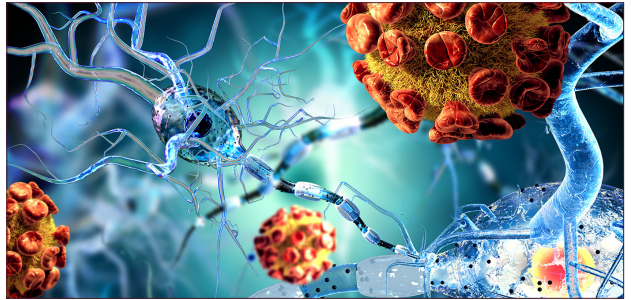


---

# Day 1 Poster

---



8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

## Epidural Steroid injections in treatment of Chronic Lower Back Pain caused by Degenerative - Dystrophic Spinal Damage

**Kvasnitskyi Mykola V**

Scientific and Practical Center of Preventive and Clinical Medicine of the State Administration Department, Ukraine

**Introduction:** High prevalence of Degenerative-dystrophic spinal damage and variability of findings concerning the efficacy of steroid injections into epidural space for treatment of chronic lower back pain makes investigation on its treatment with epidural steroid injections only a topical issue of contemporary neurosurgery.

**Objective:** The aim of the study was to enhance the efficacy of treatment of patients with chronic lower back pain caused by Degenerative-dystrophic spinal damage by monotherapy: with epidural steroid injections only.

**Materials and methods:** The long-term outcomes of the treatment of 120 patients aged 39 to 86 years with chronic lower back pain with epidural steroid injections only (main group) were analysed. The control group involved 36 patients aged 45 to 80 years with lower back pain treated conservatively. Epidural steroid injections were applied only after conventional therapy failed. The technique of middle interlaminar access without fluoroscopic imaging was used (minimally invasive interventions at an outpatient unit). One or two injections of corticosteroid into the epidural space at a 15-20-day interval were administered. The number of epidural injections depended on the clinical manifestations (relief of pain syndromes). The average number of epidural steroid injections per patient was  $1.93 \pm 0.12$  (112 patients had two injections and 8 patients – one). Besides epidural steroid injections, the main group of patients did not receive any other treatment. At the end of monotherapy, the patients were recommended therapeutic exercise to form a muscular corset. 36 patients (19 female and 17 male aged 45 to 80 years) of the control group were treated with non-steroidal anti-inflammatory drugs; vascular, restorative and dehydration therapy, physiotherapy, exercise therapy, massage, acupuncture. The groups are comparable in age, sex, disease duration and structural changes at the lumbar spine (intervertebral disc herniation, spondyloarthritis, spinal stenosis, spondylolisthesis). The results of treatment were analysed by pain regression assessment by means of the Visual Analogue Scale (VAS), as well as assessment of the functional status by the Oswestry index. These parameters

were assessed twice: before treatment and in six months its completion.

**Results:** In the main group of patients the average rate of pain by VAS before treatment was  $7.12 \pm 0.14$  points ( $n = 120$ ), and in the control –  $6.61 \pm 0.21$  ( $n = 36$ ); after treatment this indicator was  $3.42 \pm 0.12$  points ( $n = 96$ ) in the main group, and  $5.67 \pm 0.18$  ( $n = 30$ ) – in the control. Assessment of the functional state of patients of both study groups by the Oswestry index showed that before treatment it was  $49 \pm 0.6$  points ( $n = 120$ ) in the main group, and  $51 \pm 0.5$  ( $n = 36$ ) – in the control; after treatment this indicator was  $30 \pm 0.5$  points ( $n = 96$ ) in the main group, and  $47 \pm 0.4$  ( $n = 30$ ) – in the control. Thus, a significant difference has been established regarding the long-term treatment results between the main and the control groups of patients according to both the Oswestry Disability Index and the Visual Analog Scale in favour of the monotherapy method with epidural steroid injections.

**Conclusion:** The study has proved a high efficacy of monotherapy with epidural steroid injections in treatment of chronic lower back pain caused by Degenerative-dystrophic spinal damage. Epidural steroid injections are indicated in intervertebral disc herniation, spondyloarthritis, spinal stenosis, spondylolisthesis that cause chronic lower back pain after conventional therapy failed. The results of the study of the effectiveness of the technique of median interlaminar access without fluoroscopic imaging allow recommending it for treatment of lower back pain.

### Speaker Biography

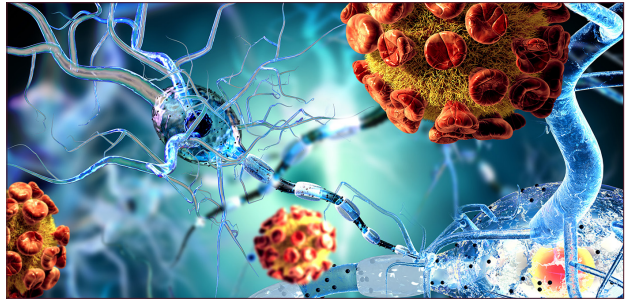
Kvasnitskyi Mykola Vasyliovych an Honoured Doctor of Ukraine is the Senior Research Associate of the Minimally Invasive Surgery Department, Scientific and Practical Center of Preventive and Clinical Medicine of the State Administration Department. He is the author of 116 scientific works, monographs, lectures, practice notes and guidelines. He has been involved in neurosurgery and neurology for more than 40 years. His area of expertise is multiple tumours of nervous system, neurotrauma, Degenerative diseases of spine, pain syndromes.

e: kvas1954s@gmail.com

---

# Accepted Abstracts

---



8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

## The Association between non-specific Neck pain and forward head posture: A cross-sectional study

Hilla Sarig Bahat

University of Haifa, Israel

**Background:** Poor posture is traditionally linked with various musculoskeletal disorders. Consequently, musculoskeletal educators have been teaching postural observation as part of the physical evaluation. Forward Head Posture (FHP) is hypothesized to be linked with neck pain; however there is no clear evidence in this topic

**Purpose:** To investigate the association between FHP and neck pain disability, intensity, and cervical kinematics in individuals with neck pain compared to asymptomatic individuals. A secondary objective of this study was to explore the possible effect of a head-mounted display (HMD) used in a virtual reality (VR) assessment on FHP.

**Methods:** The study was conducted among aged 19 to 62 with 43 volunteers (23 individuals with neck pain, 20 asymptomatic individuals). FHP was determined by measuring craniocervical angle on profile pictures. Secondary outcome measures

included the neck disability index (NDI) questionnaire, pain intensity, and neck kinematics using specialized VR software.

**Results:** In FHP, there were no significant differences between individuals with neck pain and asymptomatic individuals (craniocervical angle =  $48.24^{\circ} \pm 7.29$ ;  $48.90^{\circ} \pm 5.89$ , respectively,  $p > 0.05$ ). The neck pain individuals demonstrated a more restricted range of motion and slower neck movements ( $p < 0.05$ ). We mainly found that there is no significant association between FHP and visual analog scale, NDI, and most neck kinematic measures.

**Conclusions:** Our findings cannot support a clinically applicable correlation between FHP and neck pain. Additionally, individuals with neck pain showed lower range of motion and slower neck movements.

e: [hbahat@physicalvirtue.co.il](mailto:hbahat@physicalvirtue.co.il)

8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

## Minimally invasive access for Intradural Extramedullary Tumor Resections: Can this be done safely?

**John C Liu**

University of South California, US

**Introduction:** Minimally invasive spinal techniques have become popular amongst spine surgeons over the last 20 years. In the United States, as oppose to endoscopic approach, the utilization of sequential dilation of paraspinal musculature and tubular retractors have become the mainstay of minimally invasive spine techniques. The advantages of MIS tubular access have been well published including shorter hospital stay, decrease utilization of perioperative opioid pain medications, decrease blood loss and infections risks.

**Methods:** Over 40 patients diagnosed with intradural extramedullary thoracic and lumbar tumors were recommended to undergo MIS tubular access tumor resections. Standard MIS unilateral laminotomy and intradural access were utilized. Microscopic techniques were utilized for identification and biopsy and removal of the tumors. Primary dura mater closures utilizing MIS techniques were then performed.

**Results:** All patients received post-operative MRI within 48 hours. All patients except one had complete removal of tumor. No patients had neurological changes post-operative. No incidences of CSF leak or psuedomenioncele were identified. Tumor diagnosis included schwannoma, meningioma and myxopapillary ependymoma. The average stay at hospital was 3 days.

**Conclusion:** Intradural extramedullary tumors can be successfully removed utilizing MIS tubular access and microscopic dissection. Identification of the ideal candidate for MIS resection is of the upmost importance for a successful and safe removal. Size, characteristics of the tumor as well as its relationship to the spinal cord or caudal equina are important factors to consider.

e: [john.liu@med.usc.edu](mailto:john.liu@med.usc.edu)

8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

## A morphological characterization of the Lumbar Neural Arch in males and females with Degenerative Spondylolisthesis

Masharawi Youssef, Saher Abu-Leil, Asaf Weisman, Yizhar Floman and Fabio Galbusera

Tel Aviv University, Israel

**Introduction:** Although Degenerative Spondylolisthesis (DS) is a very common osseous dysfunction, few studies have examined the bony morphology of lumbar the neural arch in the population afflicted with DS. Therefore, the aim of this study is to characterize the neural arch (NA) morphology along with the whole lumbar spine in individuals with degenerative Spondylolisthesis (DS) and compare them to healthy controls.

**Methods:** 100 CTs from a database of 500 lumbar CTs of Spondylolisthesis were chosen. We excluded non-L4-L5 slips, vertebral fractures, vertebral Spondyloarthropaties, previous surgeries, and scoliosis. Scans were divided into a group of 50 individuals with single-level DS (grades 1-2) at L4-5 (25 females and 25 males), and an age-sex matched control group of 50 individuals. Angular and linear measurements from all lumbar segments included: vertebral canals, pedicles, intervertebral foramens, and articular facets.

**Results:** Compared with the controls, all individuals with DS had shorter intervertebral foramens in all the lumbar segments and greater pedicle dimensions in the lower lumbar segments. The lower lumbar facets were mostly wider and more sagittaly-oriented than the controls, in DS females. Larger prevalence of grade-3 facet arthrosis was found only in the DS population. In DS males, degenerated facets were examined along with the whole lumbar spine, whereas, in DS females, the facets were observed mainly in the lower lumbar segments. Individuals with DS have greater pedicle dimensions and shorter intervertebral foramens compared with controls.

**Conclusions:** Females with DS have wider articular facets, more sagittaly-oriented facets, and excessively degenerated facets than the controls. This unique NA shape may explain its greater prevalence in females compared to males and further clarify DS's pathophysiology.

e: yossefm@tauex.tau.ac.il

8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

## Prospective analysis of a Surgical algorithm to achieve Ventilator weaning in Cervical Tetraplegia

**Matthew R Kaufman**

Shore University Medical Center, USA

Chronic ventilator dependency in cervical tetraplegia is linked with substantial morbidity. Diaphragm pacing is the primary surgical treatment when non-invasive weaning methods have failed. Diaphragm motor units and phrenic nerve integrity are requirements for effective pacing but may need to be restored for successful weaning. A surgical algorithm that includes: 1. Phrenic nerve reconstruction, 2. Diaphragm pacing, and 3. Diaphragm muscle replacement, may provide the capability of lowering or reversing ventilator dependency in virtually all cervical tetraplegics. The outcomes of ten patients with ventilator-dependent cervical tetraplegia are presented in this prospective case series. Patients were treated with pacemaker alone or pacemaker + diaphragm muscle replacement or pacemaker + phrenic nerve reconstruction.

Time from surgery to observed reduction in ventilator

requirements ( $\downarrow$ VR), ventilatory needs as of most recent follow-up [no change (NC), partial weaning (PW, 1-12 h/day), or full weaning (CW, >12 h/day)], and complications are included in outcome measurements. At 6-month follow-up both patients in Group I achieved CW. At 1.5-2-year follow-up two patients in Group II achieved CW, and in another two patients PW was achieved. At 6 and 8-month follow-up the remaining two patients are NC, respectively. Both patients achieved PW at 2-year follow-up in group III. Complications included pacemaker malfunction requiring revision (n = 3) and mucous plugging (n = 1). Although more investigation is necessary, diaphragm muscle replacement or phrenic nerve reconstruction performed (when indicated) with pacemaker implantation may allow virtually all ventilator-dependent cervical tetraplegics to wean partially or completely.

e: mkaufmanmd@tpscnj.com

8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

## Role of Radiology in diagnosis of Lumbar Spinal Stenosis: Presenting a new method using CSF signal

**Mustafa Hizal**

Bolu Abant Izzet Baysal University, Turkey

Lumbar spinal stenosis (LSS) is one of the most common causes of spinal surgery and there is no gold standard method for its diagnosis. Patient history, symptoms, physical examination findings, and radiological findings are all used together for diagnosis. Main symptom of LSS neurogenic claudication, which disappears at rest and might be confusing about physical examination findings. Radiologic examinations focus on demonstrating the narrowing of spinal canal. Diagnostic tools such as the midsagittal width of the dural sac and cross-sectional area (CSA) of spinal canal and dural sac, sedimentation sign are generally used in Radiology.

These methods have different limitations and powers and might result in over- and underdiagnosis of LSS, especially in patients with moderate or mild stenosis of the spinal canal or in patients with lateral stenosis. We would like to introduce a new radiological method to diagnose LSS using a scoring system based on the cerebrospinal fluid signal loss (CSFSL) in T2-weighted images in the sagittal plane for the diagnosis of LSS. We also hope that usage of this new method on preoperative imaging will increase the safety of the operation.

e: hizal.mustafa@gmail.com



8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

## Atlantoaxial Instability due to Tumoral Lesions: A Clinical and Surgical challenge

**Pelayo Hevia Rodriguez, Alejandro Elua Pinín, Patricia Moreno Moya, Irati de Goni, Nicolas Sampron and Enrique Urculo**

Hospital Universitario Donostia, Spain

**M**anaging C1–C2 instability is very challenging, specifically when tumoral lesions are involved. Tumors of atlantoaxial spine are rare and often associated with high morbidity. Multidisciplinary approach treatments are needed, with a whole surgical resection if it is possible. Atlantoaxial instability is a potentially devastating sequela of tumor invasion and surgery. Factors like osteoporosis due to intensive corticosteroid therapy and insufficient osseoligamentous development in children could be present. Internal fixation in this region is technically challenging

given the small working channels and the proximity of neurovascular structures to the bony elements. Clinically relevant techniques all utilize a combination of screws, hooks, rods, or wires. The C1 lateral mass/C2 pars screw fixation construct is considered the more robust constructs in this region but is not always possible. Personalized 3D-Printed Vertebral Body reconstruction is an innovative technique. Perform a surgical resection and fixation preserving as mobility and quality life as possible is a real challenge for the surgeon.

e: [pelahevia@gmail.com](mailto:pelahevia@gmail.com)

8<sup>th</sup> International Conference on  
Spine and Spinal Disorders

March 18-19, 2022 | Webinar

**Retrospective analysis of Pedicle Screw accuracy for patients undergoing Spinal Surgery assisted by Brain lab navigation and Intraoperative Computed Tomography (CT) Scanner AIRO(R)**

**Ranjit Ganguly**

The Ohio State University, USA

Minimally invasive spine surgery approaches for pedicle screw instrumentation are being used more frequently. They provide shorter hospital stays for patients, shorter operative times, faster recovery, less damage to surrounding tissues and less blood loss. However, they may rely largely on fluoroscopic imaging, and confer radiation exposure to the team members and surgeon. Using AIRO Mobile Intraoperative CT by Brainlab during surgery is a way to eliminate radiation exposure to staff and may also improve the accuracy rate of pedicle screw instrumentation. We designed a retrospective analysis of our first 12 patients who had a total of 59 pedicle screws placed when we started to incorporate the AIRO iCT scanner to our surgical workflow. Projection images were saved during pedicle screw

insertion and compared to CT scans taken at the end of the case. We calculated the distances between the projected and postproedural screw locations, at both the screw tips and tulip heads. We observed a mean of 2.8mm difference between the postproedural images and projection. None of the screws placed had any clinically significant problems, and no patient needed revision surgery. Overall, iCT assisted navigation with the AIRO system is a safe addition to spinal surgery. It reduced operator and staff radiation exposure, and helped to facilitate effective MIS surgery without fluoroscopic imaging. Additional studies and research can be conducted to increase accuracy and reliability.

e: [ranjit.ganguly@osumc.edu](mailto:ranjit.ganguly@osumc.edu)