Autologous Fat Transfer in Poland Syndrome

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Background. Poland syndrome is an uncommon but not so rare congenital disease characterized by anomalies of breast and nipple hypoplasia and/or aplasia associated with the partial or complete absence of pectoral muscles, varying thoracic deformities, deficiency of axillary hair and upper extremity anomalies. It is very hard to choose the most appropriate surgical treatment, but often fat transfer is the best way to achieve excellent aesthetic result. We present our experience in the treatment of Poland’s syndrome deformity using autologous fat transfer (AFT).

Material and Methods. We reviewed retrospectively our 52 cases of thoracic deformity in Poland's syndrome treated with fat grafting associated or not with external tissue expander between 2000 and 2014. In 52 cases (49 females and 3 males, with age between 20 and 42 years old) with Poland syndrome, we found - 9 with amastia, 13 with severe hypoplasia and 27 minor hypoplasia of the breast; thoracic malformations were also present: 8 pectus excavatum, 7 pectus carinatum and 5 costal arch deformities. Associated malformations of the upper limb included 6 sindactilies and 2 short forearm bones. 21 patients underwent autologous fat transfer associated with external tissue expander in pre- and postoperative care. The fat was centrifugated at 500 rot/min and injected in the breast area with specific blunt cannulas. Lipomodeling was performed alone on 49 of these patients and in 3 patients was associated with other reconstructive techniques. We performed the Roger Khouri technique in one or repeated fat transfer. The fat was harvested from the thigh, infragluteal fold, and abdomen. Photographies taken pre and postoperatively, Echo, and RMI were used to determine volume.

Results. In 29 patients the first reconstructive intervention for symmetrization and stabilization of the chest wall was the latissimus dorsi muscle transfer associated with breast implants. In 9 cases with amastia we used double internal expansion associated with latissimus dorsi flap and the results were excellent. In 27 cases with severe and minor hypoplasia we used only the skin expansion or direct mammary implant for the breasts symmetrization with good results in 19 cases and in 8 cases AFT consist a adjuvant treatment. In 18 cases we used only AFT for the breasts symmetrization. The improvement degrees of the 18 patients with external tissue expander and fat graft transfer were 68% satisfactory, 27% mostly satisfactory and 6% unsatisfactory. An average of 2.9 procedures (1 to 5) with 255 cc of fat injection at each procedure was needed to obtain symmetry. The mean follow-up was 6 months. 30% of the injected fat was absorbed. Volume of the breast became stable in 4 to 6 months and remained definitive if the patient maintained constant weight. No important complication was noted (in 2 cases fat necrosis/oil cysts). Patient satisfaction was overall high to very high (96%) and confirmed the good aesthetic results (68%).

Conclusions. The application of lipomodelling in the treatment of Poland’s syndrome is promising because achieves natural aspect, projection and symmetry of breasts, correct the anterior axillary fold, with the benefit of liposuction, minimal scarring and low morbidity rate. Therefore, fat grafting to the breast is now our first choice treatment in Poland’s syndrome deformity.
Complications after autologous fat transfer associated with external tissue expansion BRAVA in breast reconstruction

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Introduction and Aims. We present our clinical experience in breast reconstruction using autologous fat transfer (AFT) associated with external tissue expander in pre- and postoperative care. Fat grafting improves cosmetics but also has a significant risk of fat necrosis. Awareness of fat injection location, incidence, time of development, and characteristic examination may decrease anxiety and the need of imaging/biopsy. This article aims to analyze postoperative complications, occurring after autologous fat transfer associated with BRAVA external tissue expansion compared to the classical reconstructive surgery of the breasts.

Material and Methods. Between 2010-2014, 34 patients were included in this study in which we performed 42 autologous fat transfer. The amount of injected fat varied between 60-180 cc: in 22 patients (61,11%) 100-180 cc, in 9 cases (26.47%) 80-150 cc and in 3 cases(8,82%) 60-80 cc. Liposuction product was centrifuged at 500 rot / min.
Three patients (8,82%) have recorded liponecrosis cysts after AFT and these patients are most often referred for a breast ultrasound or needle biopsy. In our experience, palpable nodules or cysts in the fat grafted area have always been found to be benign but this can cause patients undue psychologic stress.

Results. In 31 patients (91,2%) the results were good and very good. 25 patients (73,5%) were satisfied after a single injection phase, 6 patients - 2 stages and in 3 cases it was performed 3 sessions with an interval of 3-4 months. In 5 cases (14,7%) , two complications retained our attention: liponecrosis cysts (single or multiple, 3 cases – 8,82%) and 2 (5,88%) cases with hyperchrome injuries on the contact area of BRAVA vats. Evacuatory puncture revealed 2-4 ml of transparent yellow oily liquid . In two cases we observed hyperchromic skin imprints caused by thefootprint contact of BRAVA vats.

Conclusions. Fat grafting improves cosmetics after postmastectomy breast reconstruction but has a significant risk (14,7%) of fat necrosis/oil cyst. Patients should be adequately informed of the sequelae of fat grafting and the possible need for future ultrasounds and biopsy. Liponecrotic cysts occur when the amount of fat injected was high (> 180 cc). External tissue expander with autologous fat graft is a useful, modern and non-invasive procedure for breast reconstruction. For hyperchromic skin imprints after BRAVA expansion, the cosmetic treatment is meticulous comprising four stages – chemicalpeels bleaching(whiteningpeel),cream inhibition of melanocytes, cream maintenance, cream skin regeneration - lasting and costly.
Autologous Fat Transfer In Ledderhose Disease

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Objective. Ledderhose disease consists of plantar aponevrosis degeneration - the establishment of the nodules on the cords which slowly retract - the equivalent of Dupuytren's disease that can be (or not) associated. The aims of this paper are that surgical treatment offers the possibility of pain relief on walking and normalization of feet pressure distribution and for the cases where painful embarrassment persists after sectorial plantar aponevrectomy, the autologous fat transfer (AFT) improves the results.

Material and Methods. Within 11 years (2003-2014) we operated 361 patients with Dupuytren's disease of which 162 Tubiana stages I-II and 199 Tubiana stage III-IV retractions. Of the 199 patients with Dupuytren's disease in advanced stages III - IV, 25 patients (12.56%) with age between 42 - 65, were found clinical signs of Ledderhose disease (in 17 patients, simple plantar nodules and in 8 patients, retraction was associated). In 16 patients nodules were palpable on both plants (64%) and in 9 cases only on one side. Ultrasound and MRI confirmed plantar fibromatosis. In 5 patients (20%) of the 25 with Ledderhose disease, painful manifestations affecting plantar support and walking imposed one foot surgery. Sectorial aponevrectomy was performed with excision of plantar nodules and retractile cords. Postoperatively, the operated leg was maintained in elevated position for the first 2 days with moderate compressive dressing and the physiotherapy was begun in the third day. A protective orthesis allowed walking with support starting on the seventh day. In 2 cases we used AFT and fat is harvested from the abdomen or thigh using manual liposuction with Tulipe syringe.

Results. Histological examination confirmed the plantar fibromatosis in all operated cases. Walking was possible on average at 2-3 weeks postoperatively. In 3 patients the pain associated with impaired walking disappeared completely - very good result in 60% of cases operated - and in 2 patients (40%) painful embarrassment persisted 6 months from sectorial aponevrectomy. The positive effect of fat grafting in softening scars in other clinical conditions, the addition of fat grafting is supposed to decrease the recurrence rate. This motivated the injection of autologous fat tissue in the plantar area. Postoperative controls at 6, 12 and 18 months revealed improved walking without foreign body sensation in both plantar areas.

Conclusions. The properties of the abdominal fat, which are different from the subcutaneous tissue in the foot, and the presence of stem cells with regenerative potential, may decrease the risk of recurrence. These stem cells seem to reduce the contraction of myofibroblasts in Dupuytren’s nodules and even inhibit the proliferation of myofibroblasts similar in Ledderhose disease. Surgery for Ledderhose disease must be applied only in cases of painful embarrassment that affects plantar support and walking. Better outcomes can be achieved through the implementation of new procedures as AFT - reliable, easy to apply and with a low cost compared to other modern versions of treatment (fibrinolytic agents, shockwave therapy, Marlex mesh, etc.). Using AFT in Ledderhose disease improves the results, minimize recurrence, maintains plantar architecture and reduce postoperative scar tissue volume.