(BLI) were performed to detect GFP and fLUC positive cells, respectively. For in vivo tracking, wounds created on the hind paws of rats received either a single injection of ASCs systemically into the tail vein (2x10^6 ASCs) or locally into each wound (10^5 ASCs). ASC distribution was followed in animals by BLI 3h and 48h post ASC injection.

RESULTS: In vitro experiments demonstrated that ASCs were successfully transduced to express both GFP and fLUC without influencing their phenotype (CD90+, CD29+, CD31- and CD45-). In vivo, 3h post-injection, ASCs were detected in the lungs of animals treated systemically with a decrease in signal seen from 3h to 48h, but no luminescent signal was detected in the wound. However, locally administered ASCs remained strongly detectable after 48h at the wound site.

CONCLUSIONS: Using a physiological wound repair model we show that GFP/fLUC labelling allowed ASC to be tracked in vivo. However, as the majority of ASCs are filtered out in the lungs, further studies using a model of severe wounds (e.g. ischemia and hyperglycemia) should be performed to determine whether ASC homing is affected by strong inflammatory cues.

12.40 IN SITU ADIPOSE TISSUE ENGINEERING WITH OLEIC ACID LOADED BIOSPHERES

Sarah BERNDT, Ioana KONZ, Harm-Anton KLOK, Ali MODARRESSI
Geneva, Switzerland

INTRODUCTION: Currently autologous fat transfer is considered as a gold standard procedure for soft tissue augmentation. However, this technique presents some disadvantages: unpredictable results, need for multiple-surgery or need for fat donor site. Therefore, we developed a new injectable that would permit in situ fat augmentation. The concept is that biodegradable microspheres are going to be loaded with oleic acid that will be released over a few months. Once outside of microspheres, oleic acid is internalized by the adipocytes, and the adipose tissue volume will increase locally. In this preliminary study, we evaluated the safety and efficacy of our product in comparison to current soft tissue fillers.

MATERIALS AND METHODS: Synthesis of the poly-lactic glycolic acid (PLGA) microspheres with and without oleic acid loading was carried out by the oil-in-water emulsion. The microspheres were sized between 10 to 50 microns. We injected in the inguinal fat pad of 36 mice, 0.1.ml of loaded microspheres and compared to non-loaded microspheres, hyaluronic acid and industry-available PLGA filler. We compared the efficacy of our product by 3D Ct-scan, assessed inflammatory cytokines and free fatty acids presence in animal sera at different experimental time points (from DAY 0 to DAY 90).

RESULTS: 3D computerized tomography evidenced fat pad volume enhancement after 15 days of injection, remaining stable after one month. Circulatory inflammatory cytokines assessed by the ELISA-Multiplex, demonstrated that microspheres did not increase systemic inflammatory reaction, neither the blood free fatty acids.

CONCLUSIONS: We demonstrated a volume increase of the inguinal fat pad after oleic acid loaded microspheres injection. In our future experiments, we will assess the quality of the soft tissue increased by our product: local inflammation reaction, vasculogenesis, size and number of adipocytes. Furthermore, we will assess the long-term effect to confirm that our product is completely desorbed after 3 months.

12.50 ADIPOSE CELL DERIVED REGENERATIVE THERAPY (ACRT): A NEW APPROACH OF LIPOTRANSFER IN SCAR TREATMENT

Delia Letizia HOPPE, Maroejska SPIEKMAN, Hans-Eberhard SCHALLER, Mojtaba GHODS
Potsdam, Germany

INTRODUCTION: Regenerative properties of autologous lipotransfer are recently described in patients with atrophic and painful scars. In this regard preliminary results of an European multicentre study (Germany, Netherlands) underline the aspect of regeneration and possible reconstruction of the subcutaneous layer using a certain lipotransfer technique (ACRT = adipose cells derived therapy) in symptomatic scars and post-traumatic soft tissue defects.
MATERIALS AND METHODS: Since the start in June 2014 clinical and histological analyses were performed in 17 patients (6 burns and 11 trauma) treated with 2 to 4 water-jet assisted lipotransfer (WAL) procedures including a follow-up of at least 3 months. Skin biopsies were taken preoperative and after 3 months. The skin quality and scar improvement were measured by POSAS and VAS-score system and documented by digital pictures. If joints were affected due to scar contraction, the mobility was determined with the neutral zero method pre and postoperatively. Overall changes were detected in the resulted skin adhesion, colour and aesthetic outcome as well as in the histological structure of the scars treated in the study presented.

RESULTS: Up to date 17 patients were treated by ACRT-protocol with a minimal invasive scar release and lipotransfer technique. Short operation time (56.2 min) with minor complications like haematoma on the donor (5.16%) has been achieved. However a significant decrease of pain in movement or skin stiffness was remarked in 56.3% of the patients after the first and in 75.1% after the second procedure. Histological analysis mainly showed a gain of cell layers in the epidermis and a rearrangement of the collagen fibres in the dermal layer.

CONCLUSIONS: The current trial helped to develop a new protocol in scar treatment called ACRT. It has been successfully used in a range of different scar types with and without soft tissue defects in our patient group.

14.00–15.40 SESSION 4 – CRANIOFACIAL

Moderators
Benoit LENGELÉ
Ion ZEGREA

14.00 THE DEVIATED NOSE:
MANAGEMENT AND METHODS FOR IMPROVED SURGICAL OUTCOMES

Mariam ISMAIL, Karima ISMAIL, Taher ISMAIL
Cairo, Egypt

INTRODUCTION: Correction of the deviated nose is a challenging problem functionally and aesthetically. Every structure is affected – nasal tip, middle vault, bony nasion, as well as the interior of nose (septum, turbinates). Tackling all structures simultaneously is mandatory.

MATERIALS AND METHODS: 40 consecutive patients were studied suffering from gross deviation of the nose. All patients were operated upon using closed rhinoplasty, in the same clinic by three separate surgeons. The tip, addressed by cephalic excision of lower lateral cartilages leaving 6mm, interdomal, and intercrural sutures with medial crus resection or unequal dome resection was done according to the specific case. Tip grafts and columnellar struts were used in 90% of patients. The dorsum was dealt with by differential and incremental reduction of the cartilaginous septum. Lateral and medial osteotomies were used to equalize both sides. Septoplasty by bilateral elevation of mucoperichondrial flaps, SMR to relieve internal tension and to supply needed cartilaginous grafts. Scoring, suturing, and dislocating and re-inserting the deviated caudal part. Submucous resection of hypertrophied inferior turbinates was done. Nasal passages were calibrated by special dilator (Hegar’s dilator number 7). Subjective evaluation by questionnaire addressing shape and function was carried out. Minimal follow up duration 6 months, maximum follow up 2 years.

RESULTS: 30% of patients (n: 12) were excluded due to a follow up less than 6 months. 85% (n: 23) were satisfied with results aesthetically and functionally. 10% (n: 3) were satisfied with results in spite of minor residual deviation, 5% required secondary rhinoplasty for correction of minor residual deformities. Regarding function, 95% (n: 27) were satisfied with their obstruction resolved. 5% (n: 1) complained of residual post-operative obstruction, which occurred only during exercise.

CONCLUSIONS: Correction of all nasal constituents in a differential way is mandatory in deviated noses to optimize results both aesthetically and functionally.

14.10 COMPLETE CLEFT LIP AND PALATE: HOW TO RESTORE FUNCTION, SYMMETRY AND LACK OF BONE IN ONESURGICAL PROCEDURE

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