



Auto Transplantation of Adipose and Adipose Derived Stem Cells

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Auto transplantation of adipose cells and adipose derived stem cells is an increasingly popular procedure in Aesthetic Plastic Surgery. Utilizing liposuction to harvest an individual's fat the lipo-aspirate that was once harvested, is purified prior to auto transplantation [1]. A number of techniques including low speed centrifugation, decanting, and/or blotting the various layers of the aspirated are utilized to increase the harvest of multi-potential stem cells and adipose cells while removing collagen, cellular debris and dead cells [1-4]. Stem cells may have an improved survival relative to unpurified fat auto-transplantation. The technique we utilize involves aspiration of 5 ccs of adipose tissue using a Toomey Syringe. The aspirate is washed twice with an equal volume of 0.9% normal saline. Following the washing, the fat is placed in a tube with 5 ccs of 0.9% normal saline for fifteen minutes to facilitate layering. Then the saline is removed. After removal of this 0.9% normal saline by aspiration and blotting, the residual adipose tissue and adipose derived stem cells are transplanted in 1 cc aliquots. It should be noted the bed into which the auto transplantation occurs has a significant impact on the graft survival. Reduction of cellular debris, collagen, and necrotic cells has increased cellular survival with our adipose autographs. In addition, the inclusion of adipose derive stem cells improves graft survival from a range of 50% for unpurified fat auto transplantation to between 80% to 90% survival of the heated transplant.

References

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