makes many cancer patients scared, especially those at an early stage who are more likely to be absent from health facilities and suspend the surgical schedule until this pandemic ends. Cancer patients indicate poor outcomes due to Covid-19 infection; it has been reported that cancer patients with a median age (63.1 years) be significantly increased compared to the poor outcomes [8].

The government’s focus on treating patients, preventing, and suppressing the spread of the Covid-19 outbreak makes the need for human resources and medical materials more significant. The prevention will reduce the number of clinical resources to care for patients with other diseases, including cancer.

Another condition in the field today is the risk of cancer patients’ inability to receive the necessary medical services at a referral hospital. The existence of central to regional government policies in implementing regulations to prevent the spread of the Covid-19 virus is a factor that affects this situation. Especially for cancer patients who live outside the city who need public transportation as access, it will be challenging to reach referral hospitals. Thus, in this case, cancer patients who live in the same area as the referral hospital will have a greater chance of getting surgery therapy that has been planned due to the inability of patients from the outer region to attend the referral hospital on schedule, with the policy that the hospital does not accept new patients so that the queue of patients to be operated on is less than the patients from the same area. This condition may have a positive impact on some patients during this pandemic.

The referral hospital’s role in issuing policies to provide better protection for patients, especially cancer patient’s online medical counseling, is applied, and the patient identification is in accordance with their needs in the treatment of critical and emergency cases. These counseling services can be in the form of telephone calls or online appointments, especially for routine check-ups and writing a repeat prescription every month. This application should reduce the overload in services and health care for patients visiting referral hospitals. It can help reduce exposure and make efficient use of clinical resources.

Jazieh et al. [9] revealed that the overwhelming majority (88.0%) of the 356 participating centers on six continents faced challenges in providing usual cancer care for many reasons, including precautionary measures, an overwhelmed health care system, lack of personal protective equipment, and staff shortage. The implementation of virtual communication and remote care were prevalent responses in most centers [9].

The Covid-19 pandemic directly leads to significant changes in hospital services. Therefore, the main thing that must be done is to provide education to patients in determining a management plan that can be carried out next, following the conclusions of the case report submitted by Adiputra [10].

Guiding principles to help clinicians and health care institutions in the decision-making process about resource allocation during the Covid-19 outbreak have also been established by the American College of Surgeons (ACS) committee. These recommendations can help resolve ethical dilemmas affecting health status and healthcare providers’ inability to provide services [5].

The European Society of Medical Oncology (ESMO) has developed its online page on clinical resources to highlight all the clinical problems associated with Covid-19 and cancer. ESMO clinical resources can provide appropriate recommendations for clinicians based on the latest updates on Covid-19 and cancer patients, including information on self-protection, the continuation of treatment, risks of procedures, and critical measures to provide optimal cancer patients care [6].

In his paper on cancer surgery during the Covid-19 pandemic, Sudarsa [11] has summarized several considerations for the action of surgical cases in patients who have confirmed positive for Covid-19 with a progressive risk of cancer treatment. The summary is divided into three categories; Low (safe to delay > 3 months) such as skin cancer non-melanoma, Intermediate (delay, or = 3 months) such as stage-IA2 cervical cancer, and High (ideal, no delay) such as ovarian mass suspected of malignancy.

The reduction in the number of operational services is a dilemma and becomes a negative impact during the Covid-19 outbreak. The surgery should be more selective according to the assessment by the clinician of different patients. The choice to prioritize cancer patients who have undergone previous neoadjuvant chemotherapy or radiotherapy processes that aim to reduce tumor size and reduce the risk of surgical complications is a policy that is implemented in daily services in the surgical oncology section of Dr. Hasan Sadikin Hospital. The postponement of surgery in cancer patients with an early and non-urgent stage is an alternative option. Routine control can be done through virtual or in-person medical meetings according to a determined schedule.

This study’s limitation is that the authors cannot see medical records directly in detail and can only access them through online registration data. Besides, the limited period of only three months still cannot provide a conclusion that a pandemic has yet to have a direct impact on the acceleration of surgery.
CONCLUSIONS

These results indicate that in the management of BC and TC patients with various stages, they have received operation procedures faster than the previously determined schedule from April to June 2020. These results also suggest a possible advantage for cancer patients requiring surgery, particularly patients with advanced BC who have received neoadjuvant chemotherapy. In certain conditions, it turns out that a pandemic may positively impact, especially the management surgery of breast and thyroid cancer patients. However, three months at the early start of the pandemic may change these conclusions with a limited time.

DECLARATIONS

Competing of Interest
The authors declare no competing interest in this study.

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