Breast Cancer Surgery in Images

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As a picture speaks more than a thousand words, we tried to reflect, at least in part, on our surgical day-to-day practice on the 2nd Oncological Surgery Department of "Prof. Dr. Al. Trestioreanu" Bucharest Institute of Oncology in the field of breast cancer. And how could we not talk about imaging in breast cancer, when one of the reasons for low breast cancer mortality at present is early detection, which is performed through imaging investigations.

Mammographic screening is recognized as a success in this area (*Fig. 1*), but moreover, mammary ultrasound, a newer addition to this domain, also allows the detection of infraclinical cancers (*Fig. 2*).

The localization of these infraclinical lesions can be obtained preoperatively by mammographic technique using a harpoon (*Fig. 3*).

Under ultrasound guidance we can not only puncture cysts (*Fig. 4*), but also perform mammary biopsies for suspicious lesions (*Fig 5*).

Figure 1. Mammography - BIRADS 5 lesion

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Figure 2. Breast ultrasound – BIRADS 5 lesion

Early diagnosis allows in most cases conservative treatment because of the small size of the tumour (*Fig. 6*), with a very good aesthetic result (*Fig. 7*).

Selective axillary dissection and avoidance of unnecessary complete axillary dissection are achieved through biopsy of the sentinel lymph node. At "Prof. Dr. Al. Trestioreanu" Bucharest Institute of Oncology we implemented the technique of identifying the sentinel lymph node using a radioactive tracer in 2006 and we have carried out so far over one thousand such procedures (*Figs. 8, 9, 10*).

Sometimes oncoplastic surgery allows not only for breast preservation, but also safer surgery with better aesthetic result (*Fig. 11*).

Due to the extent of the disease, there are situations where mastectomy is mandatory (*Fig. 12*).

The changes in body image after mastectomy are important. Immediate breast reconstruction or at a distance attempts to solve this aesthetic problem and reduce the psychological impact. Since 1999 we have been performing immediate reconstruction and at a distance postmastectomy using implants at "Prof. Dr. Al. Trestioreanu" Bucharest Institute of Oncology (*Fig. 13*).

We perform various types of mastectomy depending on the stage of the disease, the characteristics of the patients, and the oncological treatment plan. (*Figs. 14, 15, 16, 17*)

The association of synthetic meshes allows for better aesthetic results (*Figs. 18, 19, 20, 21*)

Video-assisted surgery also finds its place in this pathology, easing dissection (*Fig. 22*).

We have performed both immediate post-mastectomy reconstructions with or without preservation of the areola and nipple, as well as at a distance (*Figs. 23, 24, 25*).

For patients with unilateral breast cancer and mutations of BRCA 1 or 2 genes, we performed bilateral mastectomy with immediate reconstruction (*Figs. 26, 27*).

This images shows how much breast cancer surgery has changed.

Figure 3. Hook-wire localization for non-palpable breast lesion

Figure 4. Breast cyst - FNAc under ultrasound guidance

Figure 5. Needle core biopsy using Mammotome

Figure 6. Macroscopic aspect of breast cancer

Figure 7. Breast conservative treatment for right breast cancer

Figure 8. Preoperative lymphoscintigraphy for sentinel lymph node detection using radioactive tracer

Figure 9. Sentinel lymph node biopsy – intraoperative aspect

Figure 10. Sentinel lymph node identified using radioactive tracer

Figure 11. Therapeutic reduction mammoplasty for breast cancer

Figure 12. Multiple microcalcifications on mammography – DCIS – surgical indication: mastectomy

Figure 13. Saline filled implant for breastreconstruction

Figure 14. Goldilock mastectomy

Figure 15. (A) Mastectomy – pectoralis fascia layer. (B) Mastectomy specimen – biopsy place marked with stitch

Figure 16. Skin sparing mastectomy incision

Figure 17. Mastectomy with deepithelialised skin flap for implant covering

Figure 18. Immediate breast reconstruction after mastectomy with implant and mesh

Figure 19. Immediate breast reconstruction with Becker implant and mesh

Figure 20. Mesh covering breast implant

Figure 21. Delayed breast reconstruction with tissue expander

Figure 22. Video assisted breast reconstruction with retropectoral implant placement

Figure 23. Delayed breast reconstruction using implant

Figure 24. Skin sparing mastectomy and immediate breast reconstruction using implant

Figure 25. Nipple sparing mastectomy and immediate breast reconstruction using implant

Figure 26. Right breast cancer and BRCA 1 mutation - preoperative aspect

Figure 27. Bilateral nipple sparing mastectomy, right axillary lymph node dissection and immediate breast reconstruction with implants – post operator aspect