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Pathways in Cancer

Clinical insight and analysis in advanced cancer care

Oncoplastic Surgery—A New Paradigm

Thiru Rajagopal, MD
with Christian Swanson, MD

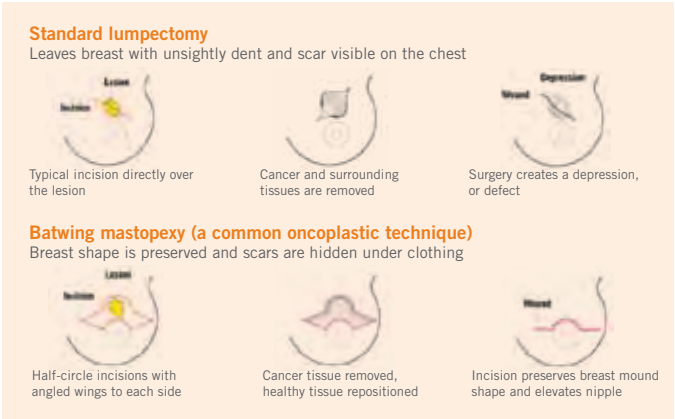
Breast conservation therapy (BCT) has been proven to be a safe alternative to radical mastectomy for treatment of patients with early breast cancer, as demonstrated by several large randomized trials. These trials have shown that breast conservation therapy with radiation equals mastectomy in terms of overall and disease-free survival in patients with early breast cancer. In the last two decades, breast conservation therapy (i.e., lumpectomy) followed by radiation has overtaken mastectomy as a better treatment option throughout the nation. However, all breast conservation therapies do not produce desired cosmetic results. Depending upon the size and site of tumors, a fair number of lumpectomies produce deformity, asymmetry of the breast and a high rate of re-excision.

Oncoplastic surgery (OPS), otherwise known as therapeutic mammoplasty, was popularized by Krishna Clough (Curie Institute, Paris, 1980) and Melvin Silverstein (Kirk School of Medicine, USC, CA). It is becoming a new paradigm to improve the cosmesis following breast conservation therapy. It is a combination of synchronous oncological surgery with plastic reconstruction to improve cancer resection with high quality aesthetic outcome. It can be performed at the time of original surgery. It involves application of oncological principles with reconstructive techniques. Most of the techniques following lumpectomy, however, can also be applied during skin sparing as well as nipple areolar sparing mastectomies.

The major goals involving oncoplastic surgery are complete removal of the cancer with wider margins and excellent cosmesis. There are several techniques described by different authors in the recent literature. They are classified into two levels based upon amount of breast tissue removal, level one involving about 20% of the removal. There are several techniques recommended based upon size of the breast and morphology and location of the tumor in the breast. Most of the procedures involve rearranging and relocating the tissue. Other complex procedures require reduction and replacement with flaps and tissue transfers. These procedures can be done by a trained breast surgeon, and a complex procedure requires coordination with a plastic surgeon. These procedures require proper planning and multidisciplinary participation.

There are several advantages associated with oncoplastic procedures, namely, wider resection, higher percentage of clear margin, reduced number of re-excisions and low conversion rate to mastectomies, in addition to better cosmesis and patient acceptability. It can be done following neoadjuvant chemotherapy and can be combined with accelerated breast radiation, especially intraoperative radiation. The long-term overall and relapse-free survival rate is comparable with traditional lumpectomy and radiation. In select groups of patients with low-grade tumors, radiation may be avoided following oncoplastic resection. These procedures help reduce the asymmetry in the contralateral breast.

Oncoplastic surgery is a third pathway between lumpectomy and mastectomy. Every resection merits reconstruction and these procedures offer promise for optimal cancer clearance and better cosmesis.



Sources: The Lancet; Dr. Melvin Silverstein

Mercy Cancer Institute of Greater Sacramento
A Dignity Health Member

Updates from the Mercy Cancer Institute

Costanzo Di Perna, MD

In this issue of *Pathways in Cancer,* Mercy Cancer Institute physicians discuss breast cancer prevention and treatment with great eloquence and clarity. It is truly a testament to the wonderful care Drs. Rajagopal, Swanson, Wandel and Herron deliver to their patients and to the clinical excellence of the Mercy Cancer Institute overall.

In addition, the Institute has some exciting announcements to share with you. We will begin Breast Cancer Teleconferencing this July. We also have planned breast cancer support groups and yoga classes to be held at the Mercy Cancer Center; please call 916.556.3200 for more information. Finally, join us for our upcoming Lung Cancer Screening dinner at Piatti's in Sacramento on July 25th. Email *Sergio.Vincenti@dignityhealth.org* or call 916.556.3128 for more information and to RSVP.

Fat Grafting in the Breast after Treatment for Breast Cancer

Amy Wandel, MD

Fat has been used as a filling material to correct congenital, posttraumatic and iatrogenic contour deformities in the face for over 30 years. Multiple studies of fat used for facial reconstruction have shown it to be an ideal graft material—it is safe, readily available and carries no risk of immune response or rejection. In fact, recent studies have shown fat to have regenerative qualities when injected into a radiated field. Yet, fat has been largely ignored in this country as a source for grafting material in the breast cancer patient. It has been used in Europe for many years but there has been a lack of scientific evidence regarding the safety and efficacy of fat in the breast until recently.

> "More recent studies have shown that these microcalcifications can be differentiated from calcifications which occur with malignancy."

The first studies performed on fat grafting to the breast in the United States involved patients undergoing augmentation of their breast. These studies showed injected fat to be a stable filling material. However, there was concern about using fat grafts and cancer surveillance after a report by Wang of microcalcifications occurring around fat grafts in the breast.

More recent studies have shown that these microcalcifications can be differentiated from calcifications which occur with malignancy.

Women have been offered a choice of autologous tissue vs. implant-based reconstruction for more than 30 years. Improvement in techniques and the reintroduction of silicone gel implants have significantly improved the aesthetic results in patients undergoing breast reconstruction. For post-mastectomy patients, reconstruction with autologous tissue offers a more natural breast but at the cost of a longer recovery and a second surgical site. Some patients with autologous reconstruction have inadequate volume or deformities caused by loss of a portion of the flap. In 2005, Spears reported on the safety and efficacy of autologous fat grafts in these patients. He treated both patients with implants who had rippling caused by thin tissues overlying the implant and patients who had defects after autologous tissue reconstruction. In his study, all the patients reported a good to excellent result.

Radiation significantly improves locoregional control of breast cancer and many more women are being offered this adjunct therapy. Radiation can negatively impact reconstruction though with a 60% complication rate in women who have implant-based reconstruction and radiation therapy. Capsular contracture rate is very high at 60% of radiated patients with implants. And in women with autologous tissue reconstruction, radiation can cause volume changes and loss of tissue. Recent studies have shown autologous fat grafting to not be successful in correcting these deformities but the fat may actually improve the skin quality after radiation and reduce capsular contracture rate.

"Recent studies have shown autologous fat grafting to not be successful in correcting these deformities but the fat may actually improve the skin quality after radiation and reduce capsular contracture rate."

Here at the Mercy Cancer Institute, we have used autologous fat grafting to correct defects in patients with autologous reconstruction and to smooth out areas of rippling in thin patients. Recently, we used fat to correct a deformity in a patient after a lumpectomy with radiation therapy with good results.

We are very excited to offer this option to patients as a safe and effective way to treat these post-reconstructive defects with minimal to no down time and absolutely no impact on their cancer surveillance or recurrence rate.

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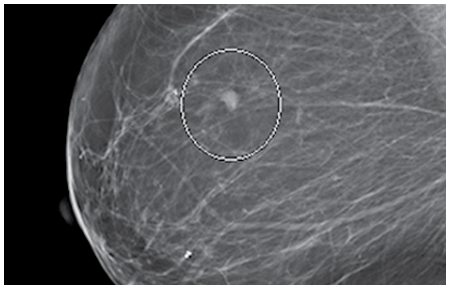
Early Detection Saves Lives

Daniel E. Herron, MD

It is frightening that breast cancer is the most common cancer in women, and second only to lung cancer in the number of deaths it causes. We know, however, that more than 90% of women will survive breast cancer if we can find the cancer when it is small and before it has spread out of the breast. Fortunately, we have a test that can find early small localized cancers and save women's lives. It is called mammography. It is the only imaging exam available that has been shown to decrease the chance of women dying from breast cancer by more than a third.

That is the good news. The frustrating news is that only about half of women 40 years and older are getting their recommended yearly mammogram. It is especially important that younger women get their mammogram every year as tumors in younger women tend to grow and spread more quickly. Also, since four out five women diagnosed this year with breast cancer will be the first person in their family with the disease, all women regardless of family history should have a mammogram.



Here at the Mercy Cancer Institute, we recently had a patient who had not had a mammogram in over 10 years and she came in because her ribs hurt. Breast cancer had spread through her bones. Compare that to another woman who had her yearly mammogram, where her small cancer was found and treated without requiring removal of her breast. Twenty years later she is healthy and enjoying her retirement and family. She is my mom.