SURGICAL TREATMENT OF CANCER OF MAMMARY GLAND (THE HISTORY AND CONTEMPORARY)

Akhmedov Dilshod Khabibulloevich
Abdullaeva Parizoda Rustamovna
Ilkhomjonova Sevara Tulkinovna
Department of surgical diseases of pediatric faculty,
Samarkand State Medical Univevrsity, Samarkand, Uzbekistan
Mamarajabov Sobirjon Ergashevich
Scientific advisor – Doctor of medical sciences,
https://doi.org/10.5281/zenodo.14842261

Abstract. The concern of cancer of mammary gland is problem of today. The surgical treatment still has a priority. The advances in therapeutic radiation and chemotherapy improve the surgical treatment to enrich quality of life of the patients with the introduction of conservative surgery.

Key words: mammary gland, cancer, surgical treatment.

Over the past decades, breast cancer has rapidly risen to first place in the overall incidence of malignant tumors in women, both in other CIS countries and in the Kyrgyz Republic. According to data from the early 1970s to the present, the average annual growth rate of the number of cases has doubled (I.P. Napalkov et al., 1982, S.V. Koreneva et al., 1994). The standardized incidence rate in our region in 2008 was 8.5 per 100,000 population. Mortality from this disease also continues to grow, although at a lower rate: (4.6 per 100,000) (Davydov M.I., Aksel E.M., 2008). According to the experts of the World Health Organization (WHO), in the coming 2010, up to 1.5 million new cases of breast cancer will be detected in the world (Stoyko Yu. M. et al., 1999). Such disappointing statistics determine the relevance of improving both the prevention and diagnosis of breast cancer, and its treatment. According to V. P. Letyagin (1985), more than 6,000 treatment options for patients with breast cancer have been proposed at present. All treatment measures are divided into local-regional (surgery, radiation therapy) and systemic effects (chemotherapy, hormone therapy, immunotherapy). Certain successes in the treatment of breast cancer, achieved in recent years, are associated, first of all, with the use of various new methods of combined and complex treatment of this disease, with the undoubted successes of drug therapy for breast cancer, the introduction of highly effective cytostatics, hormonal drugs, bisphosphonates into clinical practice. Considering that breast cancer at any stage may be a systemic disease accompanied by latent dissemination of tumor cells throughout the body, the role of adjuvant systemic chemo- and/or hormone therapy as methods of

influencing distant metastases is difficult to overestimate. However, the surgical method of treating this disease remains dominant and basic to this day. The radicalism of the operation, depending on compliance with ablastics and antiblastics, is determined mainly by the compliance of the operation with the individual characteristics of local-regional growth and spread (Bazhenova A.L., Ostrovtsev L.D., Khakhanashvili G.N., 1985). Along with this, the surgical method is also the most ancient method of treating breast cancer, which was used in Ancient Egypt 3 thousand years BC (Davydov M.I., Aksel E.M., 2008).

The entire history of the development of surgical treatment of breast cancer reflects the search for optimal volumes of surgical intervention. The nature of therapy is always determined by the level of knowledge, prevailing ideas about the disease and the availability of the necessary material and technical support for treatment programs: from a complete rejection of invasive interventions during the time of Hippocrates and symbolic herbal treatment during the Middle Ages to super-extended mutilating operations in the mid-50s of the 20th century (Semiglazov V.F., Vesnin A.G., Moiseenko V.M., 1989).

An assessment of the results of treatment of this disease based on available historical documents since the time of Hippocrates shows that it was actually ineffective and, as a rule, symptomatic, that is, it was aimed at alleviating suffering (reducing pain, treating tumor ulcers), but did not prolong the lives of patients. And only at the end of the 19th century was some progress outlined. A qualitative leap in the effectiveness of breast cancer treatment occurred more than 100 years ago. In the late 19th and early 20th centuries, W. Handley (1922) put forward a hypothesis according to which it was believed that breast cancer spreads primarily through the lymphatic pathways and that regional lymph nodes are an ideal barrier to the spread of cancer cells. At the same time, the spread of tumor cells through the bloodstream was clearly underestimated. Based on this theory, Halsted (1889) developed his own mastectomy technique, which involved the removal of the mammary gland with the pectoral muscles, subclavian, axillary and subscapular lymph nodes in one block. This operation was considered the main method of treatment for a long time and was recognized as a standard radical mastectomy. Immediately after the widespread introduction of the Halsted operation into clinical practice, very encouraging results were obtained: the frequency of local and regional relapses decreased from 80 to 26% (Semiglazov V.F., Vesnin A.G., Moiseenko V.M., 1989). It should be noted that before W.S. Halsted, in 1888, N.I. Studensky proposed a radical operation for the treatment of breast cancer, but this intervention

remained little known in Russia and abroad (Bazhenova A.L., Ostrovtsev L.D., Khakhanashvili G.N., 1985).

By the 1950s, the scope of the operation had increased, as it became possible to detect metastatically affected retrosternal, parasternal and mediastinal lymph nodes. M. Margotti was the first to remove this group of lymph nodes in 1951 (1952), and J. Urban (1952) developed the operation of extended radical mastectomy in 1951 based on oncological grounds. An unsuccessful race for lymphogenous metastases began, which from the point of view of the modern understanding of breast cancer is not entirely correct and to a large extent one-sided, since the main threat of this disease lies in the possible development of so-called hematogenous distant metastases, that is, the spread of tumor cells through the blood vessels, which can occur simultaneously with, and even much earlier than, lymphogenous metastasis. However, during all this time, two directions of surgical treatment of this disease were simultaneously developing in oncology - methods of both superradical, extended, and functional-saving and organ-preserving operations appeared. J. Urban (1953) proposed to remove not only the mammary gland in a single block with the pectoral muscles, subclavian, axillary and subscapular lymph nodes, but also the lymph nodes located along the intrathoracic vessels. E. Dahl-Iversen, along with the above-mentioned anatomical structures, also removed the supraclavicular lymph nodes. However, in 1969, in his retrospective works, the author himself reported that his results were no better than with the classic Halsted operation. O. Wagensteen (1956) proposed removing the mediastinal lymph nodes together with the mammary gland and the subclavian, axillary, subscapular, supraclavicular and parasternal lymph nodes. Despite the superradical nature of the operation, the long-term results were also no better than with Halsted's operation. It is important to emphasize that tumors that were considered early (operable) in Halsted's time, for which radical and later superradical interventions were performed, are now considered by most oncologists to be advanced, inoperable, widespread diseases that require the use of a full range of therapeutic measures, including radiation, chemotherapy and hormone therapy. The advent of radiation therapy at the end of the 19th century helped to reduce the scope of surgical intervention [Garin A.A. et al., 1991].

Numerous clinical trials conducted in various centers and countries have shown that removal or, conversely, preservation of regional lymph nodes of any group (axillary, subclavian, supraclavicular, parasternal) can affect the frequency of regional relapses, but does not actually affect survival rates

(neither 5- nor 10-year) [Semiglazov V.F., Vesnin A.G., Moiseenko V.M., 1989]. The results of the study according to the B-01 NSABP (National Surgical Adjuvant Breast Project) protocol, covering 820 observations, showed the following 10-year survival rates [Fisher B., Wolmark N., 1975]: 1) in the absence of metastases in the axillary lymph nodes - 65%; 2) in the presence of metastases in the axillary lymph nodes - 25%, including: a) 1-3 lymph nodes with metastases - 38%, b) 4 or more lymph nodes with metastases - 13%. Analyzing these results, A.A. Garin et al. (1991) came to the conclusion that surgical treatment alone is insufficient regardless of the scope of the operation. Therefore, the so-called superradical operations, in which not only the axillary, subclavian, but also the parasternal, supraclavicular and even mediastinal lymph nodes are removed, are now considered unjustified - due not only to their complexity and severity for patients, but also to the impossibility of combating the dissemination of the tumor process.

As noted in the materials of "Controlled therapeutic trials in cancer" (UICC; Geneva, 1978), the revision of the scope of surgical intervention is the main unresolved issue. By this time, a return to the position of standard radical mastectomy after superradical interventions could no longer satisfy surgeons. The fact is that strict adherence to the principle of surgical radicalism, which is the basis of the generally accepted classical Halsted-Mayer operation, creates real prerequisites for various kinds of disorders, primarily in the upper limb. This was already shown by Halsted's initial experience. Thus, swelling of the upper limb was noted in 81-87.5% of cases, limited mobility in the shoulder joint - in 40%, pain - in 76%, decreased muscle strength with the loss of fine manual skills - in 39%, which leads to serious damage to professional activity in every second case [Pronin V.I. et al., 1985; Beltran M.A., 1989].

Along with the loss of physical health, severe mental trauma is also inflicted. For female patients who have undergone surgery - radical mastectomy, the problem of psychological adaptation and optimal life arrangement in general arises. Awareness of the disease, surgery and other types of treatment are for them the most severe stress and (without exaggeration) a personal tragedy, the constant experience of which leads to a depressive state of varying severity and serves as an independent factor influencing the further development of the disease, i.e., the possibility of its relapse. This relationship is very characteristic of breast cancer and has a convincing explanation. Oncological disease poses a problem for a woman that she has not encountered before. In fact, life begins anew with the awareness of a sudden danger and the need to build a new world

in order to adequately respond to the challenge. In the conditions of a serious illness, a woman suffers such a noticeable loss of physical and mental energy that it is very difficult to restore it. After all, it is necessary not only to cope with the loss of the past and the familiar world, what is commonly understood as "female completeness", but also to determine how to live on, build a new world to replace the one that has passed and establish oneself in it, despite the challenge thrown down by the disease [S. Karpilovskaya, 2006]. the loss of physical activity, the presence of a cosmetic defect and, as a consequence, the depressed psycho-emotional state of patients led to the fact that it became necessary to perform surgical treatment without causing severe trauma to the mental and physical health of patients with breast cancer.

In those same years, experience in performing functional-saving and organ-preserving operations was gradually accumulating. G. Crile (1963) at the first stage of the disease limited himself to only removing the mammary gland with the fascia of the pectoralis major muscle. D. Patey and W. Dyson (1948) published a technique for mastectomy they developed, in which, unlike Halsted's technique, the pectoralis major muscle was preserved. H. Auchincloss (1963) developed a technique of modified radical mastectomy, in which both pectoral muscles were preserved, lymphatic dissection was performed up to the inner edge of the pectoralis minor muscle, while the subclavian lymph nodes located medially were not removed. Much later, a similar radical mastectomy was described by Madden (1965), which differed from the technique of H. Auchincloss in that the author preserved not only the subclavian, but also the apical lymph nodes located behind the pectoralis minor muscle, starting lymphatic dissection from the outer edge of the pectoralis minor muscle.

Although radical and modified mastectomies remain the standard method of treating operable breast cancer, over the past decade there has been an increasing interest in organ-preserving treatment (including sectoral resection or quadrantectomy with axillary lymph node dissection) [1,10,8,4]. In many foreign clinics, this direction was called conservative treatment, which at first had the correct meaning, since the main emphasis was on radiation therapy after local economical excision of the primary tumor (tumorectomy, lampectomy) by the type of limited excisional biopsy. G. Crile (1964) performed simple sectoral resection without lymph node dissection in 53 patients with stage I breast cancer, and did not note any reliable differences in survival compared to mastectomy. Recently, U. Veronesi (1977) introduced the concept of quadrantectomy into surgery (in Russian literature, such an operation is

called radical resection). The operation involves removing only part of the mammary gland together with the tumor and regional lymphatic dissection. Finally, in recent years, publications have appeared on lambectomies - removal of only the tumor of the mammary gland with biopsy of the "sentinel lymph node", which is the first on the path of lymph flow from the mammary gland [Moiseenko V.M., Semiglazov V.F., Tyulyandin S.A., 1997].

The "sentinel" lymph node is detected using radioisotope research. In case of metastatic lesion of the "sentinel" lymph node, lymphatic dissection is performed in full, if there are no cancer cells in it, lymphatic dissection is not performed at all [Zurida S., 1997]. All organ-preserving operations are supplemented by radiation therapy to the remaining part of the mammary gland. Remote results after organ-preserving operations turned out to be the same as after Halsted operations [Trapeznikov N.N., Letyagin V.P., Aliev D.A., 1989]. It should be noted that the prerequisites for the development of limited-volume surgical methods for the treatment of breast cancer were: 1) improved diagnostics of early forms of breast cancer (for example, mammography allows you to identify non-palpable tumors in the mammary glands, as well as a tumor less than 0.5 cm in diameter); 2) preventive examinations of women at risk of developing breast cancer; 3) popularization of knowledge about breast cancer and surgical treatment methods; 4) development of radiation and later drug antitumor therapy methods in addition to surgical intervention [Garin A.A. et al., 1991]. Gradually, the volume of organ-preserving operations increased to classical sectoral resection, segmental resection with axillary subclavian dissection, and even quadrantectomy in combination (or without) with postoperative radiation therapy. The "retrospective" (exploratory) stage of clinical studies of this problem has been completed. Currently, a stage of more reliable, randomized clinical trials is underway [Stoyko Yu.M., Skryabin O.N., Karachun A.M., 1999].

As an example, it seems appropriate to cite the results of a study [Dorofeev A.V., An integrated approach to selection for organ-preserving treatment of breast cancer stages I-II a-b// Abstract of Cand. Sci. (Medicine) Dissertation. – St. Petersburg, 1996. – 20 p.], using randomization of breast cancer patients. According to the author, the functional effect of the operations was as follows: after organ-preserving operations, swelling of the upper limb and impaired mobility in the shoulder joint area were observed in 6.0 and 7.9% of cases; after mastectomy – 21.6 and 14.4%, respectively. The cosmetic effect was assessed as good and excellent in 50.5% of patients. Unsatisfactory cosmetic

results were obtained in 6.5%. Three-year survival rates after mastectomy and organ-preserving surgeries were virtually identical, amounting to 94.25% and 92.20%, respectively (P> 0.05). In an analysis of five-year survival rates in breast cancer patients who underwent organ-preserving treatment (sectoral resection with axillary-subclavian lymphadenectomy), local recurrences of cancer were detected in 4.5%, and after Patey mastectomy – in 2.3%. Distant metastases in patients of the first group were detected in 6.25% of cases, and in the second – in 6.3%. Five-year survival was 89.35%, and after organ-preserving surgeries – 89.86% (P> 0.05). Thus, the author comes to the conclusion that with careful selection of patients with breast cancer, when performing organ-preserving intervention, the long-term results are no worse than after mastectomy according to Patey, and the "functional" and "cosmetic" ones allow patients to go through the rehabilitation stage much easier and faster.

As U. Veronesi (1988) rightly believes, the coming years should be fundamentally important for understanding the significance of organ-preserving techniques in the treatment of minimal breast cancers, and in case of success, a great psychological effect can be expected in women who will be interested in regular visits to the doctor, having a firm hope that the mammary gland will be preserved.

In conclusion, it should be especially emphasized that the organ-preserving and functionally sparing focus of treatment is a priority in modern clinical oncology. This encourages the development of all components of this treatment: organizational, diagnostic, therapeutic, rehabilitation, etc. In terms of treatment, the further development of organ-preserving treatment is undoubtedly associated with the use of high-precision medical technologies [Issov V.I. et al., 1995].

References:

1. Bazhenova A.L., Ostrovtsev L.D., Khakhanashvili G.N. Breast cancer. - M.: Medicine, 1985. - 266.
2. Barchuk A.S. On the state and prospects for improving oncological care for the population of St. Petersburg // Issues of oncology. - 1994. - Vol. 40, No. 1-2-3. - p. 100.
3. Bulbulyan M.A., Astashevsky S.V., Zaridze D.G. Incidence of malignant tumors and mortality from them in a group of residents.
4. Dorofeev A.V. An integrated approach to the selection for organ-preserving treatment of breast cancer stages I-II a-b // Abstract of Cand. Sci. (Medicine). - St. Petersburg, 1996. - 20 p.

5. Moiseenko V.M., Semiglazov V.F., Tyulyandin S.A. Modern drug treatment of locally advanced
and metastatic breast cancer. St. Petersburg: Griffin Publishing House, 1997. – P. 254.
6. Pustyrsky L.A. Modified radical mastectomy // Abstract of a Doctor of Medicine dissertation. – Leningrad, 1986. – 20 p.
7. Semiglazov V.F., Vesnin A.G., Moiseenko V.M. Minimal breast cancer. – Moscow: Medicine, 1989. – 175 p.
8. Stoyko Yu.M., Skryabin O.N., Karachun A.M. Breast cancer // Manual. – method. – St. Petersburg: Military Medical Academy, 1999. – 55 p.
9. Trapeznikov N.N., Letyagin V.P., Aliev D.A. Treatment of breast tumors. - M.: Medicine, 1989. - 175 p.
10. Skryabin O.N., Roman L.D., Bogorodsky Yu.P. // Journal of Obstetrics and Women's Diseases. - 2000. - Issue 2. - Vol. XLIX. - p. 12-16.
11. Davydov M.I., Aksel E.M. // Bulletin of the Russian Oncological Research Center named after N.N. Blokhin, Russian Academy of Medical Sciences. - Vol. 19, No. 2 (Appendix 1), 2008 - p. 82-83.