

Scientific Tracks & Abstracts



## Sessions on

Ear Surgery and Myringotomy | Sinusitis | Tissue Regeneration | Surgical Wound Care | Wound Ulcers

Session Chair

**A E Ingram**

Ingram Cosmetic Surgery | USA

### Session Introduction

**Title: New horizon for the middle ear surgery with regeneration of the tympanic membrane**

**Shin-ichi Kanemaru** | Translational Research Center for Medical Innovation | Japan

**Title: Clinical and economic burden of diabetic foot ulcers: A 5-year longitudinal multi-ethnic cohort study from the tropics**

**Zhiwen Joseph** | Woodlands Health, National Healthcare Group | Singapore

**Title: Effect of soft silicone foam dressings on intraoperatively acquired pressure injuries: A randomized study in patients undergoing spinal surgery**

**Tae-Yeong Yang** | Samsung Medical center | South Korea

**Title: Adipose-derived stromal vascular fraction enhances cutaneous wound healing in an animal model**

**Eleni Karagergou** | Papanikolaou General Hospital | Greece

## 2<sup>nd</sup> World Congress on **Otolaryngology and Wound Care**

August 30, 2021

### **New horizon for the middle ear surgery with regeneration of the tympanic membrane**

**Shin-ichi Kanemaru<sup>1</sup> and Rie Kanai<sup>2</sup>**

<sup>1</sup>Translational Research Center for Medical Innovation, Japan

<sup>2</sup>Foundation for Biomedical Research and Innovation, Japan

Recent progress in regenerative medicine has provided us with various scaffolds and growth factors that make it possible to accelerate tissue repair. Applying modern *in situ* tissue engineering principles, we developed a new regenerative treatment for tympanic membrane (TM) perforation using a combination of basic fibroblast growth factor (b-FGF), gelatin sponge, and fibrin glue without the need for conventional surgical procedures and cell transplantation. There are numerous advantages to this regenerative treatment. Skin incisions and harvesting of autologous tissues are not required. It is possible to regenerate normal TM morphology fully. High success/cure rates and ideal hearing improvements are possible. It can be performed within 20 minutes and is a simple, easy outpatient procedure.

This regenerative treatment for the TM perforation was approved in November 2019 by the National Health Insurance in Japan. Before the approval, Retympha® (Norvel Pharma Inc., Tokyo, Japan), a specialized medicine for TM perforation, received pharmaceutical approval in Japan.

We have been limited the adaptation of this treatment to patients with dry and no active inflammation in the TM and the tympanic cavity. In addition, temporal bone CTs were analyzed to ensure that all patients had proper aeration in the mastoid and tympanic cavities before treatment. We also initially selected patients without cholesteatomas or tumors in the tympanic cavity and no severe calcification/osseous metaplasia of the TM. However, to expand its adaptation, we attempted to apply this treatment to patients with the above lesions localized to the tympanic cavity by an endoscope.

This new regenerative therapy is useful not only for patients with simple TM perforations but also for some patients who need tympanoplasty. This innovative regenerative therapy that is an easy, safe, cost-effective, and minimally-invasive treatment will open the new horizon of middle ear surgery.

#### **Biography**

Shin-ichi Kanemaru graduated from Kyoto University, he worked in the Department of Otolaryngology of Osaka Red Cross Hospital and Kitano hospital. While he worked in Kyoto University Hospital as an assistant professor, he went abroad to London Tissue Repair and Engineering Center and got PhD in the study of regeneration of larynx at Kyoto University. At present, he takes up chief director of the Hearing Disturbance and Tympanic Membrane Regeneration Center in Kitano hospital, clinical professor in Kyoto University and concurrently serve as researcher in Translational Research Center for Medical Innovation, Foundation for Biomedical Research and Innovation, Kobe, Japan. My field of subspecialty is middle ear, inner ear, and skull base surgery and regenerative medicine in the field of head and neck. Regenerative treatment of tympanic membrane has been covered by National Health Insurance in Japan from 2019. I'm going to spread this treatment all over the world, especially, developing countries.

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**Clinical and economic burden of diabetic foot ulcers: A 5-year longitudinal multi-ethnic cohort study from the tropics**

**Zhiwen Joseph**

Woodlands Health, National Healthcare Group, Singapore

Diabetic foot ulcers (DFUs) present a substantial clinical and economic burden to healthcare systems around the world, with significant reductions in quality of life for those affected. We aimed to analyse the clinical and economic burden of DFU via a 5-year longitudinal multi-ethnic cohort study. A longitudinal analysis of inpatient and outpatient DFUs data over 5 years from a university tertiary hospital in Singapore was performed. Data included baseline characteristics, clinical outcomes, hospitalisation, and outpatient details. Descriptive statistics, Kaplan–Meier survival analyses, and Cox proportional hazard models were performed. Patients treated for DFUs (n = 1729, mean patient age of 634 years) were assessed. The cohort consists of Chinese (61.4%), Malay (13.5%), and Indian (18.4%) patients. Common comorbidities included peripheral arterial disease (74.8%), peripheral neuropathy (14.5%), and a median haemoglobin A1c of 9.9%. Patients underwent toe(s) amputation (36.4%), transmetatarsal amputations (16.9%), or major amputations (65%). The mean length of inpatient stay for ulcer-only, minor amputation, and major amputation was 13.3, 20.5, and 59.6 days, respectively. Mean cost per patient-year was US\$3,368 (ulcer-only), US\$10,468 (minor amputation), and US\$30,131 (major amputation). Minor amputation-free survival was 80.9% at 1 year and 56.9% at 5 years, while major amputation-free survival was 97.4% at 1 year and 91.0% at 5 years. In conclusion, within our multi-ethnic cohort of patients from the tropics, there was significant clinical and economic burden of DFUs, with a high wound per patient ratio and escalating healthcare costs corresponding to more proximal amputation levels.

**Biography**

Zhiwen Joseph completed his general surgical training as the inaugural resident at NHG-AHPL General Surgery Residency Program and as the inaugural president of the residents' council, Joseph completed his vascular and endovascular fellowships at Tan Tock Seng Hospital (Singapore), Leeds General Infirmary (UK) and St Thomas Hospital (UK), including a visiting fellowship at Kings College Hospital Diabetic Foot Clinic (UK). He is currently an NHG-LKC clinician-scientist fellow and is active in vascular research, with research interests in wound care, diabetic limb salvage, artificial intelligence, and health economics. To date, he has received more than \$3,500,000 in research grants and co-authored more than 40 publications. He had been awarded the Society of Vascular Surgery International Scholars Program and NMRC Research Training Fellowship in 2020. Joseph is passionate about health systems innovation and multi-disciplinary holistic approach in diabetic limb salvage.

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# 2<sup>nd</sup> World Congress on Otolaryngology and Wound Care

August 30, 2021

## Effect of soft silicone foam dressings on intraoperatively acquired pressure injuries: A randomized study in patients undergoing spinal surgery

Tae-Yeong Yang<sup>1</sup>, KangBuk<sup>1</sup> and Sung Hee Shin<sup>2</sup>

<sup>1</sup>Samsung Medical center, South Korea

<sup>2</sup>Kyung Hee University, South Korea

The use of prophylactic dressings to help prevent intraoperatively acquired pressure injuries (IAPIs) merits further study.

**Purpose:** To examine how the use of a soft silicone foam dressing affects the development of IAPIs in patients undergoing spinal surgery to obtain baseline data supporting evidence-based nursing care.

**Methods:** Using a self-controlled study design, 64 patients requiring thoracic or lumbar surgery on a Wilson frame at a hospital in Seoul, South Korea, were recruited between February 12 and September 1, 2018; 50 patients were eligible. Basic demographic, health, and surgical data were obtained. Before surgery, the left or right-side chest and iliac crest area were randomly assigned to be covered with a soft silicone foam dressing. The areas were assessed at 2 time points: immediately after and 30 minutes after surgery.

**Result:** The majority of participants were male (26, 52%). Average patient age was 62.54 ( $\pm$  13.83) years. Average length of surgery was 218.4 ( $\pm$  137 minutes). Immediately after surgery, 26 IAPIs were observed and there was a significant difference between dressed and non-dressed chest areas for number of IAPIs (4% vs. 28%;  $P = .002$ ). After 30 minutes, the total number of IAPIs was 20 and the difference between IAPIs in the iliac crest area was significant between dressed and non-dressed areas (0% vs. 14%;  $P = 0.012$ ). After 1 week, there were no chest or iliac crest IAPIs in the areas that had been covered by a dressing; 8(61.5%) chest and 4(30.8%) iliac crest area IAPIs remained when no dressing had been applied. The majority of IAPIs were stage 1 at all assessment times.

**Conclusions:** The results of this study show that many stage 1 IAPIs do resolve over time and that use of soft silicone foam dressings during spinal surgery can significantly reduce IAPI rates.

**Table 3. Presence of a pressure injury immediately following surgery (N = 50)**

	Experimental area	Control area	$\chi^2$	P value
	No. (%)	No. (%)		
<b>Chest (n = 100)<sup>a</sup></b>				
IAPIs - yes	2 (4.0)	14 (28.0)	10.71	.002
IAPIs - no	48 (96.0)	36 (72.0)		
<b>Iliac crest (n = 100)<sup>b</sup></b>				
IAPIs - yes	0 (0)	10 (20.0)	11.11	.001
IAPIs - no	50 (100)	40 (80.0)		

IAPIs, Intraoperatively acquired pressure injuries.  
<sup>a</sup>The chest area of 50 participants was divided left and right into the experimental area and the control area; these were marked as 100 sites.  
<sup>b</sup>The iliac area of 50 participants was divided left and right into the experimental area and the control area; these were marked as 100 sites.

### Biography

Tae-Yeong Yang is a nurse who cares for neurosurgery patients at Kangbuk Samsung Medical Center in Seoul, Korea. As a nursing clinician, he is currently pursuing a doctoral course at Kyung Hee University's College of Nursing Science for in-depth nursing research. He is interested in preventive care and methods to reduce secondary complications that patients experience in hospitals.

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## Adipose-derived stromal vascular fraction enhances cutaneous wound healing in an animal model

**Eleni Karagergou**

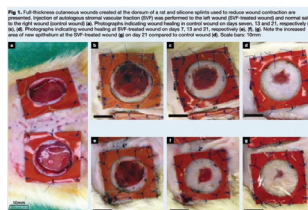
Papanikolaou General Hospital, Greece

**Introduction:** Limited data exist regarding the correlation between adipose-derived stromal vascular fraction (SVF) and wound healing. The aim of this study was to investigate the direct effect of intradermally injected SVF on full-thickness cutaneous wounds in a murine model.

**Materials and Methods:** Wistar rats were divided into four groups (A, B, C and D) according to their day of euthanasia (day 3, 7, 16 and 21). Inguinal fat pad was excised and SVF enzymatically extracted. Full-thickness cutaneous wounds were created on each side of the dorsum; SVF injected intradermally at one side while the contralateral wound served as control receiving normal saline. Postoperatively, evaluation of wound healing was performed by planimetry (percentages of wound contraction, epithelialisation and total wound healing) on days 0, 3, 5, 7, 10, 13, 16 and 21, and histology and immunochemistry (cellular infiltration score, collagen production score, neoangiogenesis and epithelial thickness) on days 3, 7, 16 and 21. Additionally, measurement of the growth factors VEGF-A, PDGF and TGF- $\beta$ 1 was performed by RT-PCR, following m-RNA isolation from tissue samples.

**Results:** Despite the high rate of wound contraction, it was significantly lower in the SVF-treated wounds on day 21 ( $p=0.037$ ). On days 13, 16 and 21, the percentages of epithelialisation were higher in the SVF-treated wounds ( $p=0.026$ ,  $p=0.048$  and  $p=0.05$ , respectively). Histologically, the number of new vessels was significantly higher in the SVF-treated wounds compared with controls on days seven ( $p=0.028$ ) and 16 ( $p=0.027$ ). This increased angiogenesis was also confirmed by immunohistochemistry and by increased expression of the angiogenic growth factor VEGF-A which was observed in treated wounds compared to control wounds on day 3. No significant differences were found between treated and control wounds regarding cellular infiltration score, collagen production score and epithelial thickness.

**Conclusions:** Data indicate that intradermally injected SVF increases angiogenesis and enhances epithelialisation in full-thickness cutaneous wounds in rats.



### Biography

Eleni Karagergou was born in Thessaloniki and graduated from Medical School of Democritus University of Thrace. She was specialized in plastic and reconstructive surgery in United Kingdom, and she is a member of Royal College of Surgeons of Edinburgh (MRCSEd). Her PhD thesis was on adipose stem cells, and she is a fellow of the European Board of Plastic Reconstructive and Aesthetic Surgery. She is currently working as a consultant plastic surgeon at Papanikolaou General Hospital in Thessaloniki, Greece, and she has a special interest in regenerative medicine and adipose derived regenerative therapies.

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## Sessions on

Plastic & Reconstructive Surgery | Laryngology | Otolaryngology | ENT Implants and its Application | Tinnitus

Session Chair

Michael J Nuara

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### Session Introduction

**Title: Laryngeal function impairment - How can it be functionally restored? Understanding how laryngeal reinnervation works**

Julie van Lith-Bijl | Flevo Hospital Almere | The Netherlands

**Title: Vertical mandibular bone augmentation by the osteodistraktion of the transplanted fibula free flap: A case series with long-term follow-up**

Tamas Sass | Bacs Kiskun County Hospital | Hungary

**Title: Immunological aspects of the use of low molecular weight hyaluronic acid in mesotherapy**

Alexandra I Sergeeva | Rostov State Medical University | Russia

## 2<sup>nd</sup> World Congress on **Otolaryngology and Wound Care**

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### **Laryngeal function impairment - How can it be functionally restored? Understanding how laryngeal reinnervation works**

**Julie van Lith-Bijl**

Flevo Hospital Almere, The Netherlands

Injury to the RLN can result in impairment of all three laryngeal functions. The RLN is capable of regeneration but laryngeal functions in cases of severe injury remain impaired. This permanent impairment is caused by either incomplete regeneration and/or occurrence of laryngeal synkinesis.

Laryngeal reinnervation can be approached either non-selectively, focusing on nerve reconstruction or selectively, focusing on separate target muscle reinnervation. Nonselective reinnervation comprises anastomosis to the mainstem of the RLN leading to reinnervation of both abductor and adductor muscle groups (nerve-based reconstruction). In selective reinnervation abductor and/or adductor muscles are separately reinnervated (function-based reconstruction).

A review of laryngeal reinnervation techniques, results in animal models and the results achieved in patients is given. The clinical implications of reinnervation in unilateral as opposed to bilateral vocal fold paralysis are considered.

For unilateral vocal fold paralysis, non-selective reinnervation good voice results can be achieved. It has the advantage that no foreign materials need to be implanted and may also be used in a growing larynx in the case of children or adolescents. For bilateral vocal fold paralysis good functional results, recovery of airway as well as voice, can be achieved with selective (or function-based) reinnervation.

#### **Biography**

Julie van Lith is the director of Laryngology of The voice and Swallowing Centre in Almere, The Netherlands and has worked in the Department of Laryngology in Clinique Universitaires Saint-luc, Brussels, Belgium. She has a special interest in laryngeal nerve re-innervation. She is a member of the European Laryngological Society and is active in the international arena lecturing on neurotology.

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## 2<sup>nd</sup> World Congress on **Otolaryngology and Wound Care**

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### **Vertical mandibular bone augmentation by the osteodistraction of the transplanted fibula free flap: A case series with long-term follow-up**

**Tamas Sass**

Bacs Kiskun County Hospital, Hungary

We present a case series, short-, medium- and long-term outcomes to demonstrate the long-term reliability of fibula free flap with secondary distraction of the flap for the purposes of dental rehabilitation with implant therapy. The approach is known and widely applied, but long-term reports with both hard- and soft tissue outcomes are rare. Function and esthetics are considered, focusing both on the hard and the soft tissues. Annually, an average of 15 mandible reconstruction surgeries are performed in our practice with the fibula free flap approach. Approximately every other patient receives full mouth rehabilitation with implant-retained restorations following mandibular reconstruction. Four cases are presented. In all the presented cases, the reconstructed mandibular segment was longer than 11 cm. Therefore, the duplication of the fibula free flap, the “double barrel technique” was not possible at the time of the primary surgery. In all four cases, the outcomes suggest that in the case of large mandible defects, fibula free flap with secondary distraction of the flap is a safe and reliable approach to the surgical rehabilitation of the atrophic alveolar ridge prior to dental implant therapy. In all cases, the method yielded lastingly favorable outcomes, both functionally and esthetically.

#### **Biography**

Tamas Sass graduated in 2002 from the Faculty of Dentistry of Semmelweis University of Medicine. After graduating from university, he worked as a resident at the Central Institute of Dentistry from 2002-04 and then took a professional exam in October 2004 and became a specialist in dental and oral diseases. From 2004-06 he worked in the Department of Maxillofacial and Oral Surgery of St. Roch's Hospital. Since 2007 he has been employed by the Department of Maxillofacial and Oral Surgery of Kecskemet County Hospital. In January 2007, became a specialist in dentoalveolar oral surgery and have been a member of the medical team of the Uniklinik Zuglo Dental Center since November 2004. In 2012, he earned his second degree from the Faculty of General Medicine at Semmelweis University of Medicine. In 2015, became a specialist in maxillofacial surgery and in 2016, he was appointed as chief physician in the Department of Maxillofacial and Oral Surgery of Kecskemet County Hospital. He is a member of the Hungarian Medical Chamber and the Hungarian Society of Facial, Maxillofacial and Oral Surgery.

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## 2<sup>nd</sup> World Congress on **Otolaryngology and Wound Care**

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### **Immunological aspects of the use of low molecular weight hyaluronic acid in mesotherapy**

**Alexandra I Sergeeva and Lyudmila P Sizyakina**  
Rostov State Medical University, Russia

Mesotherapeutic procedures with hyaluronic acid have become more popular. We observed 50 subjects who had this procedure for the first time, and who were assessed before, after, in 3 and 6 months after the course. Mesotherapy was carried out in a course of 5 procedures with an interval of 14 days.

We studied the determination of the expression of CD3, 4, 8, 16, 19, 25, 95 lymphocytes, the intracellular content of FoxP3 and granzyme B, the expression of TLR2, TLR4, TLR9 on peripheral blood monocytes. The oxygen-dependent metabolic activity of neutrophils was assessed in the NBT test, the level of IgA, IgM, IgG, the level of IgE, as well as total bilirubin, alkaline phosphatase, aspartate aminotransferase, alanine aminotransferase, total protein, thyroid hormones.

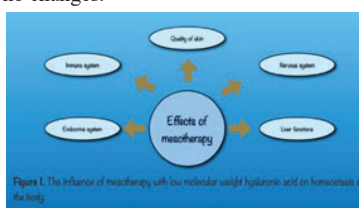
After the course the dermatological index showed changes for the better in the quality of life, objective clinical data as well as dermatoscopy revealed improvements in the skin condition.

Immunological indicators: the processes of maturation and cytotoxicity of T- effectors are enhanced with inhibition of the microbicidal activity of neutrophils, a tendency towards a decrease in the helper activity of lymphocytes, the processes of early activation increase. The endocrine system: a decrease in TSH. Hepatocytes: a decrease in the content of total bilirubin, transaminases, alkaline phosphatase.

After 3 months: functioning of the immune system - a restoration of the adaptive reserves of neutrophils; an increase in the helper function of lymphocytes, normalization of the immune-regulatory index, a moderate decrease in the content of T-regulatory lymphocytes with suppressive effects. Liver, endocrine system, emotional state - no changes.

After 6 months: an increase in the number of lymphocytes with helper activity with a simultaneous inhibition of the cytotoxic effect, and an increase in the functional activity of neutrophils with a decrease in the adaptive reserves of neutrophils.

Liver, endocrine system, emotional state - no changes.



#### **Biography**

Alexandra Sergeeva is an experienced specialist with excellent knowledge of cutting-edge technologies in modern dermatology and cosmetology. She is an expert in such areas as various facial procedures, mesotherapy, thread lifting, face contouring, laser, botulotoxin, IPL therapy and many others. Her desire to master the skills constantly has led to becoming a certified GP with aesthetic privilege in one of the most famous clinics in the UAE. In particular, she is eager to research the influence of injection procedures in cosmetology on functioning of the immune system.

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# Young Researcher Forum



# 2<sup>nd</sup> World Congress on Otolaryngology and Wound Care

August 30, 2021

## The applicability of the tinnitus and hearing survey (THS) in the differentiation of tinnitus and hearing complaints

**Amanda Rodrigues Scheffer, Maria Carolina Ferreira and Maria Fernanda Caponi Garcia Mondell**  
University of Sao Paulo, Brazil

Purpose: to verify the applicability of tinnitus and hearing survey (THS) to measure and differentiate complaints of tinnitus, hearing loss and sound tolerance. Methods: THS was performed, composed by 4 questions about tinnitus, 4 about hearing loss and one about sound tolerance. Previously, all participants performed a battery of audiological diagnostic tests and then divided into 4 groups: Bilateral normal audiometry with mean up to 25dB, with and without tinnitus complaint (Groups 1 and 3); diagnosis of mild to moderate neural sensory hearing loss (26dB to 60dB), no previous use of individual hearing aids, complaining of chronic tinnitus ( $\geq 6$  months) and, individuals without tinnitus complaints (Groups 2 and 4); and age  $\geq 18$  years old. Results: Seventy subjects were included in this study. Regarding the analysis of the total between the groups by the Kruskal-Wallis test, significant differences were found in sections about tinnitus and hearing Loss, but there was no significance in section of sound tolerance. Regarding the questions in Section A of the THS, only groups 3 and 4 scored. Regarding the questions related to section B about hearing loss, the groups without hearing loss (groups 1 and 3) scored the lowest. In relation to the question of THS of section C, group 3 scored the highest. Conclusions: The THS questionnaire proved to be a useful, quick, and simple tool to assist the audiologist in the understanding and differentiation of the audiological complaints.

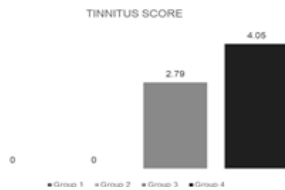


Figure 1- Representative graph of the average of the answers to the questions about tinnitus of the THS among the 4 groups.

Caption: Group 1 = no tinnitus and no hearing loss; Group 2 = with hearing loss and without tinnitus; Group 3 = no hearing loss and tinnitus; Group 4 = with hearing loss and tinnitus; Kruskal-Wallis ( $p < 0.05$ )\*.

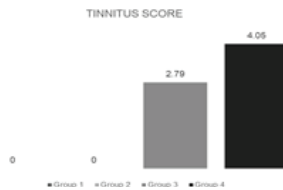


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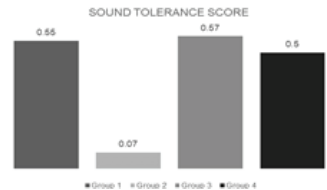


Figure 3- Representative graph of the average of the answers to the question about THS sound tolerance among the 4 groups.

Caption: Group 1 = no tinnitus and no hearing loss; Group 2 = with hearing loss and without tinnitus; Group 3 = no hearing loss and tinnitus; Group 4 = with hearing loss and tinnitus; Kruskal-Wallis ( $p < 0.05$ )\*.

### Biography

Amanda Rodrigues Scheffer is the faculty of the University of Sao Paulo (USP) and also the faculty of Dentistry of Bauru. She has done her postgraduate program in audiology and speech therapy from Bauru, Brazil. The major objective of her survey was to verify the applicability of THS to measure and differentiate complaints of tinnitus, hearing loss, and sound tolerance.

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