Autologous Latissimus Dorsi in Breast reconstruction

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Introduction

After an anatomical work in 1992, we developed our technique of Autologous Latissimus Breast Reconstruction and performed our first case in 1993. Since 1993, we have been using the technique of autologous latissimus dorsi breast reconstruction as described in our publication in Plastic and Reconstructive Surgery Journal in 1998. In the early stages of our experience, it was employed above all in cases where the TRAM flap was contraindicated. The TRAM flap, which we had the pleasure of learning under the guidance of John Boswick and Carl Hartrampf, of Atlanta, was at the time our reference technique. As our experience increased and we evaluated our intensive practice of breast reconstruction (personal experience of more100 reconstructions a year), our preference went to the autologous latissimus dorsi, which is now our principal technique of Autologous Breast reconstruction. This flap has in fact progressively replaced the TRAM flap in our practice over the last ten years, as the postoperative course is much simpler and it allows better management of local thoracic tissue, avoiding the patchwork effect on the breast. However, the volume of the reconstructed breast may be insufficient if the patient is very slim or there is marked atrophy of the flap. To avoid the disadvantages of implant insertion in this cases, we developped, in our department in 1998, the lipomodeling technique (fat grafting technique to the breast), which permits to complete the volume and shape of the reconstructed breast. The lipomodeling has many advantages and ideally completes autologous latissimus dorsi reconstruction, and probably contributes to the predominance of this flap in our team.

Material and methods

I have a personal experience of 1000 cases (december 2010) of breast reconstruction using our technique of Autologous Latissimus Breast Reconstruction (the experience of the department is 3200 cases).

Because muscle atrophies after transfer when it is no longer used, the autologous latissimus dorsi flap aims to increase the volume provided by latissimus dorsi by incorporating fatty areas which are true extensions to the flap. In order to codify these areas and to make them easier to teach and to harvest, we have described six fatty areas (Delay 1998) which are harvested as a complement to the muscle itself: Zone 1 corresponds to the fatty area of the crescent of the dorsal skin paddle, Zone 2 represents the deep layer of fat lying between the muscle and the fascia superficialis, and is left adherent over all the surface of the flap, Zone 3 consists of the scapular hinge flap which continues on the upper margin of the muscle, Zone 4 lies just forward to its external margin, forming an anterior hinge flap, Zone 5 corresponds to the suprailiac fat deposits or « love handles » , Zone 6 is the adipous tissue of the deep aspect of the muscle.

Results

As used by us, the autologous latissimus dorsi flap makes it possible to restore a volume similar to that of the opposite breast in 70% of cases (before the adjunct of the lipomodeling); and in 95 % of cases with the addition of the Lipomodeling Technique. The dorsal sequelae are reduced by raising a skin paddle of moderate width following the dorsal tension lines, and sparing the fascia superficialis which preserves a homogeneous superficial fatty layer. Use of the fascia superficialis during closure also reduces the tension of dorsal closure of the cutaneous plane and guarantees the stability of the scar over time. After two to five months, when there will be no further muscle atrophy, and in spite of the initial overcorrection, in 30% of cases volume is insufficient and either complementary insertion of an implant or reduction of the opposite breast are required. Since 1998, we have found the solution to this problem by carrying out lipomodeling of the reconstructed breast two to five months after the first stage, during reconstruction of the nipple-areola complex. Lipomodeling gives adequate volume in the immense majority of cases. Only very slim patients who have no available fat deposits cannot benefit from this complementary technique.

This technique is very safe : only one case of total flap necrosis, and one case of absence of the thoracodorsal vessels ; no case of total failure of the reconstruction (breast implant insertion in this 2 cases).

The results of breast reconstruction with the autologous latissimus dorsi flap were first evaluated in 1998, followed by a study of 400 cases in 2001. Assessment of the results by both patients and surgeons showed a very high satisfaction rate (97%). Results were considered respectively: very good in 87% of cases by the surgeons and in 85% by the patients, good in 10% of cases by the surgeons and 12% by the patients , medium in 3% of cases by the surgeons and 3% by the patients, in no case was reconstruction considered a failure.

The best aesthetic results are in immediate breast reconstruction with skin sparing mastectomy. In delayed reconstruction, the abdominal advancement flap allows, in the majority of the cases, to avoid the skin pallet by burying the skin pallet.

Conclusions

After various technical improvements, the Autologous Latissimus Dorsi flap has become a procedure which is perfectly adapted to pure autologous breast reconstructions. Its ease of use, reproducibility, reliability, acceptable constraints and low complication rate make it, in our opinion, an appropriate answer to the pressing need for quality breast reconstructions. Because of its excellent blood supply, it can be used in difficult reconstructions, in particular where there is marked radiation damage.

Lastly, the advent of lipomodeling now enables us to optimise results by habitually obtaining a reconstructed breast whose volume, shape and consistency are close to those of a normal breast.

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