

Toilet mastectomy as a possible and recommended solution to improve the quality of life of advanced breast cancer patients – case series

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Abstract

The five-year survival rate among breast cancer patients in Poland between 2010 and 2014 was 76.5%. It is approximately 10% lower than in Western Europe (United Kingdom 85.6%, Austria 84.8%, Germany 86%). The reason for this situation is complex. One of the factors is the fact that patients seek medical advice in very advanced stages of cancer, often requiring toilet mastectomy.

We present the surgical treatment of five female advanced locoregional breast cancer patients admitted to the General, Vascular, and Oncological Surgery Department of the Multidisciplinary Hospital Warsaw–Międzylesie between 2017 and 2020.

Two patients were treated with toilet mastectomy with skin flap transposition while three of them underwent a simple toilet mastectomy. We present the technical aspects of flap sliding to cover large skin defects after palliative breast resection.

According to our observation the quality of life among these patients improved significantly, however, we have no evidence of extension of the length of life.

In the most advanced breast cancer patients, toilet mastectomy is suitable even if this procedure requires skin flap transposition. We assess it as a recommended surgical treatment to improve the life quality of such patients, however, further research is required.

Key words: breast neoplasms, radical mastectomy, case reports.

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INTRODUCTION

Breast cancer is the second most frequent cancer among people and the most common among women [1]. One of the measuring methods for cancer treatment efficiency is the 5-year survival rate. This rate among breast cancer patients in Poland in the years 2010–2014 was 76.5%. It is approximately 10% lower than in Western Europe (UK 85.6%, Austria 84.8%, Germany 86%) [2]. Moreover, the standardised mortality rate in Poland related to breast cancer rose between 2009 and 2017 from 14.1 to 15.0, respectively [2, 3]. The reason for this situation is multifactorial. Among them is the delay in receiving the initial medical consultation, as well as the patient's attitude. It leads to increased diagnosing of more advanced locoregional as well as metastatic breast cancer cases.

This problem is common in developing countries where almost 4% of breast cancer patients require toilet mastectomy [4]. Nevertheless, this issue can also occur in developed countries where physicians are dealing with such patients more seldom and are not accustomed to managing such problems. Therefore, we present a case series describing toilet mastectomy performance on advanced breast cancer patients.

CASE REPORT

Five female patients were admitted to the General, Vascular, and Oncological Surgery Department in the Multidisciplinary Hospital Warsaw–Międzylesie between 2017 and 2020. They were all treated with palliative toilet mastectomy, however, due to the large size

of the tumour, two of them required a simultaneous flap transposition to cover the resection site.

The most extraordinary case is related to the 44-year-old patient whose treatment is shown in the figures. She was diagnosed with ductal carcinoma in situ of the right breast on 19.09.2018. The diameter of the tumour was around 10 cm. She was qualified for right breast mastectomy (with expander implantation if requested) and a sentinel node biopsy simultaneously. Further treatment depended on the histopathological examination results. At that time, all standard medical imaging examinations were conducted (chest X-ray, ultrasonography of the abdomen, breasts, and peripheral lymph nodes, as well as mammography) showing only the regionally advanced tumour. Nevertheless, even though there is line of evidence indicating that the quality of life among women who underwent mastectomy and healthy ones is similar, the patient did not attend further therapy, probably due to the fear of the procedure [5]. Mastectomy results in deformation, which can lead to emotional issues having a serious impact on patients' mental health. However, their attitude changes during the progress of the illness [6].

More than one year later, the patient presented herself at the outpatient clinic with an advanced locoregional right breast cancer of approximately 30 cm diameter (Fig. 1). Preoperative blood tests showed that the Hgb level was 7.1 mmol/L, RBC was 4.12 mL, WBC was $9.6 \times 10^9/L$, PLT was 267.000/ μL , GFR was 146.7 ± 70.1 mL/1.73 m²/min, INR was 1.2, and APTT was 47 s. Her general condition status according to the Eastern Cooperative Oncology Group (ECOG) scale was 2 (she was unable to work and was spending almost 50% of the day in bed, due to the tumour size as well as its fragmentising and bad smell). Repeated imaging examinations showed no metastatic disease. The tumour was infiltrating the skin. The patient was referred to our department and treated with

palliative toilet mastectomy with extended skin flap transposition on 04.02.2020 (Fig. 2).

Ten days after the surgery we observed marginal skin necrosis, which required additional skin excision (Fig. 3). Four days later she was discharged in a very good overall condition with proper wound healing without marginal skin necrosis. Histopathological examination revealed G3 infiltrating duct carcinoma not otherwise specified [ER (80%), PR (-), HER2 (-), Ki 67 (70%)]. Macroscopically as well as microscopically the lesion was not resected radically (R2). Subsequently, the patient was referred to the oncological department to receive further treatment.

Among the other patients mentioned in this study only one required skin flap transposition to cover the postmastectomy site, while the rest of the group underwent simple toilet mastectomy.

CASE MANAGEMENT

Two patients were treated with toilet mastectomy with extended skin flap transposition, while three of them underwent a simple toilet mastectomy. Palliative breast resections, which can be performed with conservation of the healthy marginal skin tissue in upper or lower quadrants, are not a reconstructive problem. However, mastectomies that result in extensive skin loss within the chest wall are considerably challenging to reconstruct. Such procedures are inevitable in the case of massive breast tumour with skin infiltration.

Among the presented patients, our intention was wide local excision with negative margins. In 2 cases we could not salvage enough marginal skin to perform a simple mastectomy. Therefore, a complex reconstruction was required.

The first figure (Fig. 1) shows a breast tumour as well as the marked lines of planned incisions. The



Fig. 1. Right breast cancer preoperatively with marked planned incisions



Fig. 2. Postoperative mastectomy site covered with flaps transposition



Fig. 3. Wound after the excision of marginal skin necrosis

performed toilet mastectomy resulted in a skin defect around 35 cm in diameter. There are a few reconstructive techniques of such defects described. A surgeon can use pedicled muscle flaps, such as the pectoralis major flap, rectus abdominis flap, latissimus dorsi flap, or external oblique flap, depending on the location of the gap. Other well-used techniques are omental, chimeric, and thoracoepigastric skin flaps. If the defect is limited to the cutaneous and subcutaneous tissue, a skin graft with microsurgical anastomoses may be performed as an appropriate solution. All of the aforementioned reconstructive techniques are very sophisticated and require highly specialised surgical teams. Another option worth taking into consideration is the use of alloplastic materials or negative-pressure wound therapy [7]. However, this method is associated with a long wound-healing time. The disease advancement among such palliative breast cancer patients requires the least burdening therapy as well as the shortest possible stay in a hospital. Our main goals are to improve patient quality of life and to begin complementary treatment as soon as possible.

There are some lines of evidence indicating that palliative mastectomy may elongate the life length, but they are inconclusive [8].

Conversely, there is evidence indicating that palliative toilet mastectomy should be replaced by combined chemotherapy and radiotherapy, limiting the surgical procedure to the cases when a negative margin can be salvaged, but these are inconclusive as well [9]. Moreover, considering stage IV breast cancer, there is still no consensus on which patients would benefit from palliative surgery, and there is still discussion about the role of surgery in such cases [10].

To reconstruct the chest wall in two of five of our patients we applied the modified thoracoepigastric skin flap technique with a medial sliding of the second breast (Fig. 2). To cover the postmastectomy site



Fig. 4. Postoperative view of the wound after 3 months

we pulled a fasciocutaneous pedicled flap based on the perforator from the right thoracodorsal artery upward and medially. Subsequently we prepared the epigastric fasciocutaneous flap, which required an intersection of the perforators from the right deep superior epigastric artery, and we moved it upward. However, this flap is able to survive due to the blood supply from the right deep inferior epigastric artery branches as well as the right superficial inferior epigastric artery. This reconstructive method required a displacement of the umbilicus.

In the first of the patients described in the article we noticed a minor marginal skin necrosis during the postoperative period, requiring additional skin excision, however, the structure of the flaps remained unchanged (Fig. 3). The second patient operated with the same technique healed *per primam intentionem*.

CASE OUTCOME

The patient presented in the figures was discharged from the hospital with properly healing wound and subsequently began systemic therapy. In May 2020, she was treated with chemotherapy and until now remains in a good general condition with stable regional disease (Fig. 4). The postoperative course of the second patient treated with toi-

let mastectomy and skin flap transposition went without wound healing complications, however, she died due to brain metastases 3 months after the surgery. Among the patients who underwent simple toilet mastectomy, one died 1 month after the surgery because of lung metastases while the other two patients are alive (33 and 17 months after the surgery, respectively), receiving chemotherapy, and remain in a good overall condition with stable disease.

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CONCLUSIONS

Our observation suggests that this operation improves patient's quality of life (stage 1 according to the ECOG scale on the day of discharge), preventing the complications and the inconveniences resulting from the tumour fragmentising. Even though there are long-term complications following mastectomy described in the literature (such as abnormal posture), in the case of the described patients we state that this is irrelevant, due to their tumour advancement and short life expectancy [11].

Furthermore, we believe that the aforementioned reconstructive technique is suitable in such cases and is simple to perform in any surgical department.

However, we claim that the quality of life as well as life length of advanced breast cancer patients undergoing such procedures require further studies. Moreover, the reconstructive methods applicable in such cases should be analysed with the aim of ascertaining which are most relevant.

The authors declare no conflict of interest.

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