
FOR DEBATE

Breast substitution

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Breasts are irreplaceable. They are complex, dynamic organs which change considerably in external form and internal function with the rhythms of life and age. Unlike liver, hair or finger nails, the breast cannot be regenerated; nor can it be transplanted. Surgical removal or distortion of the breast in the course of cancer surgery is thus an irreversible act. The breast cannot be reconstructed in the true sense, but we can substitute its form and texture.

Substitution of the breast form may be achieved by external prostheses or by surgical techniques. There is a wide choice of prostheses and clothing which help reproduce normal breast form to the outside observer. There is a range of operations which allow substitution of excised breast with skin, fat, muscle from various body sites, and synthetic prostheses. These operations may be offered immediately, at the time of cancer surgery, or as a delayed procedure after adjuvant cancer treatment is complete.

Substitution surgery has received a high public profile in recent years, fuelled by the proponents of the various technical schools. Many experienced cancer surgeons are nevertheless uncomfortable with the debate. They will be aware of the insidious and emotive argument which suggests that surgeons not enthused by primary reconstructive surgery are letting their patients down, are outdated, or are inappropriately trained. We must restore balance to the discussion as to when breast substitution surgery should be offered, and by whom, in a field of considerable subjectivity.

The foremost duty of the specialist cancer surgeon is to coordinate the optimum management of the cancer itself. This may be defined as the minimization of risk of fatal disease progression with the least possible short and long-term morbidity, using evidence-based practice. It is to this objective that a woman will repose her intimate trust in a surgeon who will conduct potentially disfiguring and deforming surgery upon her.

The first question which most women ask when faced with the disclosure of the diagnosis is 'will I survive the disease?'. This question may be posed in many forms and expressed through many actions, often preceded by

expressions of distress. The acute and enduring fear aroused by the diagnosis of breast cancer can induce tortured thought processes, and many straws may be clutched.

A further issue which the patient will consider is her response to her post-surgical appearance. In the mammocentric media culture in the Western world, men have been sensitized to the idealized vision of the balanced, symmetrical pair of breasts and the stylized index of health and happiness which they purport to represent. Fortunately, the wide media coverage of breast cancer issues leaves many women with an informed view of breast surgery and its consequences. Most know of friends, relatives and media figures who have continued to make a success of their lives after mastectomy. They also recognize that the breast form doth not the whole woman make.

For many patients, the question of breast substitution does not arise. The early detection of many tumours through screening permits safe local excision with minimum deformity and scarring. The skilfully performed wide local excision of a larger tumour allows safe clearance in many other cases. The methodical use of adjuvant radiotherapy and chemotherapy allows oncological surgeons to broaden the range of patients upon whom they can safely conduct conservative surgery, even upon those with larger and more centrally placed lesions. Late local recurrence is not necessarily the technical or therapeutic failure which some commentators and arbitrary guidelines would have us believe. It is certainly a risk worth weighing in the therapeutic balance in planning conservative surgery. The possibility of revision surgery or mastectomy some years hence may be a price which women are willing to pay for conservation surgery now.

For those women and their partners faced with the need for mastectomy, the majority have reached a state of emotional and relational stability and maturity whereby breast form is not an important issue.¹ Others opt for a mastectomy even when a more conservative procedure is on offer, and often for good and sound personal reasons. These include the greater freedom from long-term fear of local recurrence, and the reduced need for adjuvant radiotherapy to the remaining breast tissue. Yet others have disease which is judged to merit aggressive early adjuvant

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radiotherapy to the chest wall or axilla, such that immediate substitution surgery seems biologically inappropriate.

When we have accounted for these patients, there remain two groups of women for whom primary surgical breast substitution becomes an issue. The first is that group of women who are absolutely certain, for whatever personal reasons, and whichever surgeon they consult, that a substitution operation should be conducted. These women will always seek out a surgeon with a reconstructive interest and should be assisted to do so. The second is that larger group of women who are uncertain as to their wishes and needs, and who are suggestible to the wishes of their surgeon in respect of primary substitution surgery. This is the category of patients which most probably accounts for the substantial variation in substitution surgery rates from one specialist centre to another.

Claims that variation in patient attitudes from one geographic region to another are a key factor are probably wide of the mark. There is a homogeneity of information available through the media across the UK and elsewhere. Attitudes undoubtedly vary with age, education and socio-economic status, but there is no good evidence, or even anecdotal experience, of significant regional variations when corrected for these factors. It is thus likely that the personality, the ambitions and views of the individual breast surgeon are the key determinant of the rate of substitution surgery in any one centre. The surgeon has considerable authority to obtain agreement to many different strategies in an uncertain and suggestible patient.

Where substitution surgery is determined upon, what is the best approach? There are a number of options.² The expandable subpectoral prosthesis is promoted as a simple device for the 'occasional' substitution surgeon. Unfortunately, this approach has its problems. The device usually sits high on the chest wall, anchored by a muscle whose normal function is now significantly disturbed, more so and progressively by expandable prostheses. Subpectoral prostheses are most likely to achieve passable symmetry for the smaller, firmer breast. In this group of patients, a lightweight external prosthesis can provide the most effective and comfortable symmetry with the preserved contralateral breast.

For larger and more complex reconstructions, both the pedicled latissimus dorsi flap and the trans rectus abdominis myocutaneous flap in its pedicled or free microvascular transfer forms have their proponents. All techniques can yield excellent results in the hands of skilled surgeons. Additional procedures include nipple reconstruction and contralateral reduction mammoplasty for the larger breast. However, once embarked on the surgical substitution journey, a patient may find herself on a slippery slope of additional procedures and revision operations, and much greater dependancy upon her surgeon than the more conservatively managed woman.

No surgery is conducted without risk to the patient, and complications can range from the trivial to the fatal. It is thus no less incumbent upon surgeons in the breast field than in any other discipline to seek to minimize operative interventions on sound philosophical grounds. There are strongly held views in different schools of substitution surgery, and no single best bet. We can readily list the pros

and cons of each technique, and the acute, short, medium and long-term complications and relative costs. Critically, all reconstructive techniques impart a significant additional technical risk upon the cancer patient which may leave her worse off than when she started, as for example the infarction of the TRAM flap or the removal of the subpectoral implant.

The truth about reconstructive outcomes is not always apparent. We are not always presented with informative data on the long-term outcome of breast substitution surgery. We may ask about the true long-term removal rate for synthetic prostheses. What is the objectively and independently assessed satisfaction and dissatisfaction rate after each class of operation? What are the effects of time, atrophy and gravity on the substituted and the contralateral breast? What are the practical and functional consequences for the loss of latissimus dorsi or rectus abdominis muscle, or for the insensate TRAM-derived breast mound? What is the whole-of-life physical, social, inter-personal and emotional cost of substitution surgery, independently and impartially assessed?

That a surgical procedure is technically possible is not sufficient justification for its introduction in this regard. The posed post-operative photograph of the surgically substituted breast mound does not convey this information. It should not be enough to show stasis imagery, which can be very persuasive, or to discuss the short-term complication rates alone. Where new surgical techniques are introduced, these must be to the highest ethical standards, fully justified on theoretical grounds and validated wherever possible by experimental evidence, controlled trials and the broadest impact and risk assessment for the patient.

How should the initial consultation with the surgeon be constructed? The separation of the cancer consultation and the substitution consultation is important. There is a limit to the information which most women can take on board in any one consultation. The arguments are complex in both fields, and discussion of one topic should not distract the patient from careful consideration of the other. Most importantly, the offer by a surgeon of a substitution operation may imply a lack of confidence or enthusiasm for the unsubstituted post-mastectomy appearance, which is a heavily weighted value judgement. Promotion of reconstructive surgery by the surgical enthusiast immediately places the patient on the slope towards agreeing to substitution, which may be unnecessary or initially unwanted. The 'patient's preference' is rarely that simple.

Who should conduct substitution surgery, and where? There remains a very strong case for the consolidation of breast substitution surgery in the hands of specialist plastic surgeons, for several reasons. Regionally based plastic surgeons service a much larger population base than is attainable by cancer specialists in individual hospitals, and they can thus develop a broader skills base. Their involvement distinguishes the cancer management from the issues of form and cosmesis. For individual cancer surgeons with a desire to conduct substitution surgery to a high standard in their own hospitals, a substantial volume of cases may only be attainable by persuading patients in that population of 'uncertain' indications, who in conservative centres would not undergo surgery, to accede to surgical substitution. In yet other centres, oncoplastic skills may be

combined to the highest standards in individual hands on lower volumes of cases.

What are the implications for training specialist surgeons? We are currently going through a philosophical phase of superspeciality focus, wherein breast surgeons are expected to develop reconstructive skills as a condition of their 'highest level' professional recognition. This may produce technically proficient breast surgeons, but with an organ specific and clinically narrow vision. The hallmark of the good surgical clinician is the ability to harness the vagaries, the nuances and the innermost fears and aspirations of the human condition to the processes of disease and to the possibilities and limitations of surgical technologies and skills. We must thus continue to argue strongly for the broad, cross disciplinary education of our oncological surgeons, as for example combining depth of understanding in the surgical oncologic and adjuvant therapeutic specialities.

The costs and consequences for health service provision arising from increased rates of substitution surgery are high, but might reasonably be borne by the community if the arguments of the proponents are persuasive. We may argue the case for national coordination, evaluation and oversight of surgical substitution programmes as for other specialized treatments. At the very least, we must expect the highest standards of evidence-based medicine using quantitative measures of health gain and loss and long-term follow-up to underpin the aspirations of the proponents of surgical substitution and 'oncoplastic' therapy.

Breast substitution surgery remains a complex and emotive issue, for which there is no single 'best buy', and for which the interaction of the surgeon's and the patient's personalities remain the key determinants of intervention. There is room in a complex and dynamic profession for many schools of thought and approaches to the problems posed. However, those with a particular desire to undertake substitution surgery have no particular claim to the moral high ground in the debate. It should be permissible for the specialist breast cancer surgeon to continue to oppose the interventionist surgical substitution line for uncommitted patients. Surgeons should make every effort to help the vulnerable patient, her partner, family and acquaintances feel confident about her post-mastectomy appearance without pressing additional surgery upon her. This is entirely consistent with ensuring full access to a specialist regional reconstruction service for those patients determined upon that route.

References

1. Friedeberger J. The false breast. Should we go for it so quickly? *Br Med J* 1996; **313**: 1014–5.
2. Watson JD, Sainsbury JRC, Dixon JM. Breast reconstruction after surgery. In the ABC of Breast Diseases. *Br Med J* 1995; **310**: 117–21.