viral gene-transfer method using fibroblasts to temporarily produce bFGF and VEGF165 in ischemic tissue for therapeutic purposes as a function of local preconditioning before tissue ischemia occurs. Functional evaluations were performed to detect the protein expression and resulting clinical effects.

MATERIAL AND METHODS: Primary skin fibroblasts were transfected with eukaryotic expression vectors harboring VEGF and bFGF cDNAs mediated by Amaxa Nucleofector. To determine an improvement in ischemically challenged tissue, a genetically modified cell line was injected in an ischemic rat flap model. Cells were implanted into 40 rats. Gene expression and protein production were measured in vitro and in vivo by real time PCR and immunohistochemistry (BioPlex) respectively at different time points. Clinical outcome was demonstrated by planimetric measurements and immunohistochemistry.

RESULTS: After injection of genetically modified cells, transient protein expression of bFGF and VEGF165 was measured therapeutically relevant and effects after local preconditioning with non-viral transfected fibroblasts in the ischemic rat flap model. Our standardized transfection technology is now used in preclinical research.

CONCLUSION: Our results indicate that transient expression of bFGF and VEGF165 induces therapeutically relevant and effects after local preconditioning with non-viral transfected fibroblasts in the ischemic rat flap model. Our standardized transfection technology is now used in preclinical research.

LOP13: CRUSHED CARTILAGE WITH VICRYL MESH TO AVOID POST-RHINOPLASTY DORSUM IRREGULARITIES

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INTRODUCTION: An acceptable aesthetic result of nasal dorsum is sometimes easy, simple, and secure, but in some complex and difficult cases we need to use grafts or implants to obtain a nasal dorsum with a nice contour and definition. Of the autogenous graft types, autografts cartilages is widely accepted as ideal for dorsal augmentation and contour as it can be carved, has a high degree of tissue tolerance, a low infection rate, and is easily accessible. However, cartilaginous dorsal nasal grafts are associated with limitations, such as limited amounts of tissue, additional surgery time, donor site morbidity, visible graft contour, postoperative distortions, and deformities at the graft-host interface. At 1 to 2 years after surgery, crushed cartilage grafts may become perceptible through nasal skin after the resolution of tissue edema. The irregularity post rhinoplasty is one of the complications that may have a negative impact to the patient and to the long time outcome of rhinoplasty. We present our technique of crushed cartilage with Vicryl mesh to do a single layer, and simply below the skin to overcome the post-rhinoplasty dorsum irregularity problem.

PATIENTS AND METHODS: 250 patients who underwent rhinoplasty, over 10 years, the age range 19-49 year old, they were operated by the same hand. Follow-up for a period ranged between 3 months to 3 years by the same team. The technique consists of using the excised part of alar and lateral nasal cartilages and also the pieces of cartilage which are excised from the dorsum to be crushed by hummer or cartilage crusher with a Vicryl mesh (Polyglactin 910 mesh, trademark: Ethicon Vicryl 8.5X10.5 cm) to do a single homogenous layer of the mixture, then we put this layer at the dorsum of the nose subcutaneously to avoid post rhinoplasty irregularity. The using of Vicryl mesh helps to join all particles of crushed cartilages and avoid slipping some of cartilages particles from the created homogenous layer of the mixture, and keep it homogenous. The time of Vicryl absorption is the time to get enough tissue to heal, and fibrosis to replace it, and this guarantee a long term homogenous dorsum without any irregularities. We can apply this technique in closed or open rhinoplasty.

RESULTS: Postoperatively, the patients have a nasal splint for 8 days. We put them on simple analgesia for the first 2-3 days. Follow-up on day 21, then after 3 months, and after a year. We did not experience any case of infection, necrosis and eventually no dorsum irregularities neither in short term follow-up period nor in long duration.

CONCLUSION: This technique can avoid the post-rhinoplasty irregularities and “operated look” complication. This technique is easy, cheap, and so much extra time because we use the already excised alar and lateral nasal cartilages, with minimal risk of complications (actually we experience negligible complications) and no postoperative irregularities in all our patients. In addition to that this technique can augment the dorsum of nose in minor degree of saddle nose.

LOP14: COMPARISON OF THREE DIFFERENT HARVESTING METHODS TO OBTAIN PREADIPOCYTES: IMPACT ON VIABILITY AND DIFFERENTIATION TO ADIPOCYTES

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QUESTION: Autologous fat transfer is a wide spread technique for soft tissue augmentation. Different tools for harvesting fat tissue have been established. Such devices should be easy to handle, time saving, low priced, safe and provide a high amount of viable cells in the aspirate. Aim of this study was to compare three different methods for harvesting fat tissue for lipotransfer. Water assisted liposuction (WAL), power assisted liposuction (PAL) and manual aspiration.

METHODS: Fat tissue was obtained from nine donors undergoing abdominoplasty. Samples were divided into three sections. Out of each section fat was harvested using either WAL, PAL or manual aspiration. Preadipocytes were isolated using a standard protocol. The amount of extracted preadipocytes was evaluated using cell count, viability was evaluated using annexin/PI staining. The ability of isolated preadipocytes to differentiate was determined by expression of adipocyte markers adiponectin, GLUT4 and PPARγ.

RESULTS: Our results show that there is significant differences using different harvesting methods; number and viability of extracted preadipocytes was significantly higher using PAL than WAL or manual aspiration. Furthermore their ability to differentiate into mature adipocytes differs significantly as adiponectin, GLUT4 and PPARG were significantly higher using PAL.

CONCLUSION: Preadipocytes play an important role in autologous fat transfer. Therefore these results should be considered when choosing the harvesting method.

LOP15: THE EFFECT OF TYPE AND DEGREE OF PRESSURE ON FAT GRAFTING

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INTRODUCTION: Autologous fat grafting has many clinical applications; however, outcomes remain highly variable. To date, many factors have been implicated in fat graft survival such as harvesting, processing, and injection techniques. One critical variable within these techniques is pressure. In this study, we examined the role of pressure on human fat grafts in a nude mouse model.

MATERIAL AND METHODS: Negative Pressure: Tumescent liposuction was performed in the laboratory on fresh panniculectomy specimens. Suction pressure was either -0.5 atm or -0.83 atm. Liposuction was centrifuged at 1200 g and injected into the dorsal flanks of nude mice. Positive Pressure: Fresh operating room liposaprate was obtained and positive pressure was applied up to six atmospheres for up to three minutes and then injected into nude mice. Shear Stress: Liposaprate was centrifuged at 1200g for three minutes and then injected at different speeds: 3-5 ml/sec vs. 0.5-1 ml/sec. After four weeks, the fat lobules were analyzed for weight and histology.

RESULTS: Negative Pressure: There were no differences in weight or histology with high versus low suction pressures. Positive Pressure: Various pressures and time points did not demonstrate a significant difference in weight or histology. Shear Stress: In vivo, slow injections yielded a 38% increase in weight (p<0.001) compared to fast injection. This correlated with histology.

CONCLUSION: Aspiration pressures up to -0.83 atm and positive pressure up to six atmospheres did not affect fat graft viability in vivo. The degree of shear stress, which is a function of flow rate, did significantly affect fat graft viability. Fat injected slowly with low shear stress significantly outperformed fat injected fast with high shear stress. Based on these results, we suggest the use of high pressure for added harvest efficiency and the better consideration of shear force for optimal fat graft survival.

LOP16: SUBJECTIVE EVALUATIONS OF THE FEMALE BREAST IN A STUDY OF 50 PATIENTS TREATED FOR ASYMMETRY

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QUESTION: Breast asymmetry represents a challenge for every Plastic Surgeon. The aim of the following study was to identify those factors, which influence long-term postoperative overall satisfaction the most.