Modified Radical Mastectomy under Local Anesthesia in High-Risk Male Breast Cancer

Elif Çolak[1], Ömer Alıcı[2]
[1]Department of General Surgery, Samsun Training and Research Medicine, Samsun, Turkey
[2]Department of Pathology, Samsun Training and Research Hospital, Samsun, Turkey

ABSTRACT

Carcinoma of the male breast is responsible for less than 1% of all malignancies in men, but the prognosis is poor. Being diagnosed at an older age and advanced stage both affect the prognosis. Surgical treatment of elderly patients with co-morbid diseases is challenging. Unfortunately, these patients do not receive chemotherapy due to poor overall status. Mastectomy with local anesthesia may be an option for these patients. We aimed to present an elderly male patient who underwent successful mastectomy and axillary dissection under local anesthesia.

Keywords: Breast cancer, mastectomy, local anesthesia

Introduction

Breast cancer is the most common type of cancer in women, while constituting less than 1% of all malignances in men (1). Its incidence is 1 in 100,000 men (2). Male patients are diagnosed at advanced stages and at an older age than women (2-5). Surgery and chemotherapy can result in serious problems in elderly patients with co-morbid diseases. Herein we presented a male breast cancer patient who underwent modified radical mastectomy (MRM) with local anesthesia since he was not suitable for general anesthesia due to chronic obstructive pulmonary disease (COPD) and congestive heart failure (CHF).

Case Presentation

An 82-year-old patient who was being followed-up by the urology clinic due to hematuria was consulted with surgery due to a right sided breast lump. The patient stated that he noticed the lump about 2 years ago, that it enlarged in size, and that he noticed skin redness and discharge over the mass a week ago. He underwent TUR with spinal anesthesia due to prostate hyperplasia three years ago, and was being followed-up by the urology clinic with complaints of intermittent hematuria. He had COPD for thirty years, and CHF for 5 years, and was receiving doxazosin mesylate (Cardura XL®) 8 mg 2×1, fexofenadine (Fexofen®) 120 mg 1×1, valsartan hidrocholorothiazid (Premium Plus®) 160/12.5 mg ×1, budesonid formoterol (Foradil combi®) 400 mcg 2×1, tiotropium bromide inhaler (Spirava®) 18 mcg 1×1. He was unable to walk due to impaired exercise capacity. He had central obesity, dyspnea, and pitting edema of the lower extremity. On physical examination he had arrhythmic heart sounds, tachycardia, and disseminated rhonchus in both lungs. A malignant lesion, 5×4 cm in size was observed in his right breast that infiltrated the skin. He had right axillary lymphadenopathies, the largest being 3×3 cm in size. His laboratory results revealed; leukocyte count: 9790 / mm³ (H), hemoglobin 10.2 g/dL (L), hematocrit: 35% (L), fasting blood glucose 116 mg/dL (H), calcium 8.3 mg/dL (L) , aspartate aminotransferase: 50 U / L (H), carcinoembryonic antigen: 7.96 ng/mL (H), prostate specific antigen (PSA): 5.94 ng/mL (H), and free PSA: 1.1 ng/mL. Other routine biochemical parameters and CA 15-3 were normal. The chest X-ray showed prominent aortic arch, with an increased cardiothoracic index. The breast ultrasound showed a 50x40 mm in size heterogeneous solid mass in the right breast retroareolar area, with lobulated contours and vascularization. There were a few lymph nodes with a diameter of 30 mm and thick cortex in the right axilla. The tru-cut biopsy revealed an invasive ductal carcinoma (grade II/III, Bloom-Richardson). The immunohistochemical study showed staining of 90% tumor cells as ER (+++), PR (+++), and c-erbB2 (-). Ki-67 was positive in 10%. The whole body positron emission tomography showed pathological FDG accumulation in the right breast lesion of 54×36 mm size, with an increase in prostate size and pathological FDG accumulation in the prostate. The patient was consulted with medical oncologist for neoadjuvant chemotherapy (CT). However, the patient was not eligible for CT due to advanced age and co-morbid diseases. After preoperative evaluation for surgery, the patient was classified as ASA IV. Thereupon, MRM with local anesthesia was considered. Upon obtaining patient informed consent, 2 mg intravenous benzodiazepine (Dormicum®) was used to provide sedation. Local

Figure 1. Applying local anesthesia on localization of Stewart incision

Figure 2. Appearance of 3 months after surgery

anesthesia with 1 mg/kg prilocaine (Citanest® 2%) was performed to the skin, subcutaneous tissue and fascial planes related to a right-sided stewart incision (Figure 1). A right modified radical mastectomy was performed. The axillary drainage on postoperative day 1 through 4 were 150 cc, 100 cc, 50 cc and 30 cc. The surgical drain was withdrawn on the 4th postoperative day, and the patient was transferred to urology clinic due to hematuria. There was drainage through the incision two days later, wound cultures were obtained that did not reveal any pathogen. He was receiving oral ciprofloxacin 500 mg (Cipro®) bid due to urinary tract infection, and the wound drainage regressed. He was discharged on the 10th postoperative day, and sutures were withdrawn on the 15th day. Pathologic examination revealed grade II / III (modified Bloom-Richardson) infiltrating ductal carcinoma. The tumor size was 5×4 cm, and the surgical margins were clear. Three out of 13 axillary lymph nodes were metastatic. There was lymphovascular invasion, without perineural invasion. The largest metastatic lymph node was 1 cm in diameter, without extranodal spread. The patient did not receive adjuvant chemotherapy, he was started on oral tamoxifen 10 mg (Tadex®) 1×1. He did not have any problems related to mastectomy on his 3rd month outpatient follow-up (Figure 2).

Discussion and Conclusions

Routine breast examinations and screening programs are not implemented in male patients due to its low incidence. Being diagnosed at an older age and more advanced stages than female patients affect the prognosis of the disease. Giordano et al. (2) showed that tumor size and lymph node involvement affect survival in male breast cancer patients. Lorfida et al. (6) reported shorter disease-free survival rates in male patients (The 10-year disease-free survival rate was 51.7% vs. 66.5%; hazard ratio [HR], 1.79; 95% CI, 1.19-2.68; P=.004). Madden et al. (7) showed that advanced age, advanced tumor stage and hormone receptor negativity impacted prognosis, in their study of 1337 male breast cancer patients.

Definitive treatment of breast cancer in male patients is surgery, as in women. Regional anesthesia can be used in patients who are not candidates for general anesthesia due to advanced age or co-morbid diseases. For this purpose, high thoracic epidural anesthesia, cervical epidural anesthesia and paravertebral block can be used (8). However, in patients with high cardiac risk even regional anesthesia may pose a risk. Hypotension, bradycardia and cardiac arrest can be observed due to Sympathetic block following epidural anesthesia (9). Pollard et al. (10) stated that male gender, basal heart beat <60/min, ASA III or IV, beta-blocker therapy, sensory block above T6, patients younger than 50 years of age, prolonged PR interval were risk factors for cardiac arrest during epidural anesthesia.

Local anesthesia does not have serious side effects other than the rare methemoglobinemia and allergic reactions. MRM can be implemented with local anesthesia in high-risk and elderly patients with advanced breast cancer; however, the data on this issue is limited. Most of the reported studies included patients who underwent early-stage breast conserving surgery and sentinel lymph node biopsy (11, 12). Carlson (13) treated four female patients with stage 4 disease by total mastectomy under local anesthesia. However, these patients had advanced disease and did not undergo axillary dissection. Similarly, Oakley et al. (14) performed simple mastectomy with local anesthesia in 36 high-risk patients. A male patient with advanced stage breast who underwent mastectomy and axillary dissection was not included in these series. This case report will contribute to the literature in this regard.

In conclusion, MRM under local anesthesia is feasible in elderly patients with advanced disease who are not candidates for general surgery and this option should be kept in mind especially in male patients with breast cancer.

References

1. Siegel R, DeSantis C, Virgo K, Stein K, Mariotto A, Smith T, Cooper D, Gansler T, Lerro C, Fedewa S, Lin C, Leach C, Cannady RS, Cho H, Scoppa S, Hachey M, Kirch R, Jemal A, Ward E. Cancer treatment and survivor ship statistics, 2012. CA Canc J Clin 2012; 14:220-241. (PMID: 22700443) [CrossRef]
2. Giordano SH, Cohen DS, Buzdar AU, Perkins G, Hortobagyi GN. Breast carcinoma in men: a population-based study. Cancer 2004; 14:51-57. (PMID: 15221988) [CrossRef]
3. Wagner JL, Thomas CR, Koh WJ, Rudolph RH. Carcinoma of the male breast: Update 1994. Med Pediatr Oncol 1995; 24:123-132. (PMID: 7990761) [CrossRef]

4. Crichlow RW, Galt SW. Male breast cancer. Surg Clin North Am 1990; 70:1165-1177. (PMID: 2218826)

5. Borgen PI, Wong GY, Vlamis V, Potter C, Hoffmann B, Kinne DW, Osborne MP, McKinnon WM. Current management of male breast cancer: a review of 104 cases. Ann Surg 1992; 215:451-459. (PMID: 1319699) [CrossRef]

6. Iorfida M, Bagnardi V, Rotmensz N, Munzone E, Bonanni B, Viale G, Pruneri G, Mazza M, Cardillo A, Veronesi P, Luini A, Galimberti V, Goldhirsch A, Colleoni M. Outcome of male breast cancer: a matched single-institution series. Clin Brest Cancer 2014; 14:371-377. (PMID: 24742826) [CrossRef]

7. Madden NA, Macdonald OK, Call JA, Schomas DA, Lee CM, Patel S. Radiotherapy and male breast cancer: a population-based registry analysis. Am J Clin Oncol 2014 Apr 28. [Epub ahead of print] (PMID: 24781343)

8. Yektaş A, Ülger GÜ, Çömlekçi M, Yeter H, Gümüş F, Erkalp K, Alagöl A. A case of combined thoracic epidural anesthesia-interscalene block application in high-risk mastectomy patients: a case report. Agri 2014; 26:39-42. (PMID: 24481583) [CrossRef]

9. Andres J, Reina MA, Prats A. Epidural space and regional anesthesia. Eur J Pain 2009; 3:55-63. (PMID: 21989150) [CrossRef]

10. Pollard JB. Common mechanisms and strategies for prevention and treatment of cardiac arrest during epidural anesthesia. J Clin Anesth 2002; 14:52-56. (PMID: 11880024) [CrossRef]

11. Hirokawa T, Kinoshita T, Nagao T, Hojo T. A clinical trial of curative surgery under local anesthesia for early breast cancer. Breast J 2012; 18:195-197. (PMID: 22300192) [CrossRef]

12. Kashiwagi S, Takashima T, Asano Y, Morisaki T, Aomatsu N, Matsuoka J, Nakamura M, Kawajiri H, Onoda N, Ishikawa T, Hirakawa K. Lupectomy and sentinel lymph node navigation surgery for breast cancer under local anesthesia. Gan To Kaqaku Ryoho 2011; 38:2017-2019. (PMID: 22202270)

13. Carlson GW. Total mastectomy under local anesthesia: the tumescent technique. Breast J 2005; 11:100-102. (PMID: 15730454) [CrossRef]

14. Oakley N, Dennison AR, Shorthause AJ. A prospective audit of simple mastectomy under local anesthesia. Eur J Surg Oncol 1996; 22:134-6. (PMID: 8608827) [CrossRef]