

## The Hall-Findlay mammoplasty pattern for skin-sparing mastectomy. Case report

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**SUMMARY:** The Hall-Findlay mammoplasty pattern for skin-sparing mastectomy: case report.

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*We present an application of the Hall-Findlay mammoplasty skin pattern for skin-sparing mastectomy (SSM). This is a simplified vertical reduction mammoplasty. Vertical reduction mammoplasty is the procedure advised for patients with moderate or large ptotic breasts, who wish to have a simultaneous contra-lateral breast reduction/mastopexy at the time of SSM for cancer or prophylactic mastectomy. It is particularly suitable for breast reconstruction with autologous tissue in the form of free transverse rectus abdominis myocutaneous (TRAM), deep inferior epigastric artery perforator (DIEP) and extended latissimus dorsi (ELD) flaps.*

**RIASSUNTO:** Mastoplastica riduttiva secondo Hall-Findlay in mastectomia con risparmio di cute. Case report.

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*Gli Autori presentano un caso nel quale è stata realizzata una mastoplastica riduttiva secondo Hall-Findlay in mastectomia con risparmio di cute per carcinoma. La tecnica di Hall-Findlay è generalmente utilizzata per moderate-gravi ptosi mammarie in pazienti che desiderano una riduzione del seno controlaterale simultanea a mastectomia con risparmio di cute o mastectomia profilattica per carcinoma. La tecnica è particolarmente indicata nella ricostruzione mammaria con lembi autologhi (del retto dell'addome o TRAM; cutaneo sottomelicale con perforanti dell'arteria epigastrica o DIEP; del grand dorsale o ELD).*

**KEY WORDS:** Mammoplasty - Skin-sparing mastectomy - Autologous tissue.  
Mammoplastica - Mastectomia con risparmio di cute - Tessuto autologo.

### Introduction

The skin-sparing mastectomy (SSM) is a well known procedure used for immediate breast reconstruction (IBR), which aims to optimize the cosmetic outcome of the breast. Traditional SSM patterns have been previously described: the periareolar, periareolar with lateral extension, periareolar with lateral and medial extension, elliptic and the Wise-pattern. High incidence of complications have been reported following the use of these designs, such as skin flap necrosis and wound healing problems (4-6).

We present a case where the Hall-Findlay skin pattern is applied for an IBR with ELD flap in a patient who had a mastectomy and axillary clearance for a breast cancer and wished to have a contra-lateral breast reduction for symmetrisation simultaneously. The rationale was to minimize

scarring, reduce skin flap necrosis risk and provide more exposure for axillary clearance; whilst optimizing the cosmetic outcome.

Furthermore in this particular case, where a contralateral mastopexy was required simultaneously, the advantages of the Hall-Findlay technique, when compared to the LeJour, for example, avoidance of liposuction and undermining of the skin, reduced the risk of complications (1).

### Case report

This 48 year old patient underwent a bilateral breast augmentation (BBA) 14 years ago (Fig. 1). In March 2009 she was diagnosed with a left-sided breast cancer and required a mastectomy. As the tumor was distant from the skin, a left SSM using the Hall-Findlay patterns and IBR with ELD flap was carried out with removal of the old implant. A contralateral mastopexy for symmetry was performed simultaneously, as the patient also presented with severe ptosis. The implant in this breast was broken, as demonstrated on preoperative ultrasound, and was removed at operation. The ELD flap was chosen because of the likelihood of postoperative radiotherapy (high tumor grade; nodal involvement). In fact, the literature shows the ELD flap to be more resistant to radiotherapy than the TRAM/DIEP flaps (7-9).

The patient underwent chemotherapy three weeks after surgery, fol-

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Fig. 1 - Preoperative (following BBA).

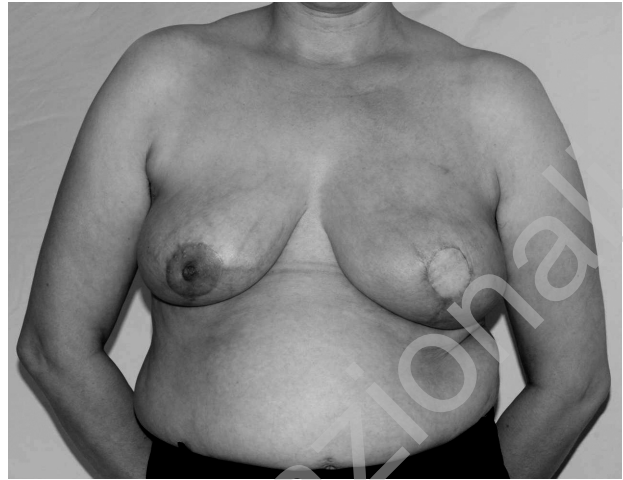


Fig. 2 - Left breast reconstruction with ELD flap plus contralateral breast reduction after 6 weeks.

lowed by radiotherapy. Follow up was taken after 6 weeks (Fig. 2), 12 months (Fig. 3), and 18 months (Fig. 4). Despite radiotherapy, the ELD flap did not lose much volume when compared to the contra-lateral mastopexy. There was good symmetry 18 months following surgery and 11 months following radiotherapy (Figs 4 and 5).

#### Technique

The Hall-Findlay skin pattern is marked as for breast reduction as reported in our previous papers (3,8). The same pattern is marked on the contra-lateral breast for symmetry. The new areola position is drawn 2cm lower than the projection of the inframammary fold: while the junction of the medial and lateral limbs is positioned 3 cm above the inframammary fold to avoid the vertical scar crossing this point. The areola opening is designed as a semi-circle with a maximum length of 16-18cm, depending on the amount of skin to be excised. The mastectomy is then undertaken through the vertical incision and access to the axilla for clearance is obtained without making any further incision. This allows good exposure of either the axillary nodes or vessels in case of a free flap reconstruction.

In this case, the unilateral ELD flap was then raised and transferred for reconstruction of the left breast and a contra-lateral mastopexy of symmetrisation was carried out. Nipple reconstruction was performed as a delayed procedure.

#### Result

The immediate postoperative course was uneventful. The patient received 7 days of antibiotics (Flucloxacillin 500mg x 4, intravenously for the first 48 hours, orally thereafter) and thromboprophylaxis (Clexane 20mg subcutaneously daily for one week).

The patient developed a postoperative seroma on her back. This was aspirated in clinic and treated with one steroid injection (Triamcinolone 40mg). Following this, the seroma resolved completely within three weeks.

#### Discussion

Vertical mammoplasty patterns can be used for cancer



Fig. 3 - Left breast reconstruction with ELD flap plus contralateral breast reduction after 12 months.

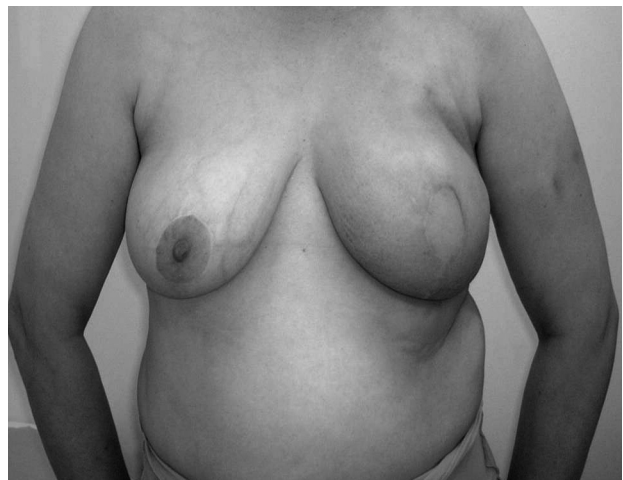


Fig. 4 - Left breast reconstruction with ELD flap plus contralateral breast reduction after 18 months.



Fig. 5 - Donor site after 18 months.

lying close to the breast meridian or for tumor distant from the skin. They are suitable for patients with moderate to severe ptosis who require contralateral symmetrizing breast surgery. It can also be used for bilateral reconstructions and prophylactic mastectomy (5).

Advantages of this procedure include (1,3,8):

1. limited scars;
2. improved cosmetic result as the skin envelope of the breast is preserved;
3. immediate symmetry with the contra-lateral breast;
4. less risk of skin necrosis compared with the Wise pattern;
5. quicker surgical technique;
6. quicker recovery time;
7. avoidance of skin undermining, liposuction, pectoralis major fascia stitches on the contralateral breast reduction/mastopexy.

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This procedure is particularly suitable for IBR with autologous tissue such as free TRAM/DIEP flaps, ELD flap and LD flap plus prosthesis; especially in patients requiring contralateral symmetrizing surgery (1-3).

The Hall-Findlay technique has been the workhorse for breast reduction in the clinical practice of the senior author (MPS) for the last six years. Its versatility has allowed the author to extend its applicability for a contra-lateral balancing procedure for symmetry following breast reconstruction with delayed ELD flap (3).

We now present a case report where the use of these previously described adaptations are applied for a SSM and IBR with ELD flap in a patient who wished to have a simultaneous contra-lateral symmetrizing procedure, following removal of ruptured implants.

The procedure showed no other complications apart from a donor site seroma, which resolved completely within three weeks. The contralateral reduction took just 40 minutes more than the standard operation time.

The advantages of the Hall-Findlay technique combined with the psychological benefit of IBR and the simultaneous mastopexy, made this one-stage operation successful. Despite radiotherapy, the ELD flap maintained a good volume with no remarkable problems. The patient was very satisfied with the outcome.

## Conclusion

The Hall-Findlay skin sparing pattern was successfully performed in this case report. The advantages of this procedure make it suitable for the majority of reconstructive procedures with autologous tissue, especially when a simultaneous contralateral reduction/mastopexy is required.