10th International Conference on

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August 31-September 01, 2018
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Keynote Forum
DAY 1

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Does simulation-based training increase athletic training student's clinical confidence and competence of performing a cardiovascular screening

Context: The need for increased screening to detect cardiac diseases in preparticipation physical examinations is a focus in athletic training.

Objective: To examine if a simulation-based training can increase athletic training students' self-reported confidence and clinical competence in conducting a cardiovascular screening. Design: Pretest-posttest design. Participants: 25 first-year athletic training students.

Intervention(s): Standardized cardiovascular curriculum. Main Outcome Measure(s): Learner self-reported confidence scale, multiple-choice knowledge exam, and objective structured clinical examination (OSCE) of cardiovascular assessment skills and auditory recognition of heart murmurs.

Results: Self-reported confidence increased significantly from 4.4±2.1 to 9.2±3.0 post-intervention ($F = 78.7$, $p < 0.001$) with a moderately high effect size ($h2=0.789$). Knowledge exam scores increased significantly from 11.0±2.5 to 13.6±4.0 post-intervention ($F= 5.3$, $p= 0.031$) with a low effect size ($h2=0.191$). The history-taking assessment of the OSCE increased significantly from 2.6±1.6 to 5.7±1.7 post-intervention ($F= 70.1$, $p< 0.001$) with a moderately high effect size ($h2=0.751$). The clinical skills assessment of the OSCE increased significantly from 4.1±2.8 to 15.6±1.6 post-intervention ($F= 415.4$, $p< 0.001$) with a high effect size ($h2=0.952$). Conclusions: Simulation-based training is an effective tool for increasing students' self-reported confidence and competence in conducting a cardiovascular screening.

Biography

Jennifer Doherty-Restrepo is a Clinical Associate Professor and Chair of the Department of Athletic Training in the Nicole Wertheim College of Nursing and Health Sciences at Florida International University. Her areas of expertise include andragogy, simulation-based instruction, and professional as well as continuing education in athletic training. Jennifer serves the Athletic Training Profession as a manuscript reviewer for the Journal of Athletic Training and the Athletic Training Education Journal. She is an Associate Editor for the Athletic Training Education Journal. Jennifer serves the Commission on Accreditation of Athletic Training Education as a site visitor. Additionally, she is the Chair of the University and College Athletic Training Student Committee of the Athletic Trainers' Association of Florida. In recognition of her service and contributions to athletic training education, Jennifer was the recipient of the 2015 Athletic Trainers' Association of Florida University and College Athletic Trainer of the Year award.

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Denis Larrivee, J Clin Case Rep 2018, Volume 8
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Denis Larrivee

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Contemplative revelations: Higher faculties in global nervous system integration

Contemplative meditation reveals a latent capacity for personal integration that enhances mental and physical health through relational and transcendent ordering. Studies of a related meditative practice, mindfulness, reveal, for example, not only positive phenomenological benefits but also substantive physical changes in underlying neural and bodily factors, which are correlated with the duration and frequency of meditative practice. The extended intentional focus of contemplative meditation acquired from the Christian legacy, and then evolved in its later development, implicates an even greater breadth of neural deployment that assists personal integration. They suggest, thereby, a scope of disciplinary consolidation that exceeds that of mindfulness and so likely activates a broader and corresponding range of integrative processes that are latent for implementation as needed. The role played by the brain and nervous system in the self-integration of higher faculties, however, is neglected in current philosophy of science models that guide empirical neuroscientific praxis; this latter, rather, are premised on the brain's mediation of coherent and coordinative operation instead of the systemically mediated, mutually constraining influences of peripheral and central neural networks. Indeed, results from contemplative meditation suggest that body and brain are unified through their ordering to higher systemic and ontological ends. Bodily performance in and through intentional actions, for example, shapes the brain and body's neural architecture to yield an integral performance unit. In like manner, higher faculties, like personal identity and intention, emerge from the extended peripheral network throughout the body to unify the whole individual in actions, such as those promoted in contemplative meditation. This paper will pursue an evidence-based presentation, discussing the underlying neural events through which self-autonomous actions promote and assist personal integration.

Biography

Denis Larrivee is a Visiting Scholar at Loyola University Chicago and has held professorships at the Weill Cornell University Medical College in New York City and Purdue University, West Lafayette, Indiana. A former fellow at Yale University's Medical School and Department of Biology he received the Association for Research in Vision and Opthalmology's first place award for studies on photoreceptor degenerative and developmental mechanisms. He is the current editor of a text entitled Brain-Computer Interfacing and Brain Dynamics with InTech Publishing and an editorial board member of the journals Annals of Neurology and Neurological Sciences (USA) and EC Neurology (UK). An International Neuroethics Society Expert he is the author of more than 50 papers and book chapters in such varied journals/venues as Neurology and Neurological Sciences (USA), EC Neurology (UK), Journal of Neuroscience, Journal of Religion and Mental Health, and IEEE Explore.

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Russell D Weisz
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Extracellular matrix xenografts in the treatment of open fractures of the extremities with large soft tissue defects

Introduction: Application of biologic scaffolds such as extracellular matrix (ECM) products is a promising trend in the treatment of complex wounds in orthopedic trauma patients without the use of flap coverage.

Patients and Methods: Study included a cohort of patients with open fractures of bones and large skin defects. Wounds were complex in nature based on one of the following: 1) vascular injury with tissue ischemia, 2) large skin and soft tissue defects in challenging areas (e.g. plantar weight bearing aspect of the heel, high mobility zone of the antecubital fossa, etc.), 3) large area of exposed bone with no viable local rotational flap coverage, 4) type IIIB open tibia fractures. All patients underwent sequential debridements with provisional external and definitive internal stabilization of the skeletal injuries. Sequential xenograft applications of porcine urinary bladder ECM products (Cytel Wound Matrix and MatriStem MicroMatrix, ACell Inc. Columbia, MD) were performed from 2 to 4 times in each patient. In all patient's negative pressure wound therapy (NPWT) was utilized.

Results: In all patient's stable soft tissue coverage was achieved after xenograft implantation and regeneration of the granulation tissues which was followed by the split-thickness skin graft (STSG). Multiple applications of the ECM provided soft tissue coverage to a degree which alleviated the need for flap placement. In one area (heel) complete closure was achieved with the use of ECM sheets alone and without subsequent STSG.

Conclusions: The clinical outcomes demonstrated that even in challenging cases where local flap coverage of bone or neurovascular structures is not possible, sequential xenograft implantation allowed to achieve a stable soft tissue envelope. Different forms of ECM products are easy to apply in the presence of orthopedic hardware. In certain wounds, the complete closure can be achieved even without subsequent skin grafting. We recommend the relatively early application of xenograft

Biography

Russell D Weisz is a board certified orthopedic surgeon who began his medical training at the State University of New York Health Sciences Center at Brooklyn where he graduated Magna Cum Laude. He then completed his orthopedic surgical residency at the Hospital for Joint Diseases/New York University and concluded his training with a one-year fellowship in orthopedic traumatology at Tampa General Hospital. Weisz is the director of orthopedic trauma at Delray Medical Center, a level one trauma center in Palm Beach County Florida. He specializes in the treatment of complex fractures and the reconstruction of fractures that have not healed or have become infected. Weisz is a clinical affiliate Assistant Professor at the Department of Surgery, Florida Atlantic University, Charles E Schmidt College of Medicine. Weisz is involved in clinical research and is a principal investigator of the study "Assessing the efficacy of IV ibuprofen for treatment of pain in orthopedic trauma patients".

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Franz Muller, J Clin Case Rep 2018, Volume 8
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Peri-implant femoral fractures: The risk is more than three times higher within the proximal femoral nail compared with dynamic hip screw

Introduction: Information is lacking regarding incidence rates, treatment regimens, and outcomes concerning peri-implant femoral fractures (PIF). Therefore, we performed a retrospective study to provide scientific data concerning the incidence and outcome of PIF following osteosynthesis of proximal femoral fractures (PFF).

Material & Methods: We retrospectively included all patients who received osteosynthesis for PFF between 2006 and 2015 and in whom PIF was confirmed postoperatively. All available patients with PIF were contacted minimum one-year post-surgery.

Results: A total of 1.314 osteosynthesis procedures were performed, of which 705 were proximal femoral nails (PFNs), 597 were dynamic hip screws (DHSs), and 12 screwed appliances only. During the same period, 18 PIFs (1.4%) were reported. However, PIF was 3.7 times higher within PFN when compared to DHS (15/705:2.1% versus 3/597:0.5%; odds ratio: 3.7). The following analysis also included 8 patients with PIF who were referred from other hospitals, resulting in a total of 26 patients. Mean patient age was 84.8 years (range, 57–95), with a predominance in female (23x) and in the left femur (19x). PIF occurred after an average of 23.6 months (range, 1–81) post-surgery. The fractures, most of which were spiral-shaped, were most commonly treated with locking plate osteosynthesis. The surgical revision rate was 7.7%, and the one-year mortality was 23.1%. At an average of 43.0 months (range, 12–100) post-surgery, it was possible to contact 18/26 patients (69.2%), and their mean Parker Mobility Score was 5.2 points (range 2–9).

Conclusions: Peri-implant femoral fracture is a rare incident within the old age traumatology of PFF. However, based on our small number of cases, it occurred within PFN much more frequently compared with DHS. Locking plate osteosynthesis has been shown to be effective and reliable. Surgical revision and mortality rates do not appear to be increased when compared to those with the initial treatment of proximal femoral fractures.

Biography

Franz Muller is Consultant and Senior Surgeon in the largest catholic hospital in Germany. He is specialist in all kinds of orthopedic trauma incl. spine and pelvic, as well as endoprosthesis incl. revision surgery. He is first and senior author of more than 20 original papers, especially in spine surgery and trauma. In his vacations he is also working for Medecins Sans Frontieres.

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Matthew B Carroll

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Tocilizumab in the treatment of acute myocardial infarction: A review of what we know with a look to the future

Statement of the Problem: Tocilizumab (TCZ) is an important biologic response modifier that Rheumatologists routinely employ in the treatment of several systemic autoimmune diseases. TCZ binds to interleukin (IL)-6 receptors, inhibits cellular activation, and mitigates inflammation by IL-6. In mid-2017 TCZ was approved by the U.S. Food and Drug Administration for its first non-rheumatologic condition, the treatment of chimeric antigen receptor (CAR) T cell-induced severe or life-threatening cytokine release syndrome in patients 2 years of age or older. With this approval and with the increasing use of TCZ off-label for other nonrheumatologic conditions such as Castleman's Disease and its variant TAFRO syndrome, where else might TCZ be successfully utilized as treatment? Recently interesting data has been published regarding the possible use of TCZ in the treatment of myocardial infarction. This review will focus on the role of IL-6 and it's receptor in myocardial inflammation and association with adverse clinical outcomes. Discussed are results from one animal study and two human trials have been published that studied the effect of TCZ in patients with acute myocardial infarction. Finally, this review summarizes the current data and makes recommendations for future clinical trial development in what hopefully will be a promising application of TCZ for a serious non-rheumatologic condition.

Biography

Matthew B. Carroll is a board-certified Rheumatologist who is clinically active and currently employed by the Singing River Health System. He has had a passion for clinical research and has been an active member of the growing research team at his community hospital. He retired from the United States Air Force in 2017 but during his active duty service developed over 15 protocols and has published over 20 articles. A recent passion has been exploring the possible beneficial role of an IL-6 blockade on acute myocardial infarction. He launched an ambitious protocol studying the short-term effects on major adverse cardiac events which though it was eventually ended after futility analysis suggested no benefit, did enroll over 20 subjects and provided 180-day follow-up of data collection. He continues to actively lobby the study of an IL-6 blockade in other areas of Cardiology.

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Russell D Weisz
Delray Medical Center, South Palm Orthopedics, USA

Infection after fracture fixation

Background: Infection after Fracture Fixation (IAFF) can be a devastating complication leading to prolonged morbidity and loss of function for the patient. Although no single treatment algorithm exists for every patient who develops IAFF, we found that prompt diagnosis and adherence to standard treatment principles gives the best chance for a full recovery

Introduction: We identified 40 patients treated by a single surgeon who develops IAFF between 2009-2017. Patients' age, sex, mechanism of injury, classification and location of fracture, culture results, and a number of debridements (1, 2-5, >5) required were recorded. Whether the hardware had been removed, exchanged or retained was also noted. Outcomes were based upon fracture healing and if there was any evidence of ongoing infection at latest follow up.

Methods: Standard protocol included saucerization or segmental resection of any necrotic, infected bone. Placement of antibiotic beads or spacer when structural support was necessary was routinely done. Patients received six weeks of intravenous antibiotics followed by bone grafting or bone transport depending on the size of the remaining defect. In the presence of a chronic infection or gross purulence, the hardware was either removed or exchanged.

Results: There were 40 patients with IAFF, 38 involving the lower, and two involving the upper extremity. Five patients were lost to follow up. Of the remaining 35, 31 had healed their fractures at the time of latest follow up, and three patients required amputation of the involved extremity. Twenty-four patients required between 2-5 debridements, and eight required greater than five. Eleven patients had Gustilo-Anderson type IIIA, and seven had IIIB fractures. Muscle or fasciocutaneous flaps were performed in 7 patients, bone grafting was performed in 15 patients, 18 patients underwent skin grafting and two additional patients had extracellular matrix xenograft applied. Negative pressure wound treatment was used in 27 cases.

Conclusion: We found that thorough debridement of all necrotic, infected bone with use of antibiotic spacers and bone grafting when culture negative gave the best chances at a favorable outcome for this challenging patient population.

Biography

Russell D Weisz is a board certified orthopedic surgeon who began his medical training at the State University of New York Health Sciences Center at Brooklyn where he graduated Magna Cum Laude. He then completed his orthopedic surgical residency at the Hospital for Joint Diseases/ New York University and concluded his training with a one-year fellowship in orthopedic traumatology at Tampa General Hospital. Dr Weisz is the director of orthopedic trauma at Delray Medical Center, a level one trauma center in Palm Beach County Florida. He specializes in the treatment of complex fractures and the reconstruction of fractures that have not healed or have become infected. Dr Weisz is a clinical affiliate Assistant Professor at the Department of Surgery, Florida Atlantic University, Charles E Schmidt College of Medicine. Dr Weisz is involved in clinical research and is a principal investigator of the study "Assessing the efficacy of IV ibuprofen for treatment of pain in orthopedic trauma patients".

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Anthony Galea
Galea Professional Medical Inc., Canada

Cytorich: A novel anti-inflammatory/catabolic and regenerative autologous blood-derived product for osteoarthritis treatment

Statement of the Problem: Osteoarthritis (OA) is degenerative joint disease characterized by cartilage damage and synovial inflammation. Autologous blood-derived products target special inflammatory molecular pathways and have a beneficial therapeutic effect for inflammatory pathologies. The purpose of this study was to assess the in vitro and in vivo anti-inflammatory/catabolic and regenerative potential of a novel autologous blood product (Cytorich).

Materials and Methods: Blood samples from healthy donors were incubated using different techniques for 24h and analyzed for the presence of anti-inflammatory (IL-1ra), anti-catabolic (tissue inhibitors of metalloproteinases, TIMPs), regenerative, pro-inflammatory (TNF-α, IL-1) and catabolic (matrix metalloproteinases, MMPs) molecules. Double-blinded controlled clinical study was conducted to evaluate clinical effectiveness and safety of the final product using VAS and WOMAC scales.

Results: The highest concentration of therapeutic molecules targeting inflammatory and degeneration pathways in OA, as well as platelet-derived growth factor, was found in 24h 37°C incubated blood. However, the increased production of catabolic MMP9 and TNF-α and IL-1 was detected in the product. We have found that this negative effect could be blocked by adding citric acid making future OA treatment more safe and effective. Double-blinded controlled clinical study has shown a safety and efficiency of this new product. The analysis of WOMAC and VAS scores revealed improvement in pain and daily activities parameters.

Conclusion & Significance: Cytorich is an efficient and safe autologous product for OA treatment since it has been reported a a source of human bioactive molecules playing a key role in the fundamental processes stimulating tissue repair and regeneration.

Biography

Anthony Galea practices sport medicine in Toronto and is considered one of the pioneers in the uses and applications of platelet rich plasma in musculoskeletal disorders. He has functioned as a sport physician for many professional and Olympic competitions and his clients includes some of the worlds best athletes. He is also an author and researcher, his current research focuses on autologous cytokines for the treatment of osteoarthritis. He is married with seven children.

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