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Dermal fat graft from simultaneous abdominoplasty as an adjunct to revision aesthetic and reconstructive breast surgery: A poor man's acellular dermal matrix?

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ABSTRACT

INTRODUCTION: The global use of acellular dermal matrices as an adjunct to tissue expander or implant-based breast reconstruction, by surgeons wishing to cover and support the inferior breast pole, has increased in frequency in the last two decades. However despite the reported enhanced cosmetic outcomes, issues regarding their cost effectiveness have led to their infrequent use within the UK National Health Service and the need for an equally efficacious but cheaper alternative.
PRESENTATION OF CASE: We report two patients requiring bilateral revision breast surgery for severely asymmetrical, tender, ptotic breasts and cosmetically poor abdomens. Both were denied assisted acellular dermal matrix reconstructive surgery on the state NHS system and unable to afford the private costs. We therefore utilised free dermal fat grafts, harvested from concomitant abdominoplasties to extend the pectoralis major muscle and smoothen surface irregularities.
DISCUSSION: Both patients achieved excellent cosmetic outcomes and aside from a small, spontaneously resolving abdominal site seroma in one patient, have remained free of any complications for over two years. This cost effective procedure is only feasible in patients with an adequate pannus who are amenable to the extra surgery and resultant scarring.
CONCLUSION: We herein report the use of free dermal fat graft in revision aesthetic and reconstructive surgery in a manner akin to recent acellular dermal matrix use. The comparable enhanced aesthetic outcomes, minimal complication rate and substantial cost savings merit dissemination to a global audience and encourage surgeons to consider this economic alternative.

1. Introduction

Acellular dermal matrices (ADMs) are increasingly being adopted world-wide as an adjunct to post-mastectomy breast reconstruction specifically to cover the inferior pole of breast prostheses and increase the volume of the subpectoral pockets.[1] They have also been used to treat implant malpositioning, rippling and capsular contracture in aesthetic breast surgery.[2] Despite the enhanced cosmetic outcomes, minimal recurrence and acceptable failure rates ADMs, such as Alloderm and Strattice, are not routinely available on the UK National Health Service (NHS) because of concerns regarding their cost-effectiveness. However, by utilising autologous dermis one can simulate the beneficial outcomes associated with ADMs and circumvent their costs. We report two patients in whom free dermal fat grafts (FDFGs), harvested from concomitant abdominoplasties, were used to optimise revision implant-based aesthetic and reconstructive breast surgery.

2. Presentation of cases

2.1. Patient 1

A 35-year old female had undergone adjuvant chemotherapy and radiotherapy following subcutaneous mastectomies with axillary clearance and immediate bilateral implant-based breast reconstruction, for invasive carcinoma 21 months earlier at a district general hospital. She was referred by the medical oncologists for revision breast surgery to address severe malpositioned, painful,

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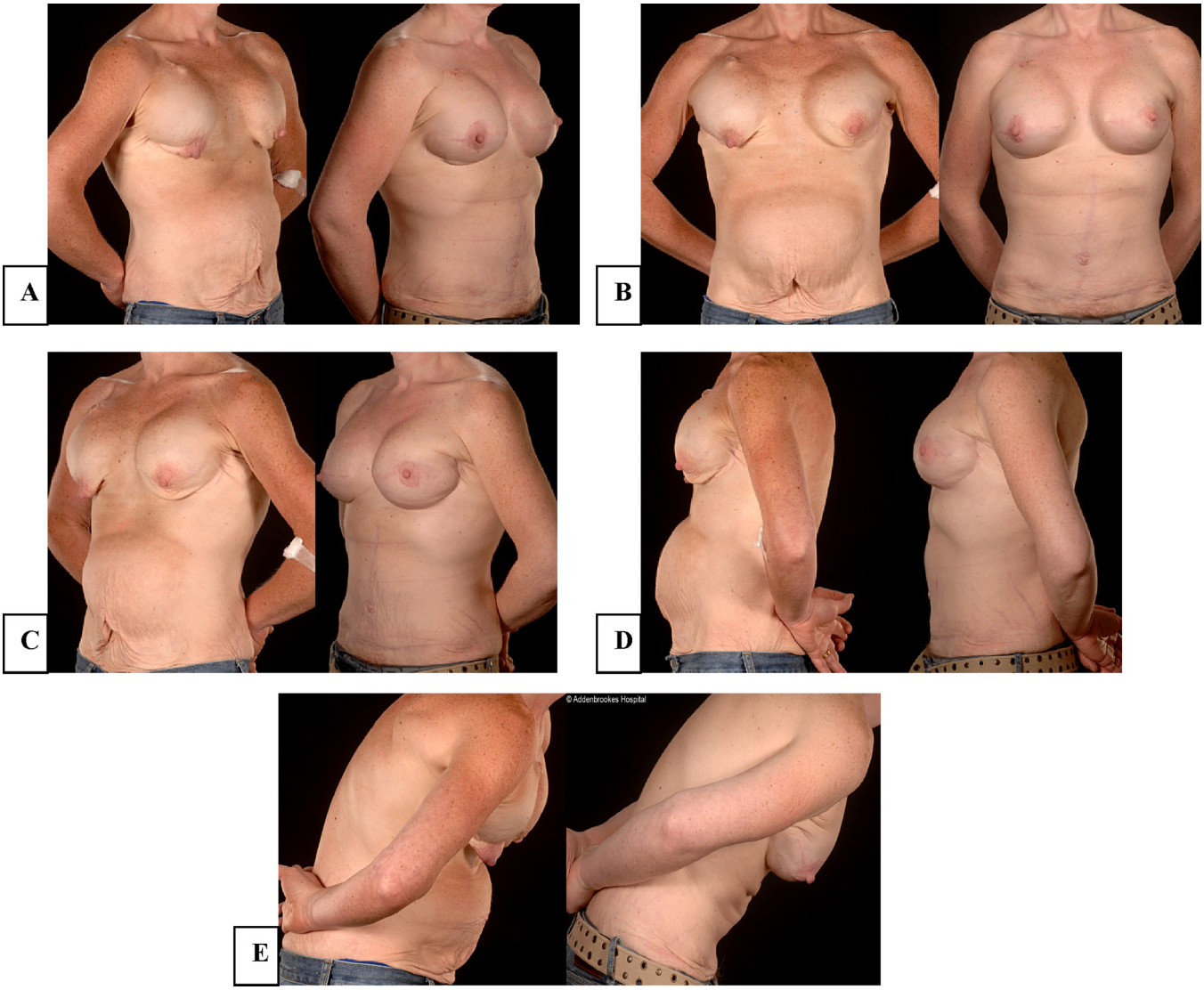

Fig. 1. Pre and post-operative appearances of patient 1 following revision reconstructive breast surgery and simultaneous Fleur-de-Lys abdominoplasty, used as a source of free dermo-fat grafts. Note the bilaterally deformed, asymmetrical reconstructed breasts with 'double-bubble' deformities and severe capsular contracture. The markedly signficant abdominal skin laxity and large post-partum diastasis recti are obvious.

asymmetrical breasts with double bubble deformities and loose skin (Fig. 1).

2.2. Patient 2

A 31-year old female had undergone bilateral cosmetic subglandular breast augmentation (with 280 g silicone gel implants) for severe hypoplasia at a different hospital 11 years prior to referral. She presented with asymmetrical, tender, hard and severely deformed breasts associated with Baker Grade IV capsular contractures, as well as significant weight loss in the preceding two years.

2.3. Surgical technique

Using inferior periareolar incisions bilateral total capsulectomies and explantations were performed. Following creation of new subpectoral pockets, anatomical cohesive silicone gel implants (450 g Patient 1; 400 g Patient 2) were then inserted and their inferolateral portions covered with de-epithelialised dermo-fat grafts (measuring about 10 cm × 6 cm) harvested from abdominoplasties performed simultaneously. The grafts were secured to the inframammary folds and the inferolateral borders of the pectoralis major muscle with continuous 2/0 PDS sutures using buried knots. A suction drain was used in each breast prior to standard wound closure. In the patient illustrated the nipples were repositioned by de-epithelialisation and superior transposition (with 3/0 monocryl). The patients had their drains removed prior to discharge from hospital.

3. Results

Both patients had no peri/early post-operative complications and achieved excellent cosmetic outcomes of their revised breasts and donor abdomens (Fig. 1). A minor abdominal donor site seroma was noted but this resolved spontaneously by three weeks. Two years after surgery there has been no clinical reduction in the dermal fat graft thickness as demonstrated by the lack of altered inframammary fold positions, recurrent palpable or visible rippling. Furthermore all four breasts have so far remained free of recurrent capsular contracture, infection, flap necrosis and explantation.