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Posters

Beleid G et al., Clin Pediatr Dermatol 2018, Volume 4
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Development of in vitro skin models to investigate the effect of biocidal agents on skin infections

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The management of wound infections presents a challenge to healthcare authorities both in terms of economic burden (Chan, B., et al 2017, Nussbaum SR M, et al 2017) and the need to reduce the use of antibiotics due to the rising global crisis of antibiotic resistance (Ventola, 2015). This has led to the search for alternative approaches. Previous studies have shown that ultrasound used in conjunction with antibiotic therapy is more effective than antibiotic treatment alone in reducing bacterial load (Guirro, 2016, Yu, et al 2012). This study developed a 3D skin model utilizing HaCaT cells and fibroblasts which were seeded onto de epimerized dermis (DED) This model was then subjected to a controlled burn and infected with S. aureus. Effects of free radical generating antimicrobial strategies (Maillard, 2002): Low-frequency ultrasound (LFU); Silver nitrate; 2-methyl-4- isothiazoline-3-one and Medical Grade Manuka honey were investigated. The cellular phenotype and toxicity of biocidal agents on mammalian and bacterial cells were investigated. 3D skin was generated which demonstrated keratinocyte (Cytokeratin 10 &14) and fibroblast (S100A4) markers and underlying collagen type IV in the DED skin layer. In Bacterial biofilms, there was marked inhibition of S. aureus (SH1000), P. aeruginosa (NCIMB 8295), S. epidermidis and MRSA growth with all biocides. A decrease in S. aureus (SH1000) bacteria viability and number of CFU were observed in infected tissue-engineered skin models. This study describes the development of a well characterized skin model which can be utilized to develop and test biocidal agents for skin infections.

Biography

Guma Beleid graduated from the Faculty of medical technology, Derna, Libya, with Bsc in Laboratory medicine and MSc in Clinical Microbiology from Academy of Graduate Studies, Tripoli, Libya. He worked as a lecturer assist in the Faculty of medical technology, Derna, Libya for four years. He is currently a PhD Student in the Biomolecular Sciences Research Centre at Sheffield Hallam University, Sheffield, UK.

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K. Gerke et al., Clin Pediatr Dermatol 2018, Volume 4
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Development and multicentre validation of a prognostic model to predict resectability of pancreatic head malignancy

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Statement of the Problem: At the time of planned pancreatoduodenectomy patients frequently undergo exploratory laparotomy without resection, leading to delayed systemic therapy. This study aimed to develop and validate a prognostic model for the preoperative prediction of resectability of pancreatic head tumours.

Methodology & Theoretical Orientation: This was a retrospective study of patients undergoing attempted resection for confirmed malignant tumours of the pancreatic head in a university hospital in Hannover, Germany. The prognostic value of patient and tumour characteristics was investigated in a multivariable logistic regression model. External validation was performed using data from two other centres.

Findings: Some 109 patients were included in the development cohort, with 51 and 175 patients in the two validation cohorts. Eighty patients (73.4%) in the development cohort underwent resection, and 37 (73%) and 141 (80.6%) in the validation cohorts. The main reasons for performing no resection in the development cohort were: Local invasion of vasculature or arterial abutment (15 patients, 52%), and liver (12, 41%), peritoneal (8, 28%) and aortocaval lymph node (6, 21%) metastases. The final model contained the following variables: Time to surgery (OR 0.99, 95 per cent c.i. 0.98 to 0.99), carbohydrate antigen 19-9 concentration (OR 0.99, 0.99 to 0.99), jaundice (OR 4.45, 1.21 to 16.36) and back pain (OR 0.02, 0.00 to 0.22), with an area under the receiver operating characteristic curve (AUROC) of 0.918 in the development cohort. AUROC values were 0.813 and 0.761 in the validation cohorts. The positive predictive value of the final model for prediction of resectability was 98.0 per cent in the development cohort, and 91.7 and 94.7 per cent in the two external validation cohorts.

Conclusions: For preoperative prediction of the likelihood of resectability of pancreatic head tumours, this validated model is a valuable addition to CT findings.

Biography

Konstantin Gerken has been graduated from Hannover Medical School as Medical Doctor. From 2015 to 2017 he has been doing research at the Core Facility for Quality Management and Health Technology Assessment in Transplantation at Hannover Medical School. Since 2018 he has started working there at the Department of Anesthesiology and Intensive Care Medicine.

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Monika Czernik, Clin Pediatr Dermatol 2018, Volume 4
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Seven main trends in Aesthetic Medicine in 2018

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Aesthetic Medicine as a multidisciplinary subspecialty of medicine plays important role in skin rejuvenation and anti-aging prophylaxis. As a integrated medical procedures they are aimed to at using non -invasive to minimal invasive medical intervention. Today's studies show that skin quality is not be addressed as much it could be at doctor clinics. Many patients complain about skin fatigue -the words being used by patients are: Less radiant, gull, tired, dry, and exhausted.

1. Skin Quality injections:

Microinjections on the surface of the skin, previously called Skin Boosters. More focused on skin Hydration. It was positioned as a alternative to Mesotherapy (NCTF) has been launched by Allergan -Jouvederm Volite -to treat great quality - hyaluronic acid injection to give a skin elasticity and hydration. Results last for 9-12 months.

2. Regenerative medicine

The new aesthetic medicine Aesthetic medicine can be divided into two types of treatment:

- The Corrective treatments like Botox and Fillers
- The Regenerative treatments

The most spectacular example is Platelet Rich Plasma and Platelet Rich Fibrin. It is a most widespread of autologous cell grafting procedures. The future is having them both in one treatment: Corrective and regenerative. The whole idea is not to fill a wrinkle but to stimulate fibroblasts and the grow factors to produce a new collagen, regenerate the dermis, improve hydration and renew a skin and consistency. Second generation of Plasma called by his inventor Dr. Joseph Choukron Platelet Rich Fibrin has been commonly successfully used in dentistry, oral surgery, dental implantology maxilla-facial surgery, traumatology, sport injuries, TMJ disorders orthopaedics.

3. Sub mental fullness is now being addressed with fat-reduced injectable

- New treatment of double chin has been launched in 2017 -Kybella R Belkyra R

Chin reducing injections. It is made from deoxycholic acid-a naturally occurring molecule. It breaks down a wall of fatty tissues. The body can then to eliminate unwanted tissue. The fat cells die off and do not return. It has mainly been used to treat double chin, buttocks, neck and arms.

4. Lifting threads with rejuvenating effects are all the range

The lifting effect is an immediate and discreet as a result of compressing the tissue and the skin at the time of implanting the suture. There is also tissue stimulating effect which comes from following example: Poly-lactic acid (PLA) the principal component of the threads acts on deeper layers of the skin and stimulate to produce collagen type II and IV. The regenerating affect is gradual. It is used in Silhouette Soft Threads like Princess lift from Chroma (PDO thread).

5. Bespoke cosmeceuticals is the way forward

Universe- skin provided by French cosmeceuticals brand with a mission to revolutionize cosmeceuticals industry by providing successful one-the-spot bespoke skin care. The doctor will assess your skin concern based on a questionnaire which then Colour codes the outcome to match specific ingredients. A tailor-mdi serum called Nexultra P will be created. All three specific actives come in a powder form and are mixed in the serum base in the centrifuge-type machine.

The choice of three specific compounds following the patient's exact skin needs:

- **Mono function Actives:** Ferulic, DMAE, rutin, Vit B5, glycolic acid, arbutic kojic acid.
- **Duo Function Actives:** Superoxide dismutase, azelaic acid, madecassoside.
- **Multi-Function Actives:** Vit. B3, aloe vera, isoflavones, retinol, L-ascorbic acid. Product has its shelf-life 6 weeks' time. It must be stored into a fridge.

5. Laser Tattoo removals

6. Combination of eyes treatment

Latest application of the fillers for the tear trough, Botox, Radio-frequency, Ultrasound for instant tightening and longer-term collagen boost.

Biography

Tomasz Ziach achieved his master's degree in Stomatology from Warsaw Medical University. He has completed postgraduate internship in Maxillo -Facial Surgery Department where he has achieved degree in Oral Surgery. From 2006 he attended numerous courses in School of Dentistry in Birmingham UK and has completed postgraduate Diploma in Oral Implantology in Cambridge University of United Kingdom. In 2010 he started his postgraduate course in Bristol University and Reading Bob Khana advanced integrated Aesthetic Medicine. In the meantime, He has completed lots of postgraduate courses in Facial Aesthetics: Stomygen postgraduate Master Diploma -POIESIS provided by prof. Ezio Costa, ECLEST- certified by EBBA. - Warsaw University, Diet and Nutrition Diploma in Oxford University in 2014. Since 2015 qualified member of American Academy of Aesthetic Medicine and Facial Aesthetics in London. He has provided and participated in lots of Congresses and Training courses in Warsaw, Vienna, Sienna, Berlin, Miami, Bristol and London. One of the propagators of application of PRF and PRP in Facial Aesthetic,Trichology, Facial traumatology as intra oral and extra oral -integrated Stomatology - Cambridge University -provided by Joseph Choukron postgraduate course. Course provider in Aesthetic Medicine Training Centre London -Centre for Medical Science and Research.

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Laribi Habchi Hassiba, Clin Pediatr Dermatol 2018, Volume 4
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Conception and evaluation of a bio biopolymer cream extracted from a marine biomass Anti-infectious effect and healing of chronic wounds

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Formulation is a technological activity. Its objective is the design and development of artisanal or industrial products. Nowadays, formulation has become one of the most important branches thanks to the development and innovation that is constantly increasing; it consists in mixing different components to arrive at a formula allowing having a stable product. it is non-toxic and homogeneous, it concerns not only the pharmaceutical field but also the cosmetic and other fields. Today, existing and available on the markets of pharmaceutical and Para pharmaceutical products based on synthetic raw materials harmful to human health and also to the environment. On this basis the search for bio products has become a major concern in the field of scientific research. The pharmaceutical formulation generally comprises one or more active compounds, additives (colorants, preservatives, plasticizers, etc.). In this perspective, the objective of this study is to evaluate the biological interest of a new bio formulation based on biopolymer for regeneration in vivo skin tissue after a deep burn. The results of the experiments conducted as part of this work confirm that: -The formulation in cream form tested on animals is well tolerated by the host organism and does not generate a clinically detectable flammable reaction. - The regenerated tissue with biopolymer cream is functional and able to play the role of natural barrier against the external environment. -The mechanical properties of the regenerated tissue after a 10-day treatment with the prepared cream are closer to those of native tissue compared to those of the regenerated tissue after 25 days of treatment in the presence of Tulle Gras.

Biography

Laribi teach at the Faculty of Technology at BLIDA University and she does her research in the same university. Her research is about Biological Engineering and Biotechnology. Her research program is focused on the production, characterization of biomolecules (enzymes and biopolymers) extracted from bacteria and marine biomasses and their application in different domains (environment, agriculture and pharmaceutical) She is currently working on the application of biopolymers in the pharmaceutical and therapeutic field -Preparation of bio formulations in the form of creams, bio gels and dressings to treat infections, inflammation and total healing of deep wounds caused by second- and third-degree burns Hydrogel encapsulation of biomolécules as active ingrédients This work has been the subject of several studies of Magister, PhD, patents of invention and international publications etc

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Agnieszka Zakrzeska, Clin Pediatr Dermatol 2018, Volume 4
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The therapeutic benefits of melittis melissophyllum extracts in wound healing

Agnieszka Zakrzeska
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Plants and their extracts have long been used as a substantial source of medicines and have immense potential for the management and treatment of superficial wounds.The process of wound healing is comprised of a continuous sequence of inflammation and repair. The wound healing process occurs in a continuous and integrated manner. Successful wound healing is dependent upon various cell types, molecular mediators and structural elements. The wound healing process is not only complex but also fragile, and it is susceptible to interruption or failure leading to the formation of non-healing chronic wounds. It was recently discovered that M. melissophyllum extracts have high therapeutic activity in all stages of the wound healing process, relieve inflammation, accelerate cell proliferation and therefore shorten overall time to wound closure.

Male Wistar rats, 208-300 g was divided in three group with open wounds were involved: group 1, control with no treatment, group 2, a typical antiseptic agent was used, in accordance with a standard protocol regarding a treatment of an infected wound, group 3, the herbal preparation with M. melissophyllum extracts was used.

Recent, in vitro studies have demonstrated inhibitory effect on inflammation and limited cytotoxicity to human keratinocytes and dermal fibroblasts. Immunogenicity testing did not show any significant allergic response. Histological experiments demonstrated the formation of normal epithelial layers on the wound surface as evidenced by 20 % increase in collagen content in wound tissue. Herbal extract has comparable antimicrobial property to antiseptic agent.

Evaluation of DNA biosynthesis increased ~3X relative to the control group and significant collagen deposits were observed in the wound tissue. Additionally, the drug treatment group showed a significant increase in strength of scar tissues in the incision wound model and also increased the strength of collagen tissue.

In addition, it has been shown that the formation of multilayer cells in the upper regions of the wound, enhanced barrier function for external invasion of microorganism and resulted in accelerated wound closure by 3-4 days. With complete epithelization on the 9-th day vs. 12-13 day for control.

This natural agent demonstrated promising results and improved wound healing and regeneration of the lost tissue by multiple mechanisms without any observance of toxic effect on either the immediate area of tissue damage or the full body.

Biography

Agnieszka Zakrzeska has been Graduated of 2001 from the Medical Academy of Bialystok, Poland as laboratory diagnostician. In 2006 obtained title Doctor of Philosophy in the field of medical biology from the Medical University of Bialystok. In 2001 started working at The Department of Experimental Physiology, then from 2009 at the Department of Biopharmacy Medical University of Bialystok, Poland where she has continued his research. Presently she has been working as the Dean of the Faculty of General Medicine, University of Medical Science in Bialystok, Poland

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Inhalation burn, crush-syndrome and rhabdomyolysis syndrom

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Inhalation burn is responsible for 50% of the mortality associated with thermal burn. Inhalation burns are usually observed in exposure to smoke, heat, toxic gases, and combustion components. Inhalation burn causes damage to airway epithelium, mucosal edema, and reduces surface activity. These conditions are clinically manifested by airway obstruction, bronchospasm and atelectasis. The area above the tongue is particularly vulnerable to thermal damage. Often the burn develops swelling and obstruction of the upper airways which may not be immediately apparent. The larynx can be affected not only by thermal burn but also by the direct toxic action of irritant gases, showing early tibial swelling and laryngospasm. Unlike the upper airway lesions, lesions of the tracheobronchial tree are almost never caused by heat. Heat burn of the lower airways is only observed in exceptional cases of fire in a saturated water vapor environment. The lesions are usually of a chemical nature of irritating gases and soot. The diagnosis is usually based on clinical behaviors such as: facial burns, soot deposition in the rat, pharynx, epiglottis and tongue, voice gurgle, laryngospasm image and bronchospasm. Smoke exfoliation is also a positive diagnostic point. Determining the level of carboxyhemoglobin is useful, but it is not always feasible. Chest X-ray (initially may not have abnormal findings) and bronchoconstriction help estimate the extent of the lesion. In carbon monoxide poisoning (CO), monoxide antagonizes oxygen is linked to hemoglobin, moves release curve of oxyhemoglobin to the left and thus leads to tissue hypoxemia. The affinity of carbon monoxide for hemoglobin is 250 times greater than oxygen and the relatively low concentration of inhaled monoxide causes high levels of carboxyhemoglobin. Two principles are the basis for the successful treatment of CO poisoning: (a) maximizing the supply of oxygen to the tissues; and (b) using high oxygen concentrations in order to accelerate the elimination of CO. If the patient inhales air, the half-life (T½) of carboxyhemoglobin is 2 to 3 hours. Upon inhalation of 100% O2 this time is reduced to 20-30 minutes. Hyperbaric oxygen therapy is a healing method in severe cases. The burning of natural material (wood, wool, silk) and certain synthetic substances such as nylon and polyurethane causes the release of cyanide with the most important hydrogen cyanide. Their poisonous action is due to the binding of cytochrome oxidase and inhibition of oxygen uptake at the cellular level. Cyanide poisoning should be suspected of any victim of fire in an enclosed space where unexplained metabolic (lactic) acidosis occurs. Concentration of lactate> 10 mmol / L indicates a high probability of cyanide poisoning. Blood cyanide concentration greater than 40 mmol / L is considered to be toxic, with a concentration of 100 mmol / L being fatal. The clinical picture includes tachypnea, tachycardia, confusion, convulsions, metabolic acidosis, and at higher concentrations of respiratory depression and circulatory insufficiency. The specific treatment of cyanide intoxication involves the administration of 25% sodium thiosulphate at a dose of 50 ml at an infusion rate of 2.5 ml / min, which converts cyanide into thiocyanates that are less toxic and are eliminated by the kidneys. Also reported is the administration of hydroxybutylamine (Vit B12) which binds cyanide to the formation of hydroxycyanocobalamin. The dose used is 5 g at slow intravenous infusion. Burn injury is characterized by the development of burnout. Burning shock is due to a combination of hypovolemia and local and systemic secretion of a large number of mediators of inflammation. The most popular equation for calculating liquids is the Parkland equation: R / L 4ml × body weight (kg) ×% EU; 50% of the volume of fluid is given in the first 8 hours, the rest - 16 hours; If the EU assessment is not feasible, it is recommended to administer 20 ml / kg of body weight ; crystalline solutions during the first hour of injury • the first 24 term is recommended to use only crystallized solutions. Factors which increase the needs of the liquids delivered: Inhalation burns; Delay in fluid delivery; Electric burn; Extensive extent of burn surface; Concurrent injuries; In recent years, the so-called "fluid creep" phenomenon has been described Crush-syndrome and rhabdomyolysis syndrome: It was first described after a London bombing during the Second World War. The syndrome occurs during natural disasters, wars, explosions, industrial accidents. Compression of muscle mass leads to tissue ischemia, an increase in tissue pressure, which exceeds the capillary filtration pressure. After lifting the external pressure, the muscle tissue is reperfused. The mechanism of ischemia-reperfusion injury is the major pathophysiology-logical mechanism of this syndrome. Often, pressure damage is associated with vascular damage, traumatic vascular rupture, thrombosis and stroke. Occlusion syndrome is clinically manifested by hypoemia sequelae due to high accumulation of fluids in damaged tissues and by seo resulting from the release of large amounts of toxic substances from

the injured tissues. The first manifestation of the syndrome is usually hypoaemic shock, which is the most common cause of death during the first 4 days after the injury. Hyperkalaemia with its effect on heart function is the second cause of premature death. Myoglobin is a protein that accounts for 1-3% of the dry weight of the muscle tissue. Normally, myoglobin binds to actoglobin and α-2 globin and is eliminated through the duodenal endothelial system. The saturation of aptoglobin (when a large amount is produced of myoglobin) leads to an increase in free myoglobin in plasma that is excreted by the kidneys. In the renal tubules, myoglobin forms casts, especially in acidic environment. Urine alkalinisation reduces the generation of these complexes. Myoglobin causes immediate action in the renal tubules, helping to increase free radicals of oxygen and promoting fat peroxidation. This action of myoglobin is also limited to alkaline environment. Patients usually experience: extensive soft tissue injury with ischemia-reperfusion effect, edematous edges, compartment syndrome, dark-colored urine, positive test for hemoglobin, absence of red blood cells in the urine, elevation of CPK levels in the blood. Management: Aggressive fluid delivery; Administration of mannitol; Alkalisation of urine (pH> 6.5) with bicarbonate. In addition to alkalinisation of urine, the positive action of bicarbonates is also due to the treatment of hyperkalaemia.; Hypocalcaemia should not be treated aggressively because most of the calcium accumulates in muscles and exacerbates rhabdomyolysis.; Surgical cross-section of the deep fascia, if the syndrome is manifested. Irreversible damage to muscle tissue and nerves is observed after 6-8 hours of ischemia; Amputation of limbs in cases of extensive and irreversible damage to tissues.

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Skin and immunity

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The skin is the largest organ of the human body. Its ectoblastic origin makes it an expansion of the brain and its mesoblastic origin makes this organ an important vascular organ. The skin will therefore provide the brain with information from the surrounding world, the brain will allow the skin to respond to this information. To do this, the skin has a very rich nervous system and vascular but above all, and above all, it has a very complex lymphatic system that will allow to provide a specific response to any information. It is this lymphatic system that is the first bulwark against these external aggressions, viruses, bacteria, chemicals, but also sound or electromagnetic waves, thoughts, fears, etc. This lymphatic system will then direct this information through transport molecules to the lymph nodes that are the place of development of lymphocytes and macrophages, the cells of immunity. Once degraded, these molecules, these toxins, will be transmitted to the vascular, venous and arterial system in order to be eliminated in the emunctories, the lungs, the liver, the kidneys and the intestines. The areas of the body have correspondences with vertebral regions, sensory roots, which are related to the sympathetic system and specific organs. There is a correspondence between the organs and the lymph nodes which was established in 1930 by an American, Frank Chapman D.O., and which is of a quite remarkable interest. A treatment of these reflex centers allows to revive the body's defense system, that is to say immunity.

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The use of platelet rich plasma as an adjunct treatment in complex wounds: Multiple case presentations

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Statement of the problem: Regenerative medicine has been increasing in popularity over the past 10-15 years. There have been many biologics that have been approve by the FDA to be used as adjuncts for wound healing inmany different scenarios. These products all have been shown tohelp in the healing of wounds ranging fromdiabetic, venous to traumatic. The multiple products available are sometimes very costly.Different products beingused are human fibroblasts, human dermis, human epidermis, human amnionic membrane, and porcine collagen matrix. Unfortunately ,there is not one single product that will heal all wounds in a reasonable amount of time.Therefore, most wound care specialist will rely on multiple adjusts that will benefit the healing process.

Subject Matter: This lecture will demonstrate the effectiveness of PRP (Platelet Rich Plasma) as an adjunct to healing in multiple clinical cases with complex wounds. We will demonstrate the importance of understanding the three phases of healing and how that can affect wound healing. We will demonstrate the importance of wound bed preparation and the importance of timed procedures to enhance healing. This lecture will show how PRP can be use alone or as an adjunct with other treatments such as NPWT, skin grafting, high pressure saline debridement, and Unna's wraps. We will present wound treatment in a systematic logical manner that will address the importance of understanding all important aspects that go into healing complex wounds.

Conclusion and Significance: Multiple clinical case studies will be presented with fully healed outcomes showing the effectiveness of PRP alone and as an adjunct to healing. Attendees will come to understand how time procedures and treatments can enhance healing if done in logical and systematic steps. All cases presented in this lecture are the authors own cases. Attendees will learn about wound management, preparation, and treatment of wounds both surgically and non-surgically. They will understand how PRP plays an important roll in wound healing and how it can be cost effective.

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Multicentric cervical paraganglioma. Rare case of five locations in one patient. Case report and literature review

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To report a case of a multiple paraganglioma with 5 concurrent locations and also describe a complication not found in the literature, spontaneous tumor bleeding. Introduction: The paragangliomas are mostly benign and more frequent in women. Can be multiple, and these are considered as the most likely source of familial origin (30% - 35%). The multicentric lesions can occur at different life stages not being necessarily simultaneous, a fact that prevents image exam research to be conclusive for tumor presence or absence. In this way the examination of the family members of patients, specially young ones, diagnosed with multicentric tumors may lead to negative results which doesn't meant that the disease can be developed at a later time period. Therefore routine examination is not justifiable when symptoms relative to tumor presence are not present. Case report: A female patient of 32 years old complaining of tinnitus and diagnosed with five paragangliomas (jugulo-timpanic, bilateral carotid body and bilateral brachiocephalic trunk) through imaging studies. She reported suffering relatives of paragangliomas. Conclusion: The paper reports a rare case and perhaps unique in the literature, multiple paraganglioma with five locations and discusses difficult choice of treatment and complications.

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Novel wound assessment using *in vitro* wound models with mass spectrometry imaging

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Aim: The normal wound healing process is a highly ordered and structured process involving overlapping four main phases: haemostasis, inflammation, proliferation and remodelling. Damage to the skin's integrity, which is caused trauma or injury initiates the wound healing process. Infections are known to disrupt the normal wound healing and have a detrimental effect on this process, which has shown to induce chronic wound formation. The western world is currently facing a public health crisis due to the increasing number of people suffering from chronic wounds. Identifying biomarkers associated with the wound healing process may aid early detection of a wound developing into an infected or chronic wound. The use of Labskin, a living skin equivalent model to imitate non-infected and infected wounds will provide the opportunity to assess wound healing process in-depth. Combining Labskin with Mass Spectrometry Imaging (MSI) would allow simultaneous multi-analyte detection *in situ* to help identify specific markers linked to wound healing.

Methods& Results: Labskin was wounded with scalpel blade, which was either non-infected or immediately infected with S. aureus and left for up to 4 days. Samples were snapped frozen, sectioned at wound site, coated in MALDI matrix and analysed for lipids (mass range: 400-1200 m/z) whereas, histology samples were stained with haematoxylin and eosin. Principal component analysis (PCA) was performed on regions of interest (dermis, epidermis and wound site/infection). MS/MS profiling and database search was able to putatively identify ions of interest in the non-infected sample where a glycosylceramide was shown to be present in the epidermis across the wound site.

Conclusions: The wounded Labskin model with MSI was able to putatively identify a glycosylceramide within the wound site and epidermis, which may be used a biomarker associated with the wound healing process.

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To develop an *in vivo* wound healing model for human skin

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The repair and management of full-thickness skin wounds such as deep burns or chronic ulcers remain a clinical challenge. No significant new therapies have been made in the last decade due in large part to the absence of a properly humanized animal model. Currently, the common mouse model for studying human skin wound healing uses either human skin grafted or tissue engineering skin transplanted onto the nude mice. In the human skin graft model, the skin transplant after wounding usually repairs with contraction, a high rate of shrinkage and hypertrophic scar, and does not maintain a viable normal-looking human skin for long periods. The current tissue engineering skin model is not morphologically normal as it consists of a simple bilayer epidermis without appendages and an undifferentiated dermis. We recently developed a new isolation and culture system, which could maintain multipotential of skin cells after expanded *in vitro*. The culture-expanded skin cells were able to regenerate a full-thickness human reconstituted skin (hRSK) after grafting onto the immuodeficient mouse. The histological structure of hRSK is similar to that of human skin and we created a wound on the regenerated skin, and found the skin could heal by itself, and the healing procedure is similar to normal human skin. This data suggested this mouse model could used to study human skin wound healing *in vivo*.

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Morphological patterns and variations of the incisivus labii superioris muscle

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Catholic Kwandong University, South Korea

The current study examined the incisivus labii superioris muscle (ILS) and its morphologic and spatial relationships with the surrounding structures, especially focusing on the upper mucolabial fold, labial glands, and modiolar region. ILSs were investigated in 52 specimens from embalmed Korean adult cadavers. ILSs were observed in all specimens (100%). The ILS had an oblique and linear origin. The ILS originated from the incisive fossa of the maxilla to the point just the medial to the origin of the levator anguli oris muscle (LAO). The medial arising fibers of the ILS curved upward and laterally. The ILS muscle fibers filled the space between the orbicularis oris muscle (OOr) and the LAO with fan shape. As the ILS coursed arching laterally, it became the superolateral margin of the OOr, enlarging the dimension of the superior peripheral part of the OOr. And it deepened the superolateral margin of the OOr posteriorly. The arising fibers of the ILS arched and covered the prominent labial glands at the superior margin of the OOr. After the ILS coursed laterally along the anterior part of the upper mucolabial fold, the ILS was divided into the superficial or deep inserting fibers of the ILS in most specimens. The deep inserting fibers of the ILS were divided into several slips to blend with several muscles in the modiolar area: the deep fibers of OOr, deep fibers of zygomaticus major muscle, or the superior fibers of buccinator. These specific results will be helpful for analyzing the movements of the mouth and lips and performing various facial surgeries and treatments.

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Lichen planus: Practical insight

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Lichen planus (LP) is a common chronic inflammatory disease of unknown origin, usually affecting middle-aged women. LP can involve the skin, mucous membranes, nails and hair. Treatment modalities depend on disease location, type and severity, as well as on associated diseases. It manifests a great challange due to different clinical presentations, the lack of clinical guidlines and great impact on the quality of life. Early diagnosis and indroduction of effective treatment is mandatory to improve the patient's quality of life and to prevent complications. Here, we will present an insight on different clinical presentations and the effective treament including alternative methods like alitretinoin, acitretin, and photochemotherpy, with a view on certain associations that will enhance our understanding about the pathogenesis of the disease.

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The science behind mesotherapy

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Mesotherapy is a technique developed in France in the 1950s by the renowned practitioner Dr Michel Pistor. It was recognized as a medical treatment by the French Academy of Medicine in 1987 and has since successfully been used in many countries all around the world. In the aesthetic field, mesotherapy can be defined as a non-surgical technique aimed at diminishing difficult areas in the skin such as cellulite, stretch marks and alopecia, while also offering a treatment for body contouring as well as face, neck, and hand rejuvenation. Mesotherapy is administered via several microinjections, either manually or using a mesotherapy gun, which contain a poly-revitalizing solution that contains various medicines, vitamins and minerals. The solution can be injected into the epidermis and the dermis using four different injection techniques. Different techniques are used depending on the aesthetic concern and the depth of injection required for treating this concern. The intraepidermal technique, popular for facial rejuvenation, reaches a depth of 1 mm; the papular technique reaches a depth of 2 mm and can be used to treat wrinkles; the nappage technique, which can be used on the scalp and as a cellulite treatment, reaches between 2–4mm; while the point-by-point technique reaches a depth of 4 mm in the skin and is used mainly for fat reduction. While it is interesting, a discussion of treatment techniques is outside the scope of this article. The author will instead use this opportunity to provide a detailed overview of each of the different substances employed in poly-revitalizing solutions and explain how the skin reacts to them. Doing so, will hopefully help and support practitioners incorporate mesotherapy.

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Combining FUT with FUE in hair restoration—where are we?

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Hair transplant surgery, being an aesthetic procedure, the naturalness of the results is desirable. With modern techniques of implantation there is no doubt on the results, but the density of the grown hair as a result of single surgery may concern many surgeons. When the patient has low class of androgenic alopecia (II-IV), there is almost no problem arising as far as density is concerned. Problem of poor density appears in patients with high classes of male pattern hair loss (V–VII classes by Norwood) with poor donor supply. For obtaining good results, they need huge number of follicular unit (FUs), i.e. around 6000–12,000 FU transplantation. It's quite difficult to maximize the donor harvesting as only 2500–3500 grafts can be taken out from most of the patients in a single session and sometimes the patient may need multiple sessions for full coverage and good density, which may bother the patients. Transplantation of 4000–8000 FUs is intended for patients with high level of baldness (Norwood IV–VII classes). Many technical advancements have been proposed in recent years to increase the number of harvasted grafts. Combining follicular unit transplantation (FUT) with follicular unit extraction (FUE) technique is one of the best options to obtain such kind of high yield graft in a single session.

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JOINT EVENT

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Using PRP/PRFM as an alternate method to traditional HA dermal fillers in the face as a stand-alone procedure or in combination with HA dermal filler

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Platelet rich plasma (PRP) has been utilized for many years in orthopedics and various other specialties as a means of regenerating new tissue, collagen formation, and vascularity in the joints and body. Because it is autologous, the complication and infection rate is substantially low. It is also a useful alternative procedure for patients wanting only "natural" products administered. Volume deficiency in areas of deeper folds, such as the nasolabial folds (NLFs), typically is treated with injectable dermal fillers alone. Disadvantages include reabsorption, and foreign body reactions such as encapsulation, granuloma formation, or infection, in the case of injectable, permanent fillers. For areas such as this, a combination of hyaluronic acid (HA) and PRP has shown favorable outcomes. The HA product acts as scaffolding for the PRP, which is also injected intra-dermally. Growth factors that are released activate multipotent stem cells that trick the body into thinking there has been an injury, resulting in new tissue regeneration. With the global popularity of procedures such as the vampire facelift and vampire facial, PRP has been gaining more and more recognition in the aesthetic world. Because it does not cause hypersensitivity or foreign body allergic reactions, PRP/platelet-rich fibrin matrix (PRFM) can be a wonderful substitute for patients who do not wish for an HA or permanent type of filler or used in conjunction with HA in the face.

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