



Scientific Tracks & Abstracts



5th World Congress on

SPINE AND SPINAL DISORDERS

October 16-17, 2019 | Rome, Italy

Treatment of Thoracolumbar Transition Fractures type A3 and A4: Prospective study of pain and quality of life in Open vs. Percutaneous Arthrodesis

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Approximately 11,000 new cases of Spinal Injuries occur every year in the United States and approximately 250,000 people in this country have associated Spinal Cord Injury. The life expectancy for patients is shortened from 15 to 20 years. In the treatment, the open posterior approach, with midline incision for decompression and fusion is one of the most used techniques. However, is associated with the aggression of healthy tissue, muscle injury and increased rate of bleeding. In this context, Minimally Invasive Techniques have been increasingly used, with less damage to healthy tissues, less bleeding and reduced morbidities and complications. Nowadays, data favoring one technique over the other are insufficient, with a low number of patients studied, leading to inconclusive results and low clinical impact. Therefore, a prospective, longitudinal, multicenter study is being developed with the follow-up of individuals for 12 months. The primary objective is of assessing whether, for the treatment of Thoracolumbar Fractures, Minimally Invasive Surgery is superior to conventional surgery regarding postoperative pain and Quality of Life (QoL). All patients are being submitted to preoperative X-ray and computed tomography of the spine for decision-making and calculation of deformities. After the patients' written consent, an instrument containing the following data is being applied: demographic, hospitalization, clinical and neurological conditions and biomechanics. The following intraoperative data are being analyzed: type of surgery, number of levels fused, number of screws used, need for Laminectomy, need for previous instrumentation, blood loss, surgical time and occurrence of complications. The prognostic analysis is being performed through the application of pain and (QoL) questionnaires: Visual Analog Pain Scale, Oswestry Disability Index and SF-36. These assessments are being done at 15 days, 03, 06, 12 months after surgery. In this presentation, we will present the partial results obtained so far and the comparison of these with current literature.

Table 1 Comparison of published results describing intraoperative bleeding, operative time, infection rate and length of hospital stay.

| | Intraoperative bleeding ^a | | Operative time ^a | | Infection rate | | Length of hospital stay | |
|-----------------------------|-----------------------------------------|------------------|-----------------------------|-----------------|-----------------------------------|-----------------|-------------------------|----------|
| | Percutaneous | Open | Percutaneous | Open | Percutaneous | Open | Percutaneous | Open |
| Wild et al. [15], n=21 | 194 mL (100–300) | 380 mL (100–800) | 87 min (63–120) | 81 min (59–118) | 0 | 0 | NR | NR |
| Merom et al. [17], n=20 | 50 mL | 200–500 mL | 73–85 min | 78–102 min | 0 | 1 (superficial) | 1–2 days | 3–4 days |
| Ni et al. [18], n=36 | 75 mL | NR | 70 min | NR | 1 (superficial) | NR | 5 days | NR |
| Schmidt et al. [16], n=76 | 1 transfusion after add. ant. procedure | NR | 47 min | NR | 0 | NR | NR | NR |
| Verlaan et al. [19] | | 1000 mL | | | | 3.1% to 10% | | |
| Palmisani et al. [20], n=64 | NR | NA | 120 min (60–240) | NA | 1 (deep, instrumentation removed) | NA | NR | NA |
| Pelegri et al. [21], n=15 | NR | NA | 108 min (40–180) | NA | 0 | NA | NR | NA |

NR: number of patients; min: minutes; mL: millilitres; NR: not reported; NA: not applicable; add. ant: additional anterior.
^a Short-segment fixation.

Figure 1 C. Court, C. Vincent. *Orthopaedics & Traumatology: Surgery & Research* (2012) 98, 900–909

Biography

Gibran Franzoni Rufca has completed his degree in Medicine and Neurosurgery from the School of Medicine of São José do Rio Preto. He lives in the state of São Paulo and his main institution is the Hospital Santa Casa de Ourinhos, where he and his team provide Neurosurgical Treatments, mainly for the pathologies of the Vertebral Column.

Gibran Franzoni Rufca and his team who were brought the first endoscopic functional surgeries and minimally invasive procedures of the spine into their region. In constant updating, inside and outside the country, He is currently also a master's degree student in the Post-Graduation Program of the University of São Paulo - Campus Botucatu where he is working in the research of Pain and Minimally Invasive Surgeries of the spine, under the coordination of Prof. Dr. Flávio Ramalho Romero.

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Intramuscular Oxygen-Ozone Therapy in the treatment of Lumbar Disc Herniation

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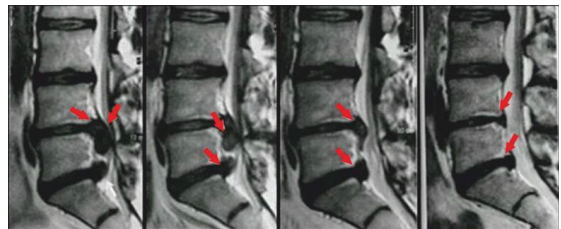
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Acute Low Back Pain is a major cause of disability, among its causes, is Disc Herniation. It is estimated that one of the usual treatment of LBP is Oxygen-Ozone Therapy. Medical Ozone [O₂ O₃] has long been used in the medical field, thanks to its antiseptic and anti-inflammatory properties. This treatment has been recommended by the National Italian Institute of Health after stipulating a Consensus Conference regulating the use of O₂ O₃ injections according to SIOOT protocol (Oxygen-Ozone Italian Society OOIS). In the treatment of Disc Herniation, the oxygen-ozone mixture acts in 3 ways:

- 1) Thanks to its hydrophobic propriety, It reduces the pulpy nucleus direct mechanic compression applied to the nerve roots.
- 2) It has an anti-inflammatory effect, as it inhibits the activation of phospholipases, COX and metalloproteases by oxydizing algogen or commonly known pain mediator such as proinflammatory prostaglandins. A survey published on "Science" has revealed that our immune system naturally produces ozone molecules to defend against infections.
- 3) It reactivates the microcirculation increasing red blood cells deformability and the production of 2-3 diphosphoglycerate, thus eradicating the vasa nervorum painful ischaemia.

Ozone application in the treatment of Disc Herniation is administered employing intramuscular paravertebral injections, according to specific SIOOT Scientific Society Oxygen Ozone therapy protocol instructions. If correctly applied, there are no side effects nor are there downsides in the method. The results of different studies on people affected by the above-mentioned pathology have shown complete healing in 88.4% of cases, a substantial improvement in 9.4% and a non-modified framework in only 2.2%.



Biography

Marianna Chierchia is a specialist in Orthopedics and Traumatology, Doctor of Research at the University of Campania Luigi Vanvitelli. Her study is on knee biomechanics, with particular regard to the ligaments of the knees, nanocomposite shelves, osteoporosis, epidemiology & genetics of scoliosis and use of ozone in orthopedic & vascular pathology.

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Spinal Metastases of two different grade Oligodendrogliomas: A case report and review of literature

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Oligodendrogliomas (OGD) are glial tumors, together with mixed oligoastrocytoma constituting 5-20% of all gliomas, which occur predominantly in younger populations and are managed with surgery and chemotherapy with good long-term prognosis after treatment and additionally present with low rates of metastases. We present the case of a 46-year-old patient with intracranial right frontal subcortical OGD [World Health Organisation (WHO) grade II] managed at the Neurosurgery Department in Foscal Clinic, Floridablanca, Colombia. Two years after brain surgery the patient presents with neurological symptomatology suggestive of Spinal Cord Compression and is found to have a neoplastic lesion with extramedullary compressive strength on the conus medullary and wrapping all of the roots with the final report of pathology and immunohistochemistry indicating: OGD (WHO grade III), this lesion was the only one found, the brain studies shows any residual tumor or recurrence in the primary tumor site.



Figure 1. Spine MRI that shows intra-axial and expansive intramedullary lesion at the level of medullary cone and vertebral bodies T12 and L1

Biography

Andreina Martinez is a General Physician from Colombia, with deep interest in Neurosurgery and Spine surgery and huge passion for clinical research. She finished her Medicine Program in Military University – Bogota with honors for her commitment and dedication to research and have the opportunity of being part to the neurosurgery team at Shaio Clinic, Military Hospital, FOSCAL - Bucaramanga. She has exhibited remarkable enthusiasm and superb medical understanding in the research area. Her ability to grasp both the medical concepts as well as the clinical implication presented to her was exceptional.

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Novel classification method for the treatment of Lumbar Foraminal Stenosis

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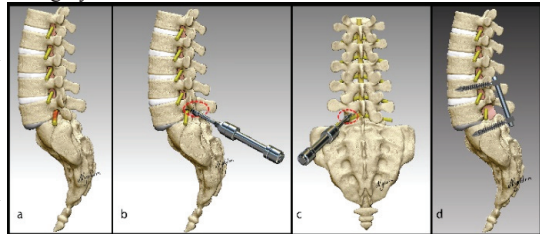
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Objective: There are numerous radiological and anatomical studies on Lumbar Foramina in the literature, but there are no distinctive studies about the relationship between treatment and the type of Foraminal Stenosis.

Methods: We retrospectively reviewed the data of patients who underwent Foraminal Stenosis. A new classification system was developed based on radiological findings and treatment modalities of this patient group. Foraminal Stenosis was divided into two groups: stable and unstable stenosis. Both groups were also divided into four subgroups in relation to their cause of and type of compression and based on the structure of the intervertebral disc. Visual Analog Scale (VAS) and Oswestry Disability Index (ODI) scores were investigated before and after surgery.

Results: Seventy-one patients (33 females and 38 males) underwent Lumbar Foraminal Stenosis. The mean patient age was 54 (range 17 to 80) years. There were 11 patients (15.5%) with stable foraminal stenosis and 60 patients (84.5%) with unstable foraminal stenosis. The majority of the patients were identified as having unstable Type 1 Foraminal Stenosis (44 of 71). The mean VAS score was 7.56 before surgery and 0.90 at two years after surgery. Moreover, the mean ODI score was 60,34 before surgery, 40,68 at 4 months after surgery and 8,0 at two years after surgery.

Conclusions: In stable stenosis, the anterior column of the spine is rigid and immobile due to disc and annulus calcification. In contrast, in unstable Foraminal Stenosis, the disc is degenerative but mobile due to the mobility of the anterior column. This classification helps to determine the optimal treatment. In stable stenosis, decompression of the foramen is nearly efficient; however, in patients with unstable stenosis, the instrumentation is almost always necessary.



Biography

Ali Fahir Ozer was graduated from Ataturk University School of Medicine in 1976. He did his Neurosurgery Residency between 1977 and 1982 at Hacettepe University School of Medicine. He obtained his Associate Professor position in 1988 and Full-Professorship in 1994. He served as the Head of Neurosurgery Department in Kocaeli University between 1994 and 1995. He has been working at American Hospital Neurosurgery Department since 1995 and is currently a faculty of Department of Neurosurgery at Koc University School of Medicine, He is Adjunct Professor in Bioengineering and Orthopaedic Surgery Colleges of Engineering and Medicine, University of Toledo in 2018. His research mainly focuses on the Biomechanics of Spine and dynamic stabilization of the spine. He had patented spinal products used in spinal surgery.

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Traditional Didactics in modern medical education: To discard or to save?

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Background: The historic Flexnor Report describes two foundational concepts for medical education; ‘Scientific-methods’ and ‘Learning-by-doing’. ‘Pro-Flexnor’ ideologists propagate the merits of ‘active learning’ while believing that ‘didactic lectures’, at best; have a secondary/supplementary role in modern medical education. This study compared medical undergraduate student’s ‘perceptions’ and ‘performance’ while employing classic Passive and Active learning techniques.

Methods: Two groups (n1=31; n2=36) of students of an undergraduate course in anatomy of the endocrine system were randomly enrolled. One group was instructed using Didactic lectures while the other was instructed using tutorials facilitated by an expert. To minimise confounding, the ‘preparatory-reading-material’; ‘post-session-content hand-outs’ and instructor for both groups remained the same; therefore, ensuring a ‘difference in teaching methods’ rather than a ‘difference in teachers’. Later, students were asked to give opinions, rate their sessions and subjected to a short multiple-choice test. Basic descriptive statistics –Mann Whitney and Kruskal Wallis tests were employed for data analysis.

Results: There was no significant difference in overall performance scores between the two groups (average score 79%; $p > 0.1$). But interestingly, students of the Didactic group rated their teaching session’s effectiveness as significantly higher ($p < 0.05$), felt they had “gained sufficient knowledge” and commented on a “smooth flow of information” with “higher learner comfort and satisfaction levels”. The active learning group commented that “complex information would have been processed better if it came directly from a teacher”. Others commented on the “need for core knowledge to be communicated dogmatically by an expert” rather than patchy imparting of content through ‘peer-led stumbling discussions’. The ‘Active-Learning Students’ perceived that they had “learned less” than the ‘Didactic-group’. Students from both groups significantly valued the concept of ‘teacher centred’ Traditional Didactic lectures in medical education ($p < 0.05$).

Conclusions: Despite all known merits and publicity of ‘active learning in 21st century medical education’; this study serves as a compelling reminder that our medical students are still not averse to the ‘age-old, classic lecture session’ in their classrooms, with an experienced teacher imparting core information in an essentially linear fashion. The core knowledge imparted by a Didactic lecture is “not less” than that gained through Active Learning methods. A well-organized didactic lecture still remains one of the most effective ways to integrate and present complex information from multiple sources and on exhaustive topics; especially those encountered in the teaching of extremely descriptive basic sciences like anatomy and physiology. It should be noted that proactive student engagement and immersion techniques are key elements that make active learning work. Drawing upon this principal, we can enhance lectures by incorporating active learning strategies within their framework, like flash-card-quizzes, audio-visuals and end-of-lecture chat-sessions. These supplements will act like “pot-hole fillers”; making lecture-based courses more engaging to students and hence, promote learning while still keeping the Traditional Didactics ‘alive’ in the modern medical classroom. Even as we ardently strive to implement the principals described in Flexnor’s report in modern medical education, let’s not discard the Traditional Didactic lecture as a ‘Lesser Teaching Tool’.

Biography

Tabinda Hasan graduated from AMU, JNMC Medical College of India. She has 10 years of experience in teaching Human Anatomy to medical students in India and KSA. At present, she is working as an Assistant Professor of Anatomy and Cell Biology in the Princess Nourah Bint Abdulrahman University at KSA since 2018.

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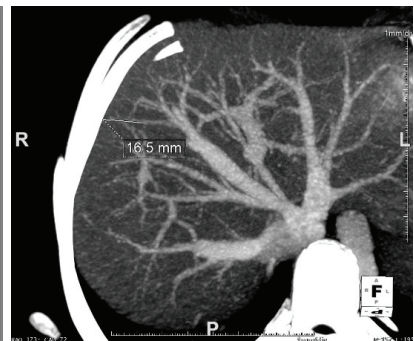
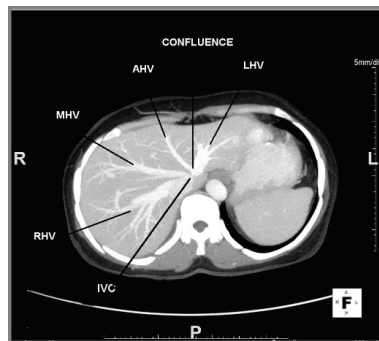
October 16-17, 2019 | Rome, Italy

CT study of surgical anatomy of Hepatic Veins – Application in Liver Transplantation Surgery

Alka Bhingardeo

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Statement of Problem: Living-Donor Liver Transplantation (LDLT) is a surgical option for patients who are deteriorating clinically while awaiting cadaveric donor liver. In the right lobe transplantation, the hepatectomy line passes approximately 1 cm to the right side of the middle hepatic vein as a standard procedure. In LDLT, anatomy of hepatic venous system is important, not only to carry out complex reconstructions, but also to avoid graft congestion after liver transplant in the graft recipient. Hence pre-operative evaluation of venous drainage and awareness of probable complications is a pre-requisite for transplantation surgeries.



Methodology: We conducted a retrospective multi-slice spiral CT study of hepatic veins, whereby, we studied 100 abdominal CT scans which were reported as normal. We studied the length, the number of branches of hepatic veins and measured the distance of their peripheral-most branch from the nearest hepatic surface. We have also seen for the presence of accessory hepatic veins.

Findings: We observed that right hepatic vein was longest (mean length-131.26mm) hepatic vein followed by middle (mean length-122.62mm) and last of all, the left (mean length- 93.15mm) hepatic vein. Most of the right (46%) and middle (45%) hepatic veins were visualized up to third order while most of the left (42%) hepatic veins were having less branches and were visualized up to second order. Most of the right (45) and left (49) hepatic veins were 10-15mm from the hepatic surface while most of the middle hepatic vein was in the range of 15-20mm. We found Accessory hepatic veins in 18% of cases.

Conclusion and significance: Hence in liver transplantation, pre-operative evaluation of venous architecture of liver of donor and recipient is necessary for reconstruction anastomoses and to avoid major hemorrhage during surgery.

Biography

Alka Bhingardeo, currently working as Assistant Professor, at AllMS Telangana, has passion for research. Her study of CT study of venous drainage of liver has described variations in draining pattern of hepatic veins which can alter surgical approach in living live donor liver transplantation and prevent graft rejection and hemorrhage. The information of probable variations in hepatic veins necessitates transplantation surgeon to have preoperative evaluation of hepatic veins of donor and recipients for successful liver transplantation.

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The anatomical basis for Autonomic Dysfunction in pelvic surgery

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Operative neural damage in pelvic and perineal surgery may affect bladder or sexual function, with retention of urine or impotence. A better understanding of the Anatomy and Physiology of urinary and sexual function together with refinement of surgery for both benign and malignant pelvic and perineal disease has led to a decrease in the incidence of urogenital dysfunction. The anatomical basis of Autonomic Dysfunction during pelvic and perineal surgery is reviewed.

Biography

Elroy Weledji is a Senior Lecturer in Anatomy and Clinical Surgery in the University of Buea at Cameroon. He is currently the Consultant Gastrointestinal surgeon with acute emergency on-call and chief of service Surgery in regional hospital at Buea. His research interests are clinical teaching and clinical research. He is the Fellow of Royal college of Surgeons in England since 2016. During graduation he has involved in many activities and societies. He is the Member of the Association of Upper Gastrointestinal Surgeons in Great Britain, Ireland Member of the European Society of Coloproctology, Member of the International Society of University, Colorectal Surgeons Member of the British Association of Surgical Oncology and Member of the International Association of Surgeons, Gastroenterologists and Oncologists. He is also the Editor-in Chief of African Journal of Integrated Health.

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Special Session



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The prevalence and regeneration of painful degenerate Lumbar Intervertebral Discs

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Statement of the Problem: Chronic Low Back Pain is expensive because it is challenging to diagnose and treat and due to its loss of associated productivity. For decades, experts speculated that the source of chronic Low Back Pain (LBP) could not be identified. The derivation of this concept was a 1966 publication by two general physicians before the advent of advanced imaging and validated diagnostic spine procedures. Since 1995, five international research papers have been published in peer-reviewed fashion attesting to the prevalence of painful lumbar discs. Indeed, lumbar discs have been observed to be the source of LBP in adults and appear to be more common in younger than older adults. The morphologic substrate of painful intervertebral lumbar discs is annular fissures that are flanked by innervated granulation tissue in association with a catabolic state. Therefore, strategic treatments would address these non-healing fissures in an attempt to regenerate the disc and restore an anabolic state within the affected disc.

Methodology: A literature review was conducted to identify and review all studies investigating the prevalence of painful intervertebral discs. Studies were included if valid diagnostic spine procedures were employed adhering to stringent operational criteria. Publications without utilizing sound diagnostic spine procedures were excluded from the final analysis. Similarly, a literature review was conducted of all studies of intradiscal regenerative treatments. Also, current FDA regulated intradiscal clinical trials in the USA were included in this summary.

Findings: Overall, the prevalence of discogenic LBP from worldwide studies is 26-56% with a combined 95% confidence interval of 17-62%. The mean age of these patients ranged from 41-46 years. The probability of discogenic LBP increases with younger age. Prospective outcome data suggest that autologous Bone Marrow Aspirate Concentrate (BMAC) and Platelet Rich Plasma (PRP) may reduce LBP and disability. Allogenic Mesenchymal Stem Cells appear more effective than controls in reducing LBP and disability.

Conclusion: The intervertebral disc is a common source of LBP due to non-healing annular fissures and its probability increases in younger adults. Regenerative medicine treatments are actively being pursued. Autologous BMAC and PRP need more rigorous follow-up study and a randomized, controlled trial of BMAC is underway in the USA. Allogenic Stem Cells and Disc Chondrocytes are being investigated. Phase II RCT data indicates Allogenic Mesenchymal Stem Cells are effective at reducing discogenic LBP.

Biography

Michael J DePalma is President and Medical Director of Virginia iSpine Physicians, where he practices Interventional Spine Care. He earned his Bachelors of Science Degree in Neuroscience with magna cum laude and certificate in Foundations of Medicine from the Honors College of the University of Pittsburgh in 1995. After earning his medical degree cum laude from the Medical University of South Carolina in 1999, he completed his residency in the highly regarded Department of Physical Medicine and Rehabilitation at the Ohio State University Medical Center. He has been named by his peer physicians as a "Top Doc" in Richmond Magazine in April 2008, 2011 and 2012. He is also an active spine researcher and pioneer involved as an investigator in clinical trials evaluating new agents that help repair or restore painfully degenerated Intervertebral Discs in the low back. He was the lead investigator at VCU in the largest prospective study of an innovative non-surgical technique to stabilize painful pelvic fractures in osteoporotic patients. His research was recently recognized by the International Spine Intervention Society as the "Best Clinical Paper" at their 17th Annual Scientific Meeting in Toronto, CA.

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