

Advances in Breast Cancer Treatment and Surgery: A Guide for General Practitioners



Dr Anitha Karunairajah

General Surgeon, Breast Cancer Surgery

Joondalup Clinic, Suite 115, Medical Centre (West), Shenton Avenue,
Joondalup WA 6027

P: (08)6166 3742 F: (08) 6311 7393 E:
reception@perthbreastsurgery.com.au

Breast cancer remains one of the most prevalent cancers worldwide, affecting approximately 1 in 7 women and ranking as the second most common cause of cancer-related death among females. However, the landscape of breast cancer treatment is evolving rapidly, bringing improved survival rates and better quality of life for patients.

Evolving landscape of Breast Cancer Treatment

One of the most significant advancements in breast cancer care is the move towards personalised treatment. Tumour profiling and precision medicine now allow for therapies tailored to the individual patient's tumour biology, reducing treatment toxicity while improving efficacy, leading to prolonged survival and better quality of life.

Innovations in Breast Surgery

Surgical techniques have progressed significantly, offering patients more aesthetically favourable and functionally beneficial options.

Oncoplastic Breast Surgery

Oncoplastic techniques combine plastic surgery principles with breast-conserving surgery, allowing for better cosmetic outcomes. These techniques involve:

- **Volume displacement:** Repositioning breast tissue during tumour removal to maintain a natural shape.
- **Volume replacement:** Using perforator flaps (fatty tissue with its own blood supply) to fill defects without requiring complex microvascular reconstruction.
- **Therapeutic mastoplasty:** A technique where tumour removal is integrated with breast reduction, particularly beneficial for patients with larger breasts.
- **Skin and Nipple Sparing Mastectomy:** These advanced mastectomy techniques preserve the breast skin and, when appropriate, the nipple-areola complex, enabling immediate reconstruction with superior cosmetic and psychological outcomes.

Advancements in Radiation Therapy

Radiotherapy has also seen significant improvements, focusing on reducing treatment duration and side effects:

- **Partial Breast Radiation Therapy:** A technique that delivers targeted radiation to the tumour bed rather than the entire breast. This approach is particularly useful for

selected early-stage breast cancer patients, reducing radiation exposure and treatment duration while maintaining efficacy.

- **Hypofractionated Radiation Therapy:** Delivers higher doses over fewer sessions, maintaining effectiveness while minimising patient burden.
- **Intraoperative Radiation Therapy (IORT):** Administered during surgery, this technique reduces the need for postoperative radiation, particularly in elderly patients with early-stage cancer.

Systemic Treatments and Targeted Therapies

Targeted Therapy

- **HER2-positive breast cancer:** Breakthrough therapies such as Trastuzumab (Herceptin), Pertuzumab, and Trastuzumab Deruxtecan have drastically improved patient outcomes.
- **CDK4/6 inhibitors:** Drugs like Palbociclib, Ribociclib, and Abemaciclib are enhancing survival rates in hormone receptor-positive breast cancer.
- **PARP inhibitors:** Used in BRCA-mutated cancers, these drugs, such as Olaparib exploit defective DNA repair mechanisms to kill cancer cells.

Immunotherapy

Emerging as a promising option for triple-negative breast cancer (TNBC), immunotherapy drugs like pembrolizumab (Keytruda) are offering new hope in an area historically associated with poorer prognoses.

Neoadjuvant Therapy

Preoperative treatments, including chemotherapy and targeted therapies, are increasingly being used to shrink tumours before surgery especially in HER-2 positive and triple negative breast cancers. This approach allows for more conservative procedures and facilitates response-guided surgical decisions.

Genomic tests such as Oncotype-DX is used to assess the risk of recurrence in certain types of early-stage breast cancer and helps avoid unnecessary chemotherapy for low-risk patients while ensuring high-risk patients receive appropriate treatment.

Advances in managing metastatic breast cancer

Genomic profiling is a cutting-edge approach in cancer treatment that analyses a tumour's genetic mutations to guide personalised therapy. By identifying specific alterations in DNA, such as mutations in BRCA1/2, and is particularly valuable in metastatic breast cancer.

The Multidisciplinary Approach and the Role of the GP

Breast cancer management requires a collaborative effort involving surgeons, oncologists, radiologists, pathologists, and other healthcare professionals. The GP plays an integral role in this multidisciplinary team.

Pre diagnosis responsibilities

- Screening and early detection through clinical examination and imaging referrals.
- Identifying high-risk individuals and referring them for genetic counselling (e.g., BRCA mutations, strong family history).

Post diagnosis & during treatment

- Monitoring treatment side effects, including chemotherapy or radiation induced toxicities.
- Providing emotional and psychological support, with referrals to mental health services when necessary
- Direct patients to resources such as Cancer Council, Breast Cancer Care WA & Breast Cancer Network Australia for ongoing information & support

Post-Treatment and Survivorship Care

- Annual mammography and clinical exams for long term surveillance.
- Managing side effects of hormonal therapies, including osteoporosis monitoring for patients on aromatase inhibitors.
- Addressing lifestyle modifications to reduce recurrence risk.

Referral Information for Surgeons

When referring patients to breast surgeons, include:

- Mammogram and ultrasound report of both breasts
- Core biopsy ± FNA report
- Full histopathology report including receptor status (ER/PR) and HER2 DISH
- Clinical findings
- Patient's medical history and medications

As frontline healthcare providers, GPs play a vital role in early detection, screening, and lifestyle modification for breast cancer patients. They are essential in supporting and coordinating ongoing care, and a crucial member of the patient's multidisciplinary team.