

Surgical Treatment of Breast Lesions

Vinceova A^{1*} and Bartko Ch²

¹Gynecology and obstetrics clinics, Comenius University, Bratislava, Slovakia

²II.surgical clinics, Comenius University, Bratislava, Slovakia

*Corresponding author:

Alexandra Vinceova,
Gynecology and obstetrics clinics, Comenius
University, Bratislava, Slovakia

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1. Summary

This article is going to describe diagnostics and surgical treatment of non-palpable lesions of breast, the statement of limited surgery approach in treatment of breast cancer, mapping of focused lymphatic node in axilla in breast cancer (SBA) and application of new trends of implantation plastic surgery.

2. Introduction

Uncovering early forms of malignant forms of breast gland is the only possible way to increase patients' survival rate and decrease mortality for this disease. With development of screening programs of breast cancer and effort to uncover the subclinical and early forms of breast cancer, also has localization usage – identifying Franke's drivers in diagnostics and treatment of non-palpable benign and mainly malignant lesions has its irreplaceable meaning.

3. Diagnostics and Surgical Treatment of Non-Palpable Lesions of Breast

A) Ways to Uncover Non-Palpable Pathological Lesions of Breast Gland

*Preventive native mammography – targeted screening, secondary prevention

*Control native mammography – in women who underwent limited surgical treatment for breast carcinoma – tertial prevention

*Native mammography in group of women, who are watched for long term in mammal outwards department

*Native mammography in non-specific difficulties (mastodynia, injuries)

*Randomly done native mammography

B) Algorithm of Diagnostics and Treatment of Non-Palpable Lesions of Breast Gland

*Histopathologist – assessment of benign or malignant lesion

*Surgeon – operation – limited surgical treatment or amputation with axillary exenteration or SNB.

*Chemotherapy

*Hormonal therapy

*Radiotherapy – follow up by adjuvant treatment.

*Patient's dispensarisation

C) Localization of Driver

Mistakes in Read-In of the Driver

*Not centering the tip in the lesion

*Pushed out or fallen out driver, especially in involuted breast

*Not leading the driver, the shortest way

Mistakes in the surgery

*Taking out too much of the tissue – making large defect of skin and tissue around

*Taking out too little of the tissue in means of sparing surgical effect and then followed up taking out of the tissue after getting results of negative histogram

*Cutting the driver during the surgery

4. Surgery in Treatment of Breast Cancer

Surgery of breast – types

- A) Amputation or axillary exenteration
- B) Limited resection surgery on breast gland (Veronesi) [1]
- C) Quadrantectomy

D) Tylectomy (segmental mastectomy, wedge resection, massive excision)

E) Lumpectomy (tumorectomy, excision biopsy, tumor excision)

Indications for limited surgery are nowadays relatively wide, they underwent dynamic development and are well defined.



Figure 1: Drivers in pathological or suspicious lesion of breast – RTG department

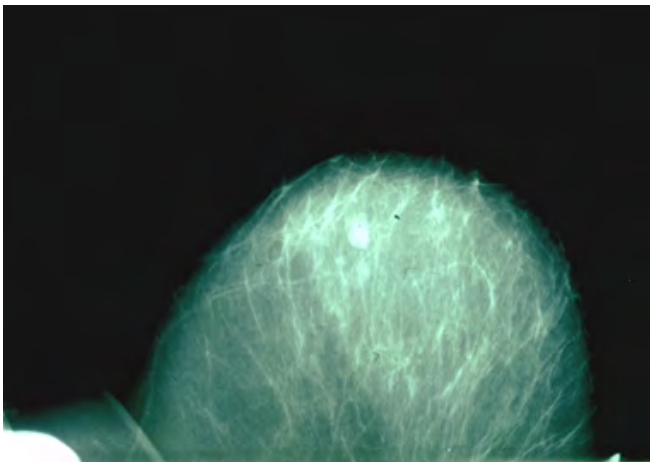


Figure 2: Native mammography – FIA of the breast (fibroadenoma) – RTG

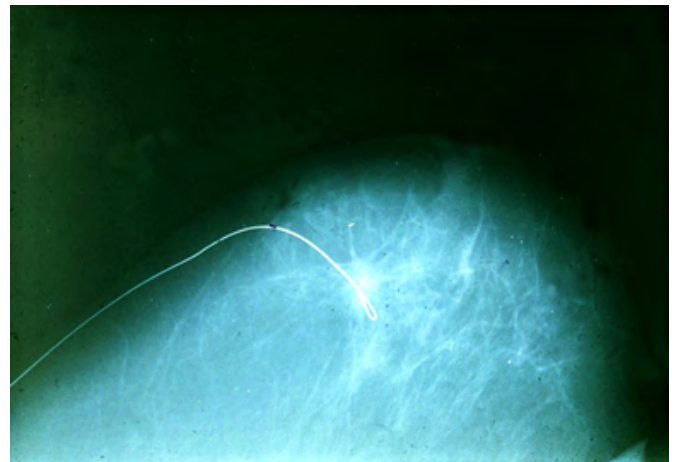


Figure 3: Native mammography with driver – carcinoma of the breast – RTG



Figure 4 and 5: Surgical extirpation of suspected lesion on driver

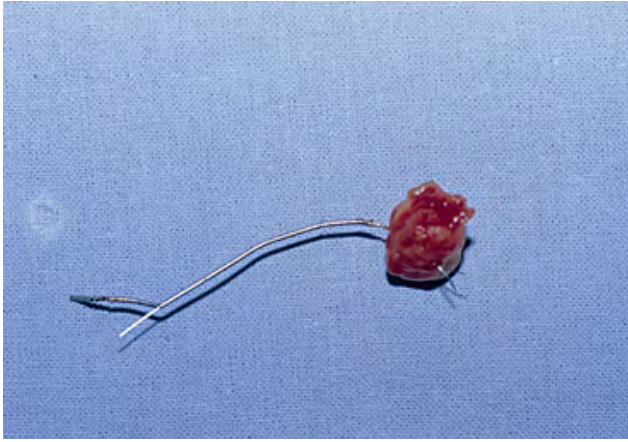


Figure 6: Extirpated tissue on driver

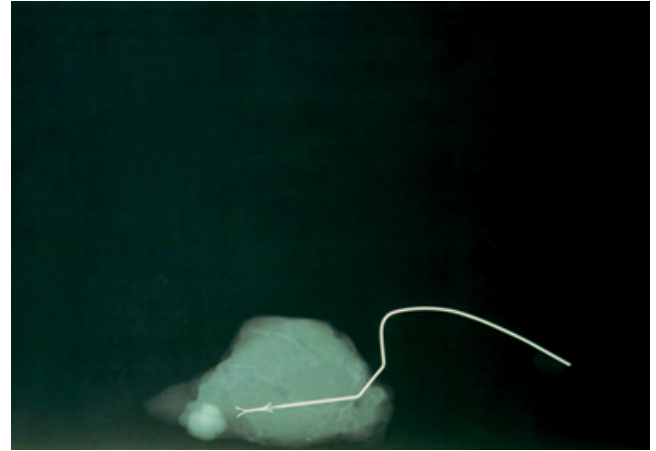


Figure 7: RTG prepare – histogram



Figures 8 and 9: Post operative effect after limited surgery

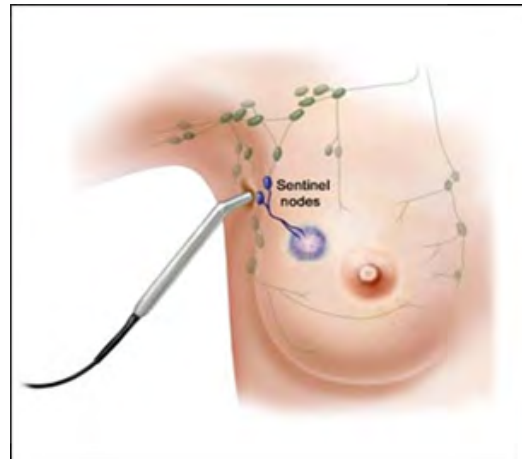
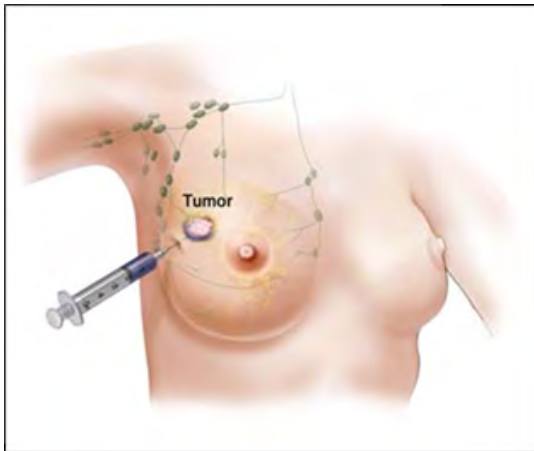


Figure 10 and 11: Regional topographical anatomy of breast lymph nodes

Quadrantectomy and exenteration of tumor upper lateral quadrant is continuous and in cases of another quarants there is discontinuous axillary exenteration.

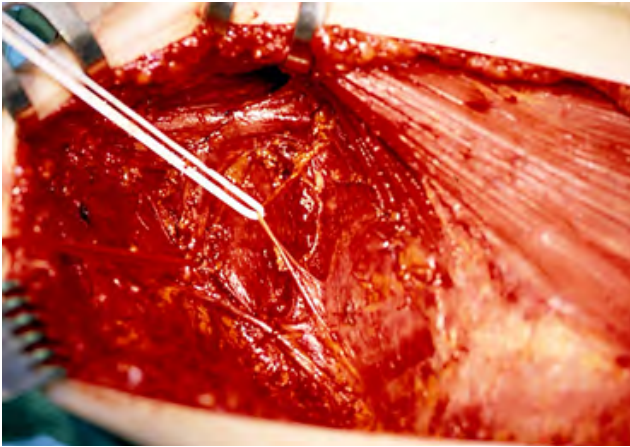


Figure 12: Axillary exenteration with saving intercostal innervation

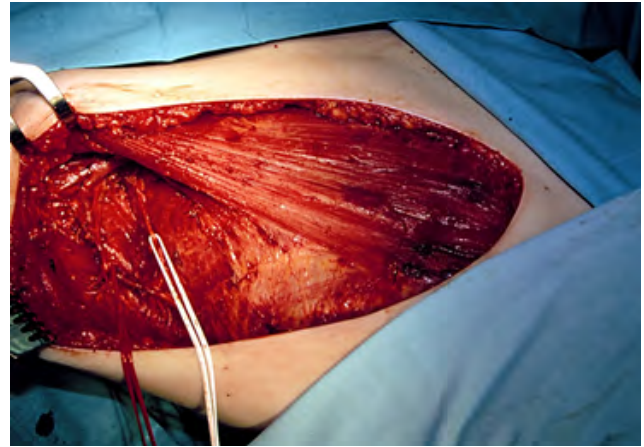


Figure 13: Mastectomy and axillary exenteration with saving thoraco-dorsal package, nervus longus and nervus intercostalis

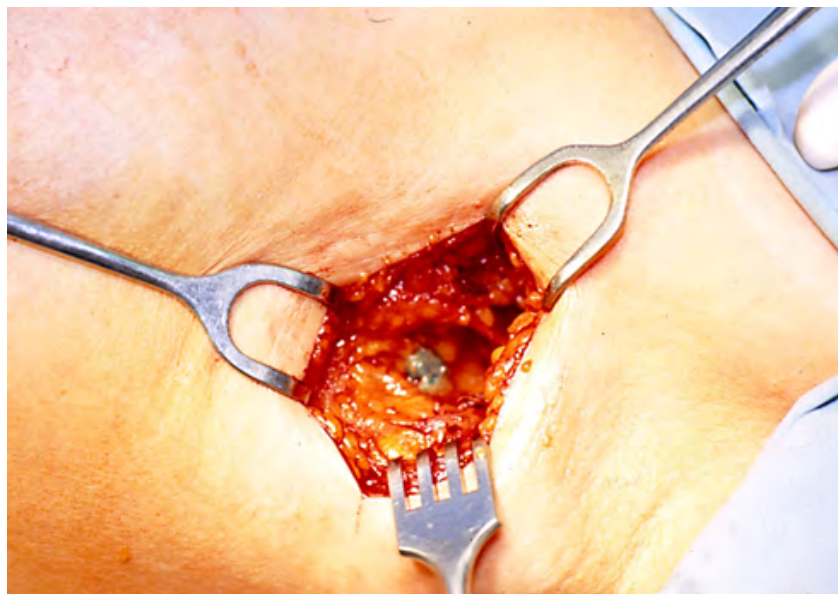


Figure 14: Axillary SNB (Patten Blue 2,5%). Application of modern trends of implantation plastic surgery in treatment of breast cancer

5. Difference in Approach for Limited and Amputation Surgery

The ratio of limited surgery and amputation of malignant tumor is defined by early diagnostics and of course by follow-up studies:

In Slovak Republic (0., I., II. Stadium)- 60%

In the world- more than 80%

Limited surgery in the world- 80-90%

National Slovak Oncology Institute - 1991 – 2020 – 4500 patients – 51,64% - 1995 - 2020 – 2950 patients -55,92% [2]

There is a need for early diagnosis and screening examination!

6. Mapping of Sentinel Lymph Node in Axilla in Breast Cancer (sentinel node biopsy, SNB)

A) Peroperative sentinel node biopsy includes:

*Contrast lymphography targeted on identifying and extirpating

first gradient lymph node for histologic examination in axilla and in in case of its negativity terminating surgical treatment without axillary exenteration

*Indication is T1N0M0, T2N0M0.

Contrast Substance

*P.B.V. – Patten methylene blue [1]

*RIZ – radio-isotope marked colloid

*Combination of both increases the effect to 99%

Placement of Application

*Subcutaneously, subareolar, peri tumorous

There is need to realize the placement of the lesion, because in case of carcinoma located in medial quadrants is detection of sentinel lymph node disputed, because it can affect parasternal or cervical nodes more often than axillary nodes.

Identification of Sentinel Lymph Node

*By surgeon (colored LN) macroscopically

*Manual gamma sonde

B) Target of perioperative SNB is:

*Limit seromas in axilla

*Exclude disorders of motility of upper extremity

*PREVENT OCCURRING OF LYMPHEDEMA [3]

Mapping of SNB in Axilla in Breast Carcinoma

*Success of the method- 95 – 99%

*False negativity of LN- 1-10%

*National Slovak Oncology Institute (1998 -2020)- up to 5% (in 209 patients) [2]

Using of technique of SNB in the world shows decreasing of axillary exenteration.

Indications for Reconstruction Surgery of the Breast

A) Cosmetic – correctional treatment

*Augmentation

*Reduction

B) Oncologic

* For benign lesions of breast gland

* For malignant lesions of breast gland

7. Discussion

The interest in reconstruction surgery of breast gland is psychologically wanted and needed by patients for many years. There has been propagation for self-examination all over the world for many decades used to be considered it as an early diagnostic, but according to examination modalities we figured that when the patient finds the lesion herself/himself, we are talking about staging T2. In times of digital mammography, it is even worse staging with decreasing survival rate. Small lesions found by digital modalities are standing more often for ductal carcinoma in situ which has much better prognosis. From surgical aspects it is possible these kinds of parenchymatous changes extirpate for histologic examination using Franke's driver, in lesions which are RTG contrast and in lesions, which are non-contrast by RTG, there is necessity to use non-magnetic MRI driver localization. In extirpation using only histogram there is no possibility to use RTG perioperative histogram, therefore there is need to do control MRI examination within 24 hours after surgery to be sure the lesion was extirpated completely.

Talking about sentinel node biopsy we need to consider that surgeon is the main prognostic factor, because more studies confirmed that experience of the surgeon increases the realization of sentinel node biopsy. Another factor increasing survival of the patient is

perioperative examination of sentinel lymph node by histopathologist, and in case of negativity there is necessity it is needed to follow with immunochemical examination of the LN, which in higher percentage 12 – 29% [4], detects metastatic involvement and spread of sentinel lymph node. All these aspects must be done very exact to follow up by another treatment of breast cancer patients.

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