CASE REPORT

Use of dermal fat graft for augmentation of the labia majora

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Summary

Dermal fat grafts have been utilized in plastic surgery for both reconstructive and aesthetic purposes of the face, breast, and body. There are multiple reports in the literature on the male phallus augmentation with the use of dermal fat grafts. Few reports describe female genitalia aesthetic surgery, in particular rejuvenation of the labia majora. In this report we describe an indication and use of autologous dermal fat graft for labia majora augmentation in a patient with loss of tone and volume in the labia majora. We found that this procedure is an option for labia majora augmentation and provides a stable result in volume-restoration.

Introduction

Cosmetic rejuvenation of the female and male genitalia has attracted much attention in the plastic surgery literature. There are multiple reports in the literature describing male genitalia plastic surgery, including the use of dermal fat grafting for penile augmentation to address 'penile dysmorphophobia'. Dermal fat grafts for phalloplasty are well tolerated, have few side effects, and result in significant improvement in sexual self-esteem.

In comparison, the field of female genital plastic surgery encompasses labiaplasty, clitoral reduction, vaginoplasty, and hymenoplasty. It is important to understand that women desire vulvovaginal surgery to address both functional and aesthetic concerns. They may desire improved sexual function, improved vulvovaginal cosmesis, or improved sexual self-esteem. The largest series to date on labiaplasty and vaginoplasty, reported 341 procedures in 258 women, and recorded a 91.6% enhancement in sexual functioning for both women and their sexual partners. However, very little is described in the literature regarding labia majora augmentation. The only case report on labia augmentation with utilizing transferred fat was using suction-assisted liposuction aspirated fat grafts to address a unilateral post-ablative surgical defect after...
cancer resection and failed plastic surgical flap. This procedure however was using fat grafting for reconstructive restoration, different from a structural dermal fat graft used in this report.

The labia majora are affected as are other areas of the body by the normal process of aging; time and gravity cause loss of dermal collagen and skin wrinkles. These effects lead to a loss of tone and volume in the labia majora whilst the labia minora increase in size causing discordance between the minor and major labia and an unattractive ‘aged’ appearance. Women frequently request ‘vaginal rejuvenation’ and in select patients, labia majora augmentation may offer significant aesthetic results for this particular portion of the vulva. In this case report, we describe the use of a dermal fat graft to augment the labia majora for aesthetic rejuvenation during a concomitant abdominoplasty.

Case report

Methods

Patient is a 33 year-old female, G3 P3, who presented for cosmetic consultation regarding post-partum ‘mommy makeover’ including breast augmentation, abdominoplasty, and vaginal rejuvenation. She complained of loss of tone and fullness in the labia majora and wanted this addressed.

Bilateral saline breast augmentation (submuscular) and a circumareolar mastopexy were performed. Abdominoplasty with fascial plication and umbilical transposition was performed in the standard fashion.

The dermal fat grafts were harvested from the already-procured abdominal skin-fat paddle and prepared on the back-table. Dual grafts were prepared 10 cm in length, 2 cm wide, and de-epithelization was carried out with preservation of 2 cm of deep fat (Figure 1).

After measuring the corresponding length on the labia majora and appropriate contouring of the dermal fat grafts, 1% lidocaine with epinephrine was injected bilaterally in the submucosal and subdermal plane primarily for the vasoconstrictive effect. A 2 cm. semicircular incision was made where the introitus meets the external labial soft tissues, on the mucosal border. Another incision was made at the border of the labia majora and labia minora, just inferior to the clitoral hood. A tonsil clamp was utilized to bluntly create a tunnel on the medial aspect of the labia majora, bilaterally. The dermal fat graft was wet in sterile saline and then placed inside a 1 inch Penrose drain that had been pre-slit down the length of the drain; the edge of the Penrose was grasped with the tonsil clamp and the dermal fat graft pulled into place. (Figures 2 and 3). The Penrose was then peeled off the graft without disrupting the dermal fat grafts. The dermal aspect of the dermal fat graft was placed on the dermal side of the labia majora and sutured with 3-0 absorbable suture. The procedure was then repeated on the contralateral side. Skin incisions were closed with 5-0 fast absorbing plain gut. Post-operative care involved mesh panties for light compression to prevent hematoma formation. Trauma to the surgical site (i.e. vaginal intercourse) was prohibited for a period of 6 weeks post-operatively.

Results

Immediate post-operative result is demonstrated in Figure 4. Using calipers, measurements were taken from the introital ring to the outermost portion of the labia majora before and after dermal fat grafting; this demonstrated that the baseline measurement of 2.5 cm had increased to 3.5 cm bilaterally. This 40% improvement in labia majora projection was obtained at four months and sustained at six months with normal palpability of fat. The follow-up at 6 months demonstrates that the improvement in volume is persistent. (Figure 5).

Discussion

The use of dermal fat grafts has been used in plastic surgery for many years. It has been described for reconstructive and aesthetic indications on the face and body. All dermal

Figure 1 Dermal fat grafts prepared on the back table.

Figure 2 Labia majora demonstrating atrophy and loss of volume and tone.
fat grafts will suffer from the inevitable loss of viability of a certain percentage of fat that is transferred resulting in loss of volume.

This is an important consideration in areas such as the labia majora that are subjected to persistent trauma during sexual intercourse and therefore slight over-correction was performed. Intuitively, dermal fat grafts may have a structural advantage over lipoaspirated-injected fat graft in that the latter has no borders when it comes to dispersion of the graft in the subcutaneous plane. The literature indicates that dermal fat grafts may offer an advantage in terms of longevity. Although previous literature on the use of dermal fat grafts has stated that these grafts eventually form scar tissue with replacement of transferred fat6 we did not evaluate this radiographically in our patient due to the costs incurred following this cosmetic procedure.

Although much attention has been devoted to labia minora reduction or labiaplasty, there are few reports devoted to aesthetic labia majora procedures. Several authors have described techniques for labia majora reduction7,8 but aesthetic labia majora augmentation is an area that has not been previously described.

Labia majora augmentation may be considered in the select patient. Over time, the labia majora suffer time-related insults including the loss of hyaluronic acid, collagen, and fat. The result is labia majora that have noticeable rhytids and loss of volume; the resulting decrease in majora to minora ratio causes the minora to look abnormally prominent. This subsequently can cause significant psychosocial impairment for a woman, who may inappropriately feel that her vulvovaginal area is ‘abnormal’ and she may thus suffer a decrease in sexual self-esteem. The volume-depletion of the labia majora may become a functional problem if the volume loss in the majora results in mucosal exposure of the minor, causing excessive dryness of the minora.

Regardless of whether the indication is functional or aesthetic, dermal fat graft transfer is an option for labia majora augmentation. Dermal fat graft harvest is a procedure that is relatively easy to perform in conjunction with

**Figure 3** Insertion of dermal fat graft into labia majora using Penrose drain delivery system in right labia majora. (Patient’s right side has been augmented).

**Figure 4** Immediate postoperative result.

**Figure 5** Results at 6 months post-operatively demonstrating persistent volume correction and resolution of the labia majora atrophy that was present preoperatively.
another cosmetic procedure (NB: although this case report describes dermal fat harvest in conjunction with abdominoplasty, harvest could be performed with other cosmetic procedures such as breast reduction). Although general anesthesia was used in this patient due to the other procedures involved if it were to be performed solely then local anesthesia with or without sedation would be advised. The result that we achieved is stable at 6 months and the cosmetic result is well-received by the patient and her partner, with very little time away from work (one week) in this patient.

Conclusion

In conclusion, dermal-fat augmentation is an option for the labia majora. It provides stable results in volume restoration of the labia majora. The procedure is one that the plastic surgeon should consider in the armamentarium, particularly when performing a procedure such as abdominoplasty that affords an easy donor site.

This case was exempt from institutional review board process due to its retrospective nature.

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Conflict of interest

None.

References