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RECONSTRUCTIVE SURGERIES AS AN OPTION FOR SURGICAL REHABILITATION IN BREAST CANCER TREATMENT: A LITERATURE REVIEW

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ABSTRACT

Relevance: *Today, breast cancer (BC) occupies a leading position in the structure of cancer inci-dence among the female population. According to WHO, in 2022, over 2,296,840 million cases of primary detection worldwide were registered. Therefore, 11.7% of the total number of primary detected cancers and more than 685,000 women died from this disease (6.9% of the total mortality). The surgical method remains the leading one and is being improved yearly due to the increasing early detection in relatively young and nondisabled patients. Reconstructive surgery is gaining more and more popularity as a component of a rehabilitation program.*

The study aimed to *evaluate the effectiveness of reconstructive surgeries (RS) on the mammary gland during surgical rehabilitation.*

Methods: *Starting in 2014, we searched the databases Scopus, PubMed, and e-Library for scientific publications published over the past 10 years. The search results revealed more than 2,700 articles, of which 36 sources were selected according to the inclusion and exclusion criteria.*

Results: *The effectiveness of RS in the surgical rehabilitation of patients with breast cancer has been established, depending on the localization and pathomorphological characteristics of the tumor. Patients' satisfaction with the aesthetic result, a crucial aspect of their emotional and psychological wellbeing, was assessed using the Breast-Q questionnaire. According to the results of randomized, single-center, and multicenter studies and meta-analyses, there is a steady increase in simultaneous and delayed RS in treating BC.*

Conclusion: *RS is an advanced method of surgical rehabilitation. Its main objective is to ensure a high level of psychosexual well-being and satisfaction with the quality of life in patients while maintaining oncological safety. However, pursuing oncological safety requires constant improvement and a deeper study of each technique. Analyzing RS's early and long-term results will allow you to choose the optimal method for each patient based on the need for aesthetically safe and reliable surgical rehabilitation. This underscores the importance of ongoing research in this field.*

Keywords: *breast cancer (BC), reconstructive surgeries (RS), surgical rehabilitation.*

Introduction: Breast cancer (BC) is the most common cancer among women in the Republic of Kazakhstan, accounting for 23% of the total cancer incidence, and is also the leading cause of mortality among cancer patients (12.3% of cancer deaths). Modern high-tech screening programs increase the detection of cancer at early stages, and the use of effective treatment regimens increases the survival rate of patients. Despite the widespread use of radical mastectomy as the primary method of surgical treatment, new methods of oncoplastic therapy are gaining popularity [1], as mastectomy hurts women's body acceptance, psychosexual well-being, and quality of life [2]. The concept of "quality of life" in cancer patients has changed the technique of surgical treatment in breast cancer [3].

The main goal of oncological surgery is cancer resection, that is, the removal of the tumor along with the breast tissue with clean margins. However, there is a growing realization that the aesthetic results of these procedures are significant [4].

Skin-sparing mastectomy (SSM), first proposed by B. Torth in 1991, allows for the maximum preservation of the skin and muscles while removing the nipple-areolar complex (NAC) and performing immediate reconstruction afterward. Such a procedure meets the requirements for radical treatment and patients' cosmetic expectations. Over the next 30 years, it was proved that SSM does not increase the risk of regional metastases [5].

In 1979, T. Robbins first used an ellipsoidal lower transverse rectus abdominis musculocutaneous (TRAM) flap of the anterior abdominal wall for breast reconstruction [6].

The two main principles that should guide surgeons when performing breast-conserving surgery (BCS) are achieving negative resection margins and obtaining as satisfactory cosmetic results as possible [7].

The advantages of immediate reconstruction include superior aesthetic results, improved psychosocial well-being after mastectomy, at least in the short term, shorter operative time, fewer surgical interventions, lower costs, and accelerated social reintegration compared to delayed reconstruction. Immediate reconstruction requires higher quality skin flaps than mastectomy, followed by prolonged rebuilding, and may also increase the risk of complications. The main advantage of delayed reconstruction is that like-

ly complications do not affect the efficacy of adjuvant treatment. In addition, with planned adjuvant radiotherapy after surgical treatment, the patient has more time to make an informed decision about the type and features of reconstruction, which positively affects the balance of preoperative expectations and satisfaction with the final result.

The study aimed to evaluate the effectiveness of reconstructive and reparative surgery (RRS) on the breast in the surgical rehabilitation of patients with breast cancer.

Materials and methods: This review included domestic and foreign publications from the last 10 years (2014-2023) found in PubMed, Google Scholar, and Scopus databases. The search was based on the following key phrases: "breast cancer," "reconstructive and reparative surgery," and "surgical rehabilitation." *Inclusion criteria:* articles describing the results of randomized single-center and multicentre trials, meta-analyses, and systematic reviews with access to the full text. *Exclusion criteria:* case reports, literature reviews, conference abstracts, and articles without access to the full text. More than 2,700 articles were retrieved from the search results, of which 40 were selected according to the criteria. The concordance of the authors' opinions is 95%.

Results:

1. Reconstruction techniques using own tissue

In a multicentre randomized controlled trial, J.A. Ter Stege et al. used a questionnaire to find that more than 60% of breast cancer patients considering immediate breast reconstruction after mastectomy experienced clinically significant decisional conflict (CSDC) related to personal preference for breast shape and anxiety. Patients who doubted the choice of RRS, did not favor RRS, were opposed to RRS, or refused RRS were likelier to experience CSDC than patients who initially opted for RRS. Moreover, patients with higher levels of anxiety were more likely to experience CSDC.

This is the first study to assess the conflict in the decision to undergo immediate RRS in a large sample of female breast cancer patients. The level of decision conflict in this sample was comparable to the level of decision conflict in the sample of breast cancer patients considering delayed RRS in the two previous studies, relatively high compared to the level of decision conflict in the sample of breast cancer patients considering immediate RRS (mean = 33 (24)), and higher than the level of decision conflict in the sample of breast cancer patients considering various health-related factors. The group with the highest standardized (pre-decision) level of decision conflict were patients who made decisions on their own [2].

The four most commonly used techniques for autologous breast reconstruction include latissimus dorsi (LD) flaps, transverse rectus myocutaneous (TRAM) flaps-either free (fTRAM) or muscle-sparing free flaps (pTRAM)-and the deep inferior epigastric artery perforator (DIEP) flap [8].

1.1. Reconstruction with TRAM

Hartrampf first described using a transverse rectus abdominis myocutaneous flap (TRAM) in 1982. This technique involves elevating the abdominal myocutaneous flap with perforator vessels coming off the upper epigastric vessels [9].

The technique using the TRAM flap has undergone numerous modifications, resulting in different variations such as the muscle-sparing TRAM flap (MS-TRAM), DIEP, and superficial inferior epigastric artery (SIEA) flaps to reduce the morbidity of the abdominal donor site by reducing the amount of muscle [10].

The perfect flap for breast reconstruction can simultaneously provide improved vascularisation and reduce donor site morbidity. However, surgeon preference is another critical factor in achieving permanent and sustainable results. If the surgeon is not familiar with microsurgery, the use of pTRAM is a better option than fTRAM or DIEP for autologous breast reconstruction. Flap selection can be based on patient characteristics if the surgeon is familiar with TRAM, DIEP, and pTRAM techniques. Our results suggest that fTRAM may be appropriate for patients with large breast volume and low risk of herniation. Partial flap necrosis and fat necrosis prevent breast tissue volume preservation [11].

Flap type was found to be the only independent factor affecting patient satisfaction with surgical outcomes, considering limiting factors such as age at the time of surgery, country of surgery, timing of reconstruction, and adjuvant therapy [12].

Our results show that the most technically challenging option is not always superior to the traditional option. Compared with fTRAM and DIEP flaps, pTRAM flaps are losing popularity because they reduce vascularisation and increase the risk of abdominal complications. However, pTRAM flaps are a significant option because they have several advantages over fTRAM and DIEP flaps, including no need for microsurgery, shorter operative time, shorter hospital stay, and lower treatment costs. Thus, surgeons need not insist on using fTRAM or DIEP flaps and exclude pTRAM because a single flap cannot guarantee superior results concerning flap vascularisation and donor site vascularisation [11].

1.2. Reconstruction with DIEP

The DIEP flap was first described for breast reconstruction in 1989 by Koshima and Soeda and popularised by Allen and Treece [13]. This perforator flap has a theoretical advantage in reducing donor site morbidity compared to pTRAM and fTRAM flaps by eliminating muscle harvesting. This flap has become better known in recent years due to the increasing number of surgeons trained in this technique. The DIEP flap is more likely to preserve the intercostal nerves because the vascular pedicle is usually completely skeletonized when such a flap is taken. In particular, the risk of nerve injury is reduced when the medial row of the perforator is chosen. This flap shows a significant dif-

ference in postoperative hernia formation compared to pTRAM flaps [14].

DIEP flaps can be recommended for patients at increased risk of herniation, for example, obese and elderly patients. The pTRAM can be used by patients with smaller breast volumes and a lower risk of hernia [11].

According to the results of a prospective randomized five-year study, K. Seidenstuecker et al. noted that the main limiting factors for all types of RRS, affecting the results of healing after reconstruction are smoking, postoperative radiation therapy, body mass index >30, presence of DM, and flap circulatory disorders. It is worth noting that smoking significantly slows down the healing of the donor site on the abdomen (p=0.025) compared to non-smoking patients (p=0.019). With the implant-based technique, the development of capsular contracture was found in 50.7% of patients who received radiation treatment after expander-to-implant replacement versus 10.3% in non-irradiated patients [15]

1.3. Reconstruction with a skin and muscle flap based on the broadest muscle of the back (SMFBMB)

The thoracodorsal flap is a SMFBMB on the thoracodorsal vessels [16].

The SMFBMB has been a reliable option for breast reconstruction since it was first described in 1906. 1995, Angrigiani et al. first described a flap with a thoracodorsal artery perforator. Schwabegger et al. reported in 2003 the advantages of the "muscle-sparing" approach of removing a larger skin flap held by a relatively small segment of inferior muscle. J. Cook presented his study using muscle-sparing LD flaps for breast reconstruction. Over 8 years, 26 immediate and 100 delayed reconstructions using the LD flap were performed on 83 patients. Comparison of preoperative and postoperative photo analyses and registration of complications and additional procedures showed that the muscle-sparing latissimus dorsi (MSLD) flap is a universal option for breast reconstruction in various clinical conditions, with few complications and satisfactory aesthetic results [17].

The absence of capsular contracture and flap necrosis and faster cessation of postoperative lymphorrhea characterize the SMFBMB technique. Its disadvantages are the technical complexity and duration of the surgery, an additional scar in the back region, and lifelong restriction of several physical exercises (pulling up on the bar and climbing rope) [18].

Previous studies of BCS with SMFBMB have shown that marginal rates of positive resection margins after primary surgery ranged from 0% to 13%, comparable to our study's results (4%). The rates of positive resection margins after primary surgery in the BCS with SMFBMB group were significantly lower than in the BCS alone group (4% vs. 11%; P = 0.006). A meta-analysis comparing oncoplastic BCS and BCS alone showed that the marginal rate of positive resection margins in the group receiving oncoplastic surgery was significantly lower than in the group receiving BCS alone (12% vs. 21%; P<0.0001), which was similar to the results of our study. In our patients, tumors were more significant in the BCS with SMFBMB group than in the BCS alone group. However, the favorable outcome rates after primary surgery were lower in the BCS with SMFBMB group than in the BCS-only group. This may be because SMFBMB reconstruction allows for a wider resection without compromising cosmetic appearance, which is one of the most attractive features of BCS with SMFBMB [19].

More recently, the use of TDAP (thoracodorsal artery perforator) from the broadest muscle of the back for partial or total replacement of a breast tissue defect has been described. The TDAP flap uses residual lateral lipodystrophic tissue, often present after mastectomy, as autologous tissue for breast reconstruction. This results in volume enhancement in breast reconstruction and the removal of dystrophic fat under the axilla [20]. The technique is based on using a percutaneous myocutaneous perforator or thoracic artery perforator. A flap of significant size can be obtained with a single perforator, which avoids partial or complete flap loss in the postoperative period, as well as primary closure of the donor site. According to the results of a study of patients selected by computer randomization into LD and TDAP groups, E.M. Abdelrahman et al. state that the TDAP flap demonstrates efficacy on par with the LD flap in terms of feasibility, postoperative complications, cosmetic outcome, and finally early functional outcome, which is significantly better than that of the LD flap [21].

Figures 1 and 2 show a visual analysis of the algorithm for techniques using LD and TDAP flaps [21].

2. Reconstruction techniques using endoprosthesis

2.1. Implant-assisted endoprosthetic's

One-stage breast reconstruction with placement of silicone implants under the remaining skin pouch after mastectomy was first described in 1971 by surgeons R.K. Snyderman and R.H. Guthrie [22]. T. Cronin and F. Gerow introduced the silicone breast implant in 1963, and C. Radovan introduced a tissue expander for breast reconstruction in 1982. In 1984, H. Becker described a dual-chamber tissue expander with a silicone gel outer lumen with an inflatable physiological lumen, allowing one-stage breast reconstruction [3].

The use of silicone prostheses dramatically simplifies the technical aspect of RRS on the breast due to the absence of an additional donor site. Such surgeries are less traumatic, so they are most often used in oncomammological practice [23].

One of the main goals of implant-based breast reconstruction is to improve the quality of life of female patients. Well-developed test tools, such as the Breast-Q developed by A. Pusic et al. at Memorial Sloan-Kettering Cancer University of British Columbia in 2009, have allowed direct comparison of different types of breast reconstruction [24].

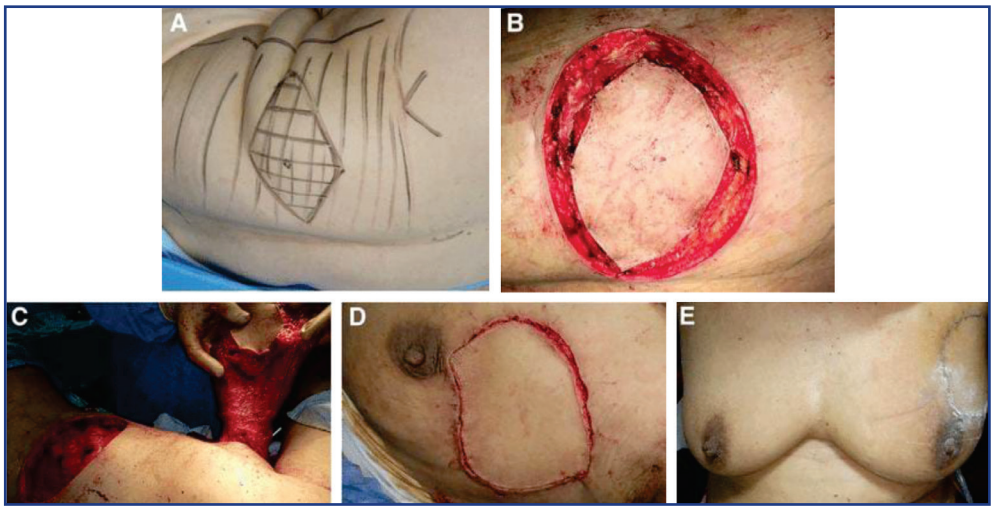

Figure 1 – Reconstruction process using LD flap: A – flap marking, B – resection and dissection, C – complete mobilization and tunnel formation, D – flap insertion, E – final result [21]

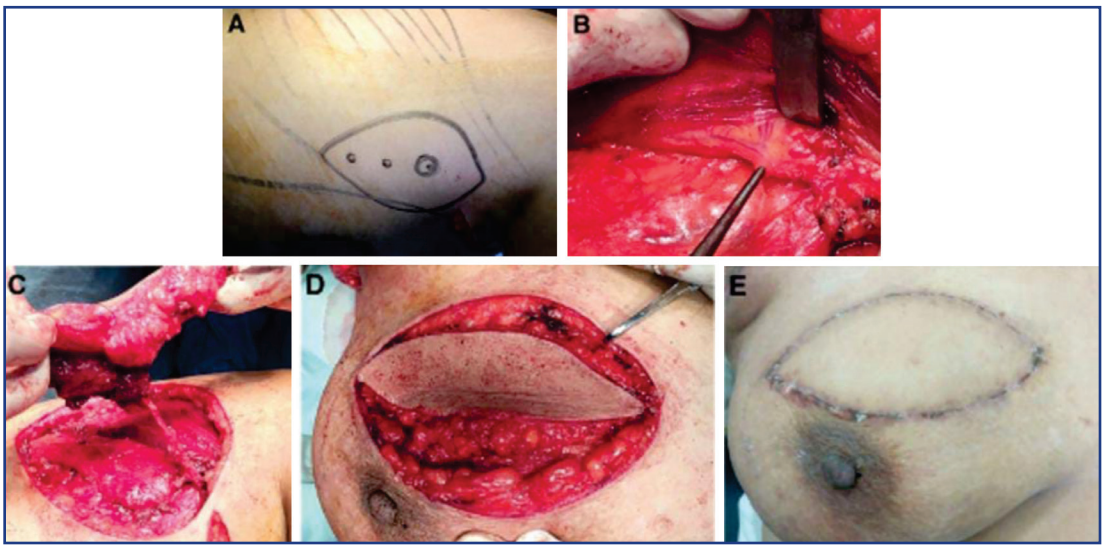

Figure 2 – Reconstruction process using TDAP flap: A – flap marking, B – identification of the thoracodorsal artery, C – complete mobilization on the vascular pedicle, D – flap insertion, E – final result [21]

The report of the first documented implant-assisted breast reconstruction was published by B. Freeman in 1962. As plastic surgeons were frustrated by the high complication rate, attempts were made to improve the technique. A shift from the subcutaneous to the submuscular plane was made, causing complete muscle coverage to become the main focus. Today, reconstructive surgeons have a full range of tools to return to subcutaneous breast reconstruction, including next-generation tissue expanders, breast implants, cell-free dermal matrices, intraoperative perfusion analysis, and fat grafting. The primary outcome was successful breast reconstruction with implants in the subcutaneous plane. Secondary outcomes included hematoma, infection, severe edema, suture deviation, skin necrosis, implant extrusion, device removal, and flap salvage. Demonstrated patient data, including age, BMI, and comorbidities (diabetes mellitus, arterial hypertension), were recorded [25].

G. Tanos et al. state that skin-sparing mastectomy followed by immediate reconstruction provides the best aesthetic results. Two-stage reconstruction using expanders and implants is recommended for women with an inappropriate amount of skin for immediate closure after implant placement or after extensive skin resection. The second stage of breast reconstruction is usually performed six months after the completion of the tissue expansion procedure. During this surgery, the expander is removed and replaced with a permanent anatomical implant, and a partial or complete capsulectomy is also performed to ensure that the permanent prosthesis fits perfectly in the pocket without any possibility of rotation or displacement. Usually, access to the implant pocket is in the submammary fold, so this method allows the surgeon to recreate the fold [26].

Implant-assisted reconstruction usually requires several procedures with refinements and modifications to complete and maintain aesthetics over time. The high rate of revision surgery becomes particularly prominent in the elective treatment of breast cancer, where unilateral

breast reconstruction often requires opposing procedures for symmetry [27].

According to a single-center randomized study conducted from 2012 to 2015, early mobilization of patients after surgery and physical exercises from the first day of the postoperative period helped prevent contracture in all patients. No breast cancer patient, regardless of the type of adjuvant therapy, had to have the implant removed after the second stage of breast reconstruction (replacement of the expander with a permanent implant) [28].

Breast reconstruction using a tissue expander can be considered as one of the acceptable options for patients who are scheduled to undergo radiotherapy [29].

Silicone gel implants are safe and acceptable components of the reconstructive range. Is this correct? Advances in gel structuring have reduced bleeding due to silicone, and cohesive gel implants are expected to have fewer problems associated with capsular rupture [30].

Additionally, it was reported that patient satisfaction rates with reconstruction in the context of radiotherapy for breast-conserving therapy (BCT) were significantly higher than with implant-based reconstruction. However, with careful patient selection, other authors have reported a relatively lower failure rate with such reconstruction [31].

The analysis of the results of the 2012-2015 single-center randomized study showed that reconstructive-plastic surgery with subcutaneous mastectomy and retained NAC as a surgical stage does not significantly affect the long-term surgical results in combined and complex treatment of breast cancer patients. Both overall and recurrence-free survival rates depended only on the prognostic factors generally recognized for this disease [32].

In general, all the described breast reconstruction techniques had comparable results and a relatively high level of aesthetic satisfaction of the patients [18].

3. Reconstruction of the nipple-areolar complex

Removal or preservation of the NAC is a current issue in oncology [33]. Oncoplastic techniques can achieve good cosmetic results even with a large volume of breast tissue resection. The problem arises in NAC reconstruction, as it is pretty challenging to achieve a natural-looking NAC. Consequently, the preservation of the NAC will achieve a better aesthetic result. While the oncological safety of NAC preservation has long been debated, there is now sufficient evidence supporting its preservation in cases of pathological non-involvement [34]. NAC preservation leads to optimal psychological satisfaction and provides a sense of less mutilating treatment [35].

NAC reconstruction should be deferred until chemotherapy and radiotherapy are completed. Some surgeons do not advise NAC reconstruction in the irradiated breast and recommend NAC tattooing to improve the cosmetic effect. Performing NAC reconstruction too early may lead to improper positioning of the NAC, spoiling the excellent result [36].

Discussion: Rehabilitation of patients with breast cancer has recently gained momentum as a comprehensive long-term intervention for a woman's comfortable return to physical and psychological fitness and adaptation to new living conditions after diagnosis and treatment. Since 1970, surgeons around the world have been working on the task of maintaining clean resection margins while maintaining aesthetic symmetry. Considering that in the Republic of Kazakhstan, the financing of oncological care is performed at the expense of Compulsory Social Health Insurance (CSHI), financial justification also plays a significant role. Since reconstructive surgeries are performed one-stage or delayed, and in the case of planned radiotherapy, one should prefer delayed reconstruction. The authors note the effect of radiotherapy on the rate of healing and preservation of the shape of the operated breast. The decision on the choice of level I and II reconstructive and reparative techniques is based on the breast's tumor location, stage, shape, and ptosis. The limiting factors may be muscle volume, subcutaneous fat, and skin of the resected and contralateral mammary glands.

In both reconstruction techniques, reduction symmetrization of the contralateral breast is performed according to the decision of the multidisciplinary team and the patient, considering the patient's characteristics, such as age, comorbidities, and other risks.

RRS using its tissue produces more positive patient feedback due to symmetry during age-related ptosis and weight changes in the late postoperative period. Bilateral reconstruction allows for almost perfect breast proportionality. The disadvantages of the method include the formation of a defect on the donor site, longer rehabilitation time, and volumes of blood loss. Complications such as ischemia, flap, and fat necrosis affect the optimal result.

Reconstruction with implants immediately after tumor node removal with skin preservation and NAC gives an immediate aesthetic result. However, in cases of extensive skin resection, a two-stage approach is the optimal solution: a temporary expander is placed in the pocket for 6 months and then replaced with a permanent anatomical implant. The disadvantages of this method are the development of capsular contracture, implant migration, and the potential for infection.

Conclusions:

1. Reconstruction should preferably be performed using a TRAM flap to preserve the functionality of the abdominal muscles in patients with a smaller breast volume and a low risk of hernia development.

2. Reconstruction with a DIEP flap is recommended in patients with a high risk of hernia development, such as obese and elderly patients.

3. TDL is a solution when there is a possible risk of postoperative lymphorrhea or radiation therapy, as there is a low risk of necrosis due to the preservation of an adequate blood supply.

4. Implant-based reconstruction is gaining incredible popularity because it is more straightforward than autologous tissue techniques. However, adjuvant radiotherapy increases the risk of implant loss and requires careful timing coordination.

Conclusion: RRSs are an advanced method of surgical rehabilitation. The main objective of this method is to provide a high level of psychosexual well-being and quality of life satisfaction in female patients while maintaining oncological safety. Despite this, oncological safety requires continuous improvement and more in-depth study of each technique. Early and long-term RRS results analysis will enable the selection of optimal methods for each patient, considering the aesthetically satisfactory and reliable surgical rehabilitation.

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АҢДАТПА

РЕКОНСТРУКТИВТІ ҚАЛПЫНА КЕЛТІРУШІ ОТАЛАР СҮТ БЕЗІ ҚАТЕРЛІ ІСІГІНІҢ ЕМІНДЕ ХИРУРГИЯЛЫҚ ОҢАЛТУДЫҢ НҰСҚАСЫ РЕТІНДЕ: ӘДЕБИЕТКЕ ШОЛУ

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Өзектілігі. *Бүгінгі таңда сүт безі қатерлі ісігі (СБҚІ) әйелдер арасында онкологиялық аурулардың құрылымында жетекші орын алады. ДДҰ мәліметтері бойынша, 2022 жылы бүкіл әлем бойынша 2,296,840 миллионнан астам бастапқы анықтау жағдайлары тіркелді, сәйкесінше бастапқы анықталған қатерлі ісіктің жалпы санының 11,7%-ы және аурудан 685 000-нан астам әйел қайтыс болды (жалпы өлімнің 6,9%). Хирургиялық әдіс жетекші болып қала береді және салыстырмалы түрде жас және жұмыс істейтін науқастарда ерте анықталудың артуына байланысты жылдан жылға жақсарады. Реконструктивті хирургия оңалту бағдарламасының құрамдас бөлігі ретінде танымал бола бастады.*

Зерттеудің мақсаты *– СБҚІ науқастардың хирургиялық оңалтуы кезінде реконструктивті-қалпына келтіру операцияларының (РҚКО) тиімділігін бағалау.*

Әдістері: *ғылыми жарияланымдарды іздеу 2014 жылдан бастап соңғы 10 жылда жарияланған Scopus, PubMed, e-Library дерекқорларында жүргізілді. Іздеу нәтижелері бойынша 2700-ден астам мақала табылды, оның ішінде қосу және алып тастау критерийлері бойынша 36 дереккөз таңдалды.*

Нәтижелері: *ісіктің орналасуына және патоморфологиялық сипаттамаларына байланысты СБҚІ бар науқастарды хирургиялық оңалту кезінде РҚКО қолдану тиімділігі анықталды. Пациенттердің эстетикалық нәтижеге қанағаттануы Breast-Q сауалнамасының көмегімен бағаланды.рандомизацияланған, бір орталықты және көп орталықты зерттеулердің, мета-талдаулардың нәтижелері бойынша СБҚІ емдеуде бір мезгілде де, кейінге қалдырылған РҚКО-ны қолдану үрдісінің тұрақты өсуі байқалды.*

Қорытынды: *РҚКО хирургиялық оңалтудың ең жақсы әдісі болып табылады. Бұл әдістің негізгі міндеті-онкологиялық қауіпсіздікті сақтай отырып, пациенттерде психосексуалдық әл-ауқаттың жоғары деңгейін және өмір сапасына қанағаттануды қамтамасыз ету. Осыған қарамастан, онкологиялық қауіпсіздік үнемі жетілдіруді және әдістердің әрқайсысын тереңірек зерттеуді қажет етеді. РҚКО-ның ерте және алыс нәтижелерін талдау эстетикалық тұрғыдан қауіпсіз және сенімді хирургиялық оңалту қажеттіліктеріне негізделген әрбір пациент үшін оңтайлы әдісті таңдауға мүмкіндік береді.*

Түйінді сөздер: *сүт безі қатерлі ісігі (СБҚІ), реконструктивті-қалпына келтіру операциялары (РҚКО), хирургиялық оңалту.*

АННОТАЦИЯ

РЕКОНСТРУКТИВНО-ВОССТАНОВИТЕЛЬНЫЕ ОПЕРАЦИИ КАК ВАРИАНТ ХИРУРГИЧЕСКОЙ РЕАБИЛИТАЦИИ ПРИ ЛЕЧЕНИИ РАКА МОЛОЧНОЙ ЖЕЛЕЗЫ: ОБЗОР ЛИТЕРАТУРЫ

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Актуальность: *На сегодняшний день рак молочной железы (РМЖ) занимает лидирующую позицию в структуре онкологической заболеваемости среди женского населения. По данным ВОЗ в 2022 году было зарегистрировано свыше 2,296,840 первичных случаев РМЖ в мире, что составило 11,7% от общего количества первичных случаев рака, и более 685 000 женщин умерли от этой болезни (6,9% от общей смертности). Хирургический метод лечения остается ведущим, и совершенствуется из года в год ввиду нарастающей ранней выявляемости у сравнительно молодых и работоспособных пациенток. Реконструктивная хирургия набирает все большую популярность как компонент реабилитационной программы при РМЖ.*

Цель исследования *– оценка целесообразности применения современных методик реконструктивно-восстановительных операций (РВО) на молочной железе при хирургической реабилитации больных с РМЖ.*

Методы: *В базах данных Scopus, PubMed, e-Library проведен поиск научных работ, опубликованных за последние 10 лет (2014-2024 гг.). По результатам поиска было найдено более 2700 статей, из них по критериям включения и исключения было отобрано 36 источников.*

Результаты: *По результатам анализа установлено, что онкологическая эффективность применения РВО при хирургической реабилитации больных с РМЖ в зависимости от локализации и патоморфологических характеристик опухоли не хуже, чем при применении радикальной мастэктомии. Удовлетворенность пациенток эстетическим результатом с помощью опросника Breast-Q выше при применении реконструктивных методик по сравнению с радикальной мастэктомией. По результатам рандомизированных, одноцентровых и многоцентровых исследований и мета-анализов был выявлен стабильный рост проведения как одномоментных, так и отсроченных РВО при лечении РМЖ.*

Заключение: *РВО являются передовым методом хирургической реабилитации. Основной задачей данного метода является обеспечение высокого уровня психосексуального благополучия и удовлетворенности качеством жизни у пациенток с сохранением онкологической безопасности. Несмотря на это, онкологическая безопасность требует постоянного совершенствования и более глубокого изучения каждой из методик. Анализ ранних и отдаленных результатов РВО позволит выбирать оптимальный метод для каждой пациентки, исходя из потребностей в эстетически благополучной и надежной хирургической реабилитации.*

Ключевые слова: *рак молочной железы (РМЖ), реконструктивно-восстановительные операции (РВО), хирургическая реабилитация.*

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