



Original Contribution

CLINICAL RESULTS OF AUTOGENIC RECONSTRUCTION OF THE LACTIFEROUS GLAND AFTER MASTECTOMY

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SUMMARY

We describe our experience in autogenic reconstruction of the breast following breast removal, applied directly together with the mastectomy, as well as months and years after the operation has been done.

Two major methods of reconstruction have been used – TRAM-f and MLD-f – among 38 patients. We have studied the subsistence, cosmetic effects, and the complications. Also the safety of the methods applied has been analysed for the period of 5 years subsistence with breast cancer.

INTRODUCTION

Over 3500 women develop breast cancer in Bulgaria annually. Despite the ubiquitous use of organ-saving operations (including quadrantectomy, lumpectomy or tumorectomy with auxiliary lymph dissection followed by radio-therapy), in this case a large percentage of women undergo mastectomy due to their inability to fit within the organ-saving operations' indications. The consequences of mastectomy for young women are well known: depression, feeling of body incompleteness, social integration difficulties, etc. For young women who have undergone mastectomy, at least there exists a definitive solution that does not involve the uncomfortable and heavy external breast prosthesis which women are forced to use to hide the visible results of mastectomy. These are the breast reconstructions. They have been introduced a long time ago but it has been in the past 20 years that their use spread amongst women who have undergone mastectomy.

METHODS AND MATERIALS

Over a space of 11 years we have operated on 38 women with mastectomy due to mammary carcinoma, whose breasts were reconstructed using an autogenic method.

The principal method of reconstruction was the so-called **TRAM-f (transverses**

rectus abdominis musculocutaneous flap).

This method consists of transversal skin removal with a leaf-like cut of skin-transplant (including the skin, under-skin and body of musculus rectus abdominis, the latter of which carries the skin-transplant nurturing vessels) from the fore-abdominal muscle situated under the naval. The whole abdominal muscle is removed together with the wether, the front part of the used muscle is vertically incised so that the skin-transplant can be sufficiently mobile for a breast muscle transposition; then it is tied to the mastectomy defect and the skin transplant is brought to the thorax for neo-breast modeling and affixing. There are different techniques of carrying out the **TRAM method**:

1. It can be applied with an auxiliary easel (the most common technique)
2. It can be applied as a free transplant but then microsurgical affixing of the nurturing to the recipient vessels in the axilla is required alongside with pharmacological projection of the vessel anastomoses. When the straight muscle on the mastectomy side is used, the TRAM reconstruction is called **unilateral**, whereas when the opposite one is used it is called **contralateral**. When both muscles are used to ensure better nurturing, the **double pedical** technique is employed. All these approaches can be applied simultaneously with mastectomy (**direct reconstruction**) or can be a

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couple of months or years belated
(**postponed reconstruction**)

The other method of reconstruction that we investigated is the so-called **MLD-f technique (musculus latissimus dorsi flap)**. In this case, the skin-transplant is removed from the back and includes the skin, under-skin and body of the wide back muscle and nutrition is provided by the subscapular vessels. This method has one drawback: smaller skin-transplant volume, which in the case of bigger breasts has to be supplemented by prosthesis so that the initial breast volume is attained. Moreover, the back skin is far thicker and coarser compared to that of the front abdominal muscle. This method, however, is highly acceptable in the case of smaller breasts when cosmetically satisfactory results are reached in its pure autogenetic form.

We applied direct TRAM-f reconstruction on 13 women and direct MLD-f reconstruction on 2. Twenty-two women underwent postponed TRAM-f reconstruction, while 1 underwent postponed MLD-f reconstruction. In only 2 of the TRAM-f cases we used the unilateral reconstruction; in 6 of them the double-pedical technique was employed and all the rest were carried out with the use of contralateral technique.

RESULTS

All-type breast reconstruction early complications

Early complications:

1. Full necrosis of the skin transplant - 0 (0%)
2. Necrosis up to 50% - 0 (0%);
3. Necrosis up to 20% - 2 (5.2%);
4. Necrosis up to 5% - 3 (7.9%);
5. Infection of the breast cut – 1 (2.6%);
6. Haematoma in the abdominal cut area – 1 (2.6%).

Late complications:

1. Lost symmetry - 1 (2.6%);
2. Eventration 2 (5.2%).

The skin transplant necrosis from 5 to 20% required removal after demarcation and sewing up. They are rather harmful to the patient's psychological condition. If a correction operation parallel with reconstruction had been carried out on the other breast, after the necrosis removal the symmetry might be lost. They are most commonly encountered in the area of the skin

transplant that is furthest away from the nurturing vessels. Eventrations constitute another big group of complications. Since with skin-transplant cutting the fascial cover of the front abdominal muscle brings about a likely occurrence of eventration. We successfully used Amprofen on our patients to prevent this.

Altogether various complications were observed in 20.9% of the cases.

Cosmetic after reconstruction

In order to get objective feedback and evaluate our own effort, we conducted a survey amongst all the patients at different post-operation times. 13 questions concerning aesthetical and quality of life issues as well as difficulties we had encountered were included in the survey. Every possible answer had a certain amount of points attributed to it and so we devised our own scale of categorising the patients into three groups: good, satisfactory and bad result.

We attained good results with 27 women (70%), satisfactory with 8 (21%) and bad with 3 (9%).

DISCUSSION

Indications and contraindications for breast reconstruction surgery

In 1987 **Narhtrampf** pointed out the indications for **TRAM-f reconstruction**:

1. Mastectomy;
2. **Poland's** syndrome;
3. Prosthesis removal after capsular contracture;
4. Radio-therapy ulcers;
5. Serious breast traumas.

The contraindications include:

1. Cardiovascular disease;
2. Uncontrolled diabetes;
3. Uncontrolled hypertension;
4. Any abdominal plastic surgery undergone;
5. Recti-cutting abdominal operations.

Relative contraindications are:

1. Age of 60 or higher;
2. Obesity;
3. Abnormally large breasts;
4. Smoking.

Bostwick (1980) came up with an interesting indication for the use of MLD-f reconstructions – some women preferred the cicatrix on their back to having it on their front abdominal muscle. Allen and Tucket

published the indications for MGM-f (musculus gluteus maximus – flap) reconstruction application – they are always free and applied even after abdominal operations or unsuccessful TRAM-f.

The indications for prosthesis reconstruction are more numerous, which on the one hand is due to the lightness and small injury potential (Asplund, 1983) and on the other – to the relative safeness of the method (Webster *et al*, 1994; Vinton, 1990). All the above-mentioned authors are plastic surgeons and they do not mention anything about the indications and contraindications related to the oncologic stage of the breast cancer. This is of utmost significance to us. We apply direct reconstruction to all women, which have contraindications for organ-saving operations (namely: below 35 of age, with abnormally small or big breasts, negative receptor). If the patient complies with the organ-saving operation indications we do not perform mastectomy with reconstruction but the organ-saving operation itself. An interesting situation becomes when the women can undergo a mastectomy only, organ-saving operation or mastectomy and direct reconstruction. This is the case when patients are between 40 and 50 years of age and are in the first stage (T1N0M0). The woman can then choose the right method on her own after discussing it with us. Our opinion on the indications for direct reconstruction oscillates between first and second “A” stage if an organ-saving operation has been refused. When mastectomy with direct reconstruction has been applied and with the following investigation of the lymph nodes in the axilla, and proven to be injured, we apply a post-operative combination of radiotherapy and chemotherapy without any restriction.

Unlike the case with direct reconstructions, the postponed ones have far more indications. In our view, this kind of reconstruction is for patients who have undergone mastectomy in the first, second or third “A” stage, have completed their oncologic treatment, do not comply with the above-mentioned Harhrampf indications, have had a normal lifestyle for a certain period (1 to 1.5 years), have satisfactory results on the blood tests, tumour markers, bone scintigraphy chest radiography, liver echography, are not consistent smokers and would like to undergo reconstruction. The required period of 1 to 1.5 years can be diminished in the case of carcinomas with lower-degree of malignancy and first stage if

the patient shows interest. In our practice we have encountered such cases.

Autogenic breast reconstruction and oncologic risk

With postponed reconstructions, there is no oncologic risk. There, the oncologic treatment is completed, a certain period of clinical health has elapsed, the blood and instrumental tests taken prove local and general control. With direct reconstructions, since the stage is not yet defined, it can turn out to be different from the post-operatively determined one, which may call for combined treatment. The main concern here is to what extent is a direct reconstruction justified in a more advanced illness.

Direct reconstruction in an oncologically advanced diseases

In 1996 Stylbo *et al* – Emory University, published his data of 21 patients with advanced breast cancer and direct TRAM-f reconstruction. All tumours were classified as T3, 3 N2, 3 with no information about distant metastases. The set of criteria for the operation had been:

1. Good response to post-operative chemotherapy;
2. Great desire for reconstruction;
3. Good overall status. The outcomes of the operations, when compared to a control group of patients, are statistically identical.

The results from the New York group, lead by Godfrey (1995), which presented 21 patients with breast carcinoma of stage second “B” and above, are fairly similar. The radio- and chemotherapy performed have been well tolerated, without significantly influencing the reconstruction. Only one patient suffered from local recidivation in the cicatrix area, two other ones – from axillaries recidivation. Two of the third stage and two of the fourth stage patients died of process dissemination under very good local control.

In our case of 15 direct reconstructions, 9 women were in first stage (T1N0M0), 4 in T1N1M0 and 2 in T2N1M0. Out of the 9 women in the first stage, our five-year observation reported death or distant metastases of two of them. One of the second “B” stage patients also developed metastases and died two years after the operation. All women in the second “A” and “B” stages were subsequently treated with radio- and chemotherapy.

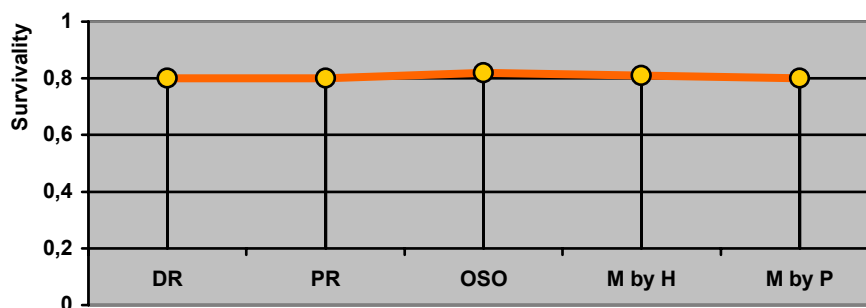
Reconstruction and 5 years survival

This remains one of the most important issues. In 1993 Patel et al at the Cardiff Institute carried out a research, in which two groups of 81 breast carcinoma patients were each standardised and observed. The first group had undergone mastectomy, while the second group underwent mastectomy and direct reconstruction. The observation period was not 5 but 10 years. The results were: 1. Local recidivations in “reconstructed” patients are 9; in the control group – 11 2. Distant metastases are 33, compared to 29 in the control group 3. Deaths due to illness – 31; and 29 in the control group (mastectomy only group). With the use of sequential analysis, the authors showed the absence of significant differences

in the two groups.

A few years ago, we attempted to answer the question of the reconstructions’ oncologic safety by investigating 484 women, whom we had operated on for a period of 4 years and 3 months. 19 of them had undergone organ-saving operation, 30 – mastectomy with reconstruction (15 – direct; 15 – postponed). The rest underwent mastectomy only. For the whole period of observation, we did not encounter significant differences in the death ratios between direct and postponed reconstructions, as well as between organ-saving operations and mastectomies. This attests the low oncologic risk in reconstructions, compared to all other methods (see **Figure. 1**).

Figure 1. Survival tendencies depending on the type of operation



Key:

1. DR – direct reconstruction
2. PR – postponed reconstruction
3. OSO – organ-saving operation
4. M by H – Halsted mastectomy
5. M by P – Patey mastectomy

CONCLUSIONS

1. Reconstructions present an effective means of improving the quality of life of young women with mastectomy.
2. Patients in first or second “A” stage have to undergo direct reconstruction if they have rejected the organ-saving operation option and display willingness for reconstruction.
3. Direct reconstructions on patients with breast cancer do not bear any oncologic risk for the five-year post-operative period.
4. All women in the first, second or third stage of the illness, above 60 years, without general contraindications and willing to undergo reconstruction should be treated with a postponed reconstruction.

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