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THE USE OF ADULT STEM CELLS IN PLASTIC SURGERY & REGENERATIVE MEDICINE Surgical Scaffolds, 3D Imaging, 3D Printers and More By Lewis J. Obi M.D., FRSA

World Wars I and II established the need for modern day plastic surgery. As a Marine, the Korean War convinced me to become a plastic surgeon. Working my way through medical school as a pharmacist provided me with tools that have been useful as I evolved into the area of regenerative medicine. My residency years included general surgery, cardiovascular surgery, hand surgery, maxillofacial surgery as well as plastic surgery. In 1973, I became board certified in plastic surgery. However, my education never ceased.

I have worked with fat and an adipose source of stem cells for 35 years. In the beginning, I had no concept of stem cells or why I was observing regenerative changes in my patients after fat injections. 25 years ago, my hand surgery professor referred a patient that had a severe de-gloving type of injury to her right upper extremity with high level damage to all three nerves (median, ulnar and radial). She was left with a claw type extremity with only shoulder motion. The

exposed nerves were causing such severe paraesthesias and phantom pain that she was considering a high level amputation. Three years post injury I performed multiple fat injections in an effort to insulate the exposed nerves. I was confounded by the return of both sensory and motor nerve function as well as significant decrease in pain levels. 20 years later she has continued with improved function with the later use of processed stem cell rich fat grafts.



Almost five years ago I was awarded the first FDA approved Medikan™ Lipokit, a totally enclosed fat processing unit imported by Palomar. Combining SlimLipo laser neck tightening with large volume Lipokit processed fat and PRP to the face resulted in my OPERA Lift procedure.

The OPERA Lift is a totally non-surgical “3D Space Lift”. Shortly after my first case, I began enhancing my results by integrating Cell Assisted Lipo transfer technique (CAL). CAL is produced by adding collagenase digested stem cells to the processed Lipokit fat. This increases the fat graft survival to almost 100%



Shortly afterwards, Dr. Melvin Shiffman of L.A. asked me to contribute a chapter to the first book ever published on “Stem Cells in Aesthetic Procedures”. Springer Publications released the book last November, almost three years after I had written my chapter (chapter 29).

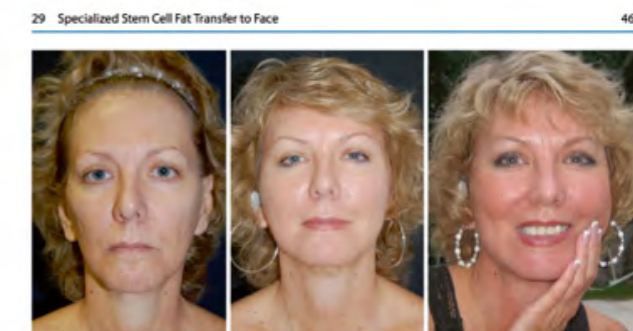
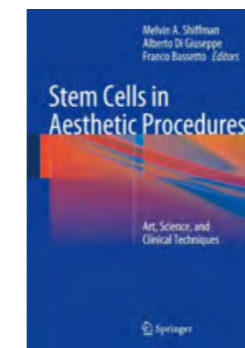


Fig. 29.32 (Left) Preoperative 60-year-old patient. (Middle) One month after Opera Lift Plus. 80 mL. Adivive, SlimLipo neck, and upper blepharoplasty. (Right) Seventeen months postsurgery

During an international lecture series with Dr. Mark Berman of Santa Monica, I was encouraged to join his newly established California Stem Cell Treatment Center. CSCTC later became IRB based Cell Surgical Network which I also joined. CSN of Florida is based at my 12,000 square foot licensed plastic surgery centre in Jacksonville. We are now growing from our three founding members to other specialties. The addition of a FDA IRB in the future may allow us to culture, expand and bank adipose derived stem cells. At this point we would be able to fast track into the area of advanced 3D imaging and printing of tissues. On a research level, this is what Dr. Lawrence Bonassar PhD of Cornell is studying.