Training in breast reconstruction: a new chapter in breast surgery

Reconstruction of the breast after mastectomy was first popularized more than 30 years ago using implants, myosubcutaneous flaps, or a combination of these techniques. In the early days, there were concerns about the possible adverse effects of breast reconstruction (BR) on the development and detection of subsequent recurrence. This meant that most patients had to wait at least 2 years before undergoing delayed BR. Attitudes changed slowly as emerging evidence failed to confirm worries about oncological safety, but now immediate BR is becoming increasingly popular. A one-stage approach avoids many of the disadvantages of a delayed procedure, including greater morbidity, disability, psychological distress, cost and the inconvenience of two operations.

Although implant-based reconstruction rates have doubled over the last 10 years (National Breast Implant Registry, Salisbury, UK), only a small number of women undergo BR today. Moreover, access to reconstruction is variable across the country, with a twofold difference in the number of reconstructions performed between the regions with the lowest and highest rates. In the USA, a woman's chances of having BR depend on a number of factors, including age, stage, income, ethnicity, hospital and region (Morrow et al, 2001) with similar regional differences to those seen in the UK.

ENGINES FOR CHANGE

A number of simultaneous developments are changing all this, moulding the availability, configuration and delivery of BR services in the UK. Unmet demand, trainee expectations and greater specialization are leading to a fundamental reconfiguration of training programmes and an extension of the skill base of surgeons managing breast cancer. Up to 50% of women offered BR will go ahead with reconstruction at the time of mastectomy (Bremner-Smith et al, 1997) but reconstructive surgery is carried out in fewer than 1 in 10 women in the UK today, largely because of a shortage of surgeons trained in these procedures. Moreover, a survey of consultant breast surgeons in the UK and Ireland (Callaghan et al, 2002) has unearthed a major variation in the provision of BR. Less than half of today's breast surgeons offer BR, and older surgeons are much less likely to perform BR than their younger colleagues.

This situation was compounded by a recruitment 'crisis' in specialist breast surgery. In 1999, there were 2.23 vacant consultant posts in breast surgery for every fully qualified trainee (Cameron and Johnson, 2000). Foreshortened training programmes, a shorter working week and an increase in consultant numbers have stripped breast surgeons of the wide skill base of general surgeons, and these have not been replaced by other technical skills and challenges. As a result, breast surgery has become an increasingly unattractive option for trainees, who regard the subspecialty as technically unchallenging compared with other specialties (Rainsbury and Browne, 2001).

But a lot has happened since 1999. A large majority of breast trainees (84%) want to acquire technical skills in BR and growing numbers of consultant breast surgeons attend BR courses run by the Royal College of Surgeons of England and Regional training centres. In response to a proposal made by the Association of Breast Surgeons at the British Association of Surgical Oncology to the Council of the British Association of Plastic Surgeons, an 'Interface' breast training group was established in March 2000. The concept of the oncoplastic or 'total' breast surgeon – trained in all aspects of diagnosis, resection, reconstruction and clinical management – was born.

AIMS OF THE INTERFACE GROUP

The aims of the Interface group are threefold. First, to improve the service to patients by facilitating interface training. Second, to develop cross-specialty training opportunities for specialist registrars and consultants and, last, to bring forward training in oncoplastic surgery to an earlier stage in a trainee's career. These aims were agreed at a time when breast surgery was singled out as a 'shortage' subspecialty by the Department of Health and the Specialist Advisory Committee in General Surgery. A combination of these factors led to a successful bid for funding of nine new specialist registrar posts in general surgery which were earmarked for oncoplastic breast surgery. Breast units in England were invited to apply for recognition as training units, and nine were selected.

The posts are being assessed through an independent detailed evaluation exercise – to flag up strengths and weaknesses and their overall educational value. Feedback has highlighted a number of benefits, including focused training, a broad spectrum of experience, good supervision, flexibility, mentoring and no 'on call' commitments.

CURRENT DEVELOPMENTS

Several new oncoplastic initiatives have been introduced into clinical practice. In 1997, a small group of breast and plastic surgeons launched the first course at the Royal College of Surgeons of England, teaching fundamental techniques in BR. These course programmes are based on anatomical

prosection and practical demonstrations, and have attracted trainees and trainers from both specialties.

More recently, certain aspects of the programme have been regionalized with the development of theatre-based courses in a number of hospitals, demonstrating a wide range of oncoplastic procedures.

These developments represent a 'paradigm shift' in training (Baum, 2003), with breast surgeons acquiring a range of reconstructive skills and plastic surgeons acquiring a range of oncological skills.

Although this represents a radical departure from current practice, it makes sense. With limited hours of work, foreshortened training programmes, consultant expansion and ever-increasing specialization, the days of the general surgeon with an interest in breast surgery and the general plastic surgeon with an interest in BR are numbered. Most breast trainees do not wish to continue elective general surgery, and a significant minority do not wish to perform emergency surgery (Rainsbury and Browne, 2001).

NEW SKILLS

The birth of a new specialty brings with it new techniques, a new curriculum and the need for new guidelines linked to an audit of outcomes. Skin-sparing mastectomy combined with immediate reconstruction and breast-sparing reconstruction are two new operative approaches which are improving outcomes in breast cancer surgery. They illustrate the principles of oncoplastic surgery – procedures which combine the best principles of resection to achieve wide, tumour-free margins, with the best principles of reconstruction to optimize the cosmetic outcome while minimizing complications. During skin-sparing mastectomy, the breast is removed through a small, central periareolar incision. Reconstruction within the intact skin envelope creates a symmetrical breast with a life-like shape and ptosis, avoiding the unsightly scars of conventional mastectomy.

Breast-sparing reconstruction is a novel oncoplastic approach which combines partial mastectomy with immediate reconstruction of the resection defect using the skills required for full BR or breast reduction. These procedures are most useful when resecting 20–40% of the breast volume – a group of patients normally treated by mastectomy.

FUTURE MODELS

Not every breast surgeon wishes to perform BR, but those who decide to acquire and maintain oncoplastic skills will find less and less time for other subspecialty interests. Future curricula for breast surgeons are likely to reflect the needs of two types of specialist – the general surgeon with an interest in breast surgery, and the oncoplastic breast surgeon coming from a background of general or plastic surgery.

The rising popularity of oncoplastic surgery has highlighted the need for guidelines to inform the development of oncoplastic services. A guidelines writing group has been established with a multidisciplinary membership, including breast and plastic surgeons, a breast care nurse specialist, a clinical psychologist, a representative of the Commission for Health Improvement, and implant manufacturers. Key aspects will be addressed, including the patient's journey, technique selection, resources, interprofessional structures and relationships, data collection, patient information, and education and training. This unique initiative will provide a valuable source of reference for multidisciplinary teams and trusts introducing these services.

CONCLUSION

A woman's 'right' to be offered BR – spelt out in the latest *Guidance on Cancer Services* (Department of Health, 2002) – is putting pressure on breast units to provide this service. Surgeons are tackling their responsibilities head-on, through programmes of training and education, through the development of evidence-based guidelines and through audit and research. BR is transforming breast surgery into a specialty which is both intellectually and technically challenging. This is raising interest among today's trainees, and will improve the overall management of women with breast cancer. HM

Dick Rainsbury
Director, Oncoplastic Breast Unit
Royal Hampshire County Hospital
Winchester SO22 5DG

Baum M (2003) Is it time for a paradigm shift in the training of breast surgeons as a sub-specialty? *The Breast* **12:** 159–60

Bremner-Smith A, Straker V, Abel A, Rainsbury R (1997) Choices and experiences of women offered breast reconstruction. *Eur J Surg Oncol* **23:** 99

Callaghan C, Couto E, Kerin M, Rainsbury R, George W, Purushotham A (2002) Breast reconstruction in the United Kingdom and Ireland. *Br J Surg* **89:** 335–40

Cameron IC, Johnson AG (2000) Mismatch between trainees' subspecialist interest and advertised jobs; worrying implications for upper gastrointestinal trainees. *Br J Surg* **87:** 362–73

Department of Health (2002) *Guidance on Cancer Services. Improving outcomes in breast cancer. Manual update.* Department of Health, London

Morrow M, Scott SK, Menck HR, Mustoe TA, Winchester DP (2001) Factors influencing the use of breast reconstruction post-mastectomy. A National Cancer Database study. *J Am Coll Surg* **192:** 1–8

Rainsbury RM, Browne JP (2001) Specialisation in breast surgery: opinions of UK higher surgical trainees. *Ann R Coll Surg Engl* **83**(Supp): 298–301

KEY POINTS

- Breast reconstruction (BR) is an oncologically safe technique.
- Few women undergo BR in the UK, and access to reconstruction services is very variable.
- Trainees find breast surgery technically unchallenging and want to learn BR.
- Breast and plastic surgeons have set up an Interface training group to develop cross-specialty training programmes.
- Nine new national oncoplastic training posts have been established.
- New oncoplastic techniques are improving outcomes and reducing the need for mastectomy.
- New curricula and guidelines will reflect the changing skillbase of tomorrow's breast surgeons.