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Case Report

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Curative breast cancer surgery with local anesthesia

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Abstract

Breast cancer has become an important health problem affecting mostly women, and its incidence is increasing. It is treated with a multidisciplinary approach involving medical oncology, radiation oncology and surgical oncology. Surgical removal of the tumor is the most important step in its treatment. General anesthesia used during surgery carries significant risks in patient groups with advanced age and comorbidities. In addition, treatment options such as chemotherapy and radiotherapy other than surgery may have significant side effects in these patient groups. Therefore, surgery plays an important role in the treatment of patients. Surgery with local anesthesia is a suitable alternative to general anesthesia in patients with early stage breast cancer because it carries less risk. Invasive Ductal Carcinoma was diagnosed in a 64-year-old female who presented with a mass in the right breast. In the anesthesia examination, she was evaluated as an ASA 3 because of her comorbidities and age. We present our patient with high comorbidity and advanced age who underwent curative cancer surgery using only local anesthesia.

Keywords: breast cancer, local anesthesia, breast-conserving surgery, radiotherapy

1. Introduction

In women, apart from skin cancers, cancer of the breast is the most common malignant disease and also the second most common cause of cancer-related death (1–3). While the surgical treatment of breast cancer was aggressively applied as radical mastectomy at the beginning of the 20th century, today it has evolved into a more conservative and minimally invasive surgery in the form of breast-conserving surgery (BCS). With the addition of radiotherapy, BCS has achieved similar survival rates to mastectomy and has replaced mastectomy, especially in early-stage breast cancer (ESBC) (4–6). BCS has an increased risk of mortality and morbidity due to anesthesia, especially for elderly patients and patients with comorbidities, as it is mostly performed under general anesthesia. In this study, we aimed to present a breast cancer patient who was considered to be at high risk in terms of anesthesia and therefore underwent curative surgery using only local anesthesia.

2. Case Presentation

A 64-year-old female patient was admitted to our clinic due to a right breast mass. Written informed consent was obtained from the patient for the publication of the case report. The patient's medical and surgical history had mitral valve replacement and total thyroidectomy surgeries, atrial fibrillation, diabetes mellitus, hyperlipidemia, and primary hypertension. On physical examination, an irregular mass was palpated in the outer middle quadrant of the right breast. No pathological lesion was palpated in the left breast and both axillae. On mammography and breast ultrasonography, the mass was interpreted as a 14x9 mm lesion with irregular borders and a thick echogenic capsule in breast imaging reporting and data system classification (BIRADS) 4. A tru-cut biopsy of the mass resulted in an invasive breast carcinoma. Surgery was planned for the patient whose whole body positron emission tomography did not reveal any findings suggestive of metastasis. Due to comorbidities, the patient was considered high risk by the American Society of Anesthesiologists (ASA) 3 in the anesthesia examination. Therefore, the patient's surgery was performed using 2% Prilocaine, a local anesthetic. No inhaler or intravenous anesthetic was used. Prilocaine was injected into the area where the incision was made for the sentinel lymph node biopsy (SLNB) after methylene blue injection to the subareolar region and 8 minutes of massage. A Sentinel lymph node was found and sent to the frozen section. Following prilocaine injection on and around the mass, the tumor was removed by obtaining a macroscopic clean margin and sent to frozen. As a result of the frozen section, the pathology reported that the closest surgical margin was 1,5 cm and no metastasis was observed in the sentinel lymph node. On the first postoperative

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day, we discharged the patient, and she had no postoperative complications. In the pathological examination of the specimen, a tumor with the morphology of an Invasive Ductal Carcinoma (grade III/ III, Modified Bloom Richardson) with the largest diameter of 1,5 cm was detected. In the immunohistochemical examination, it was revealed that estrogen receptor (ER): 100% positive, progesterone receptor (PR): 60% positive, Cerb B2: negative, and Ki-67: 40-50%. No recurrence or metastasis was detected in the 3-year follow-up of the patient who received adjuvant radiotherapy and hormonal therapy in the postoperative period.

3. Discussion

Breast cancer is an important health problem with an increasing incidence. A multidisciplinary approach is needed for surgery, which is the most important step in the treatment. Surgery is mostly performed under general anesthesia. In addition, regional or local anesthesia can be applied to patients who are at high risk of general anesthesia due to advanced age or additional diseases. Among these techniques, various epidural anesthesia and nerve blocks are used.

Surya et al. (7) presented five patients who underwent mastectomy and axillary dissection with a combination of more than one anesthesia techniques which were brachial plexus block, supraclavicular nerve block, and finally thoracic epidural anesthesia. All of these patients had diabetes mellitus and hypertension and two patients had coronary artery disease.

Colak and Alici (8) performed a modified radical mastectomy under sedation and local anesthesia on a patient with advanced-stage who was evaluated as ASA IV as a result of anesthesia examination.

Chongshan et al. (9) found that there was no relationship between the type of anesthesia and the prognosis of the disease in breast cancer patients operated under local anesthesia and general anesthesia. And local anesthesia was found to be more advantageous in terms of cost.

Hirokawa et al. (10) operated ESBC patients under general and local anesthesia and showed that there was no difference in terms of oncological outcomes due to the type of anesthesia. Axillary dissection was performed in a second session under general anesthesia after a positive sentinel lymph node was detected in a patient who was operated on under local anesthesia, and they emphasized this as one of the disadvantages of local anesthesia. In addition, they found local anesthesia advantageous in terms of hospital stays and cost.

It is known that in the process from the past to the present, minimally invasive methods have taken the place of radical methods in breast cancer surgery. BCS with SLNB have become routine procedures, especially in the treatment of ESBC. Even if the SLNB is positive, there are randomized controlled studies showing that the disease is well controlled with adjuvant treatment without axillary dissection (11). It has not been shown that there is an oncological disadvantage in patients who were operated on without using general anesthesia (10). In our opinion, this shows that local and regional anesthesia techniques can be used instead of general anesthesia.

In conclusion, it should be kept in mind that curative breast cancer surgery can be performed under local anesthesia to avoid the risks of general anesthesia in patients with advanced age and comorbidities.

Conflict of interest

The authors declare that they have no conflict of interest.

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Authors' contributions

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