

B374

# FLUOROSCOPIC VS ULTRASOUND GUIDED TRANSFORAMINAL STEROID INJECTIONS: WHERE DO WE STAND SO FAR?

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**Background and Aims** With the addition of corticosteroids to the epidural injection in 1952, this procedure evolved as a cornerstone for the management of chronic back pain.

The introduction of fluoroscopy revolutionized the various techniques of epidural steroid injection (ESI) allowing easier access and different approaches to the spinal canal.

Fluoroscopy as the gold standard imaging tool of neuraxial procedures heavily relies on bony landmarks and contrast substance for needle placement, with the main disadvantage of radiation exposure.

Ultrasound as a well established imaging tool in regional anesthesia became very appealing also in the area of neuraxial procedures, bringing non-irradiating alternatives to the ESI.

The aim of this presentation is to illustrate the cervical and lumbar transforaminal ESI comparing the ultrasound to the gold standard of techniques.

**Methods** This review describes the techniques of Transforaminal Epidural Steroid Injections from the two imaging points of view, discussing advantages or disadvantages encountered in the recent medical literature.

**Results** The cadaver and human studies available in the last 15 years on lumbar US guided TESI from an axial and parasagittal placement of the curvilinear probe showed good results and improvement of the techniques, though still needing tip needle confirmation with fluoroscopy.

In the meanwhile the cervical ultrasound selective nerve and transforaminal injections are more established techniques with good results over the time.

**Conclusions** Ultrasound is such an appealing imaging tool and offers many advantages over the more established fluoroscopy.

There are categories of patients who would tremendously benefit off of it, though further researches and improvement techniques needs to be done.

B375

# WHEN IT'S NOT JUST CHRONIC – CASE REPORT

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**Background and Aims** Osteoarthritis of the knee is a degenerative joint disease with progressive degradation of articular cartilage and subchondral bone due to continuous wear, additional stress and overload. Symptoms depending on the stage of the disease may include joint pain, tenderness, stiffness, locking, and sometimes an effusion. Pain can be managed with minimal invasive treatments, such as genicular nerve block and cryoablation therapy.

**Methods** 82-year-old patient with a history of arterial hypertension, idiopathic bilateral pulmonary thromboembolism, osteoarticular disease and patella fracture, medicated with apixaban 5 mg 12/12h. Patient with previous positive diagnostic block of the right geniculate nerves and total pain relief, is admitted for cryoablation, after telephone information of recurrence of symptoms. Anticoagulant suspension was indicated 72 hours before the procedure.

**Results** The objective examination revealed controlled gonalgia, but pain on palpation of the posterior region of the homolateral leg, slight edema and skin color change. An ultrasound scan was performed, identifying significant partial occlusion of the popliteal vein, for this reason the patient was sent to the emergency department.

**Conclusions** Patients with chronic pain tend to have their pain undervalued by family members and some health professionals, and acute events may be overlooked. The careful assessment of the patient and the appreciation of new painful events guarantees a careful and safe follow-up, as well as possible life-threatening diagnoses.

B376

# MASSAGE-ELECTROACUPUNCTURE VERSUS EPIDURAL ANALGESIA FOR PATIENTS WITH CHRONIC LOW BACK PAIN: A RANDOMIZED CONTROLLED TRIAL

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**Background and Aims** To compare Massage-Electroacupuncture (MA) versus Epidural Analgesia (EP) in patients with chronic low back pain (CLBP).

**Methods** Patients with CLBP were randomly allocated to MA or EP. MA involved 8 sessions per week, while EP involved 3 epidural injections administered at 15-day intervals. Pain was evaluated using the 10-unit visual analogue scale, psychological parameters were assessed with the Profile of Mood States scale (POMS), and quality-of-life was appraised with the 36-item Short Form survey (SF-36). Evaluations were performed before randomization and immediately after the completion of each treatment, while two additional assessments by telephone were scheduled at 24- and 48-weeks post-intervention.

**Results** 110 patients [female 63 (58.7%), age 49.97±9.90 years] were allocated into the MA (n=55) and EP group (n=55). Significant improvements in pain levels were observed over the 48-week follow-up (p<0.001 in both groups). Total POMS improved immediately after the interventions (p<0.001 in both groups), but returned to baseline at the 24- and 48-week follow-up). Similar improvement was observed in the SF-36 (p<0.001 in both groups) but recessed after the 48-week follow-up. MA was superior to EP for pain management immediately after the intervention (1.89 vs. 3.00 VAS units; p<0.001) and at 48 weeks (2.05 vs. 3.70 VAS units; p<0.001) post-intervention.

**Conclusions** Both methods are equally effective in reducing chronic low back pain and improving psychological or quality-of-life parameters in patients with chronic low back pain.

B377

# REFLEXOLOGY AS ADD-ON TREATMENT FOR THE MANAGEMENT OF CHRONIC PAIN AFTER SPINAL SURGERY (CPSS)

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## Abstracts

**Background and Aims** Persistent pain and other symptoms following spinal surgery affect approximately 20% - 40% of patients. 80% of them are unable to work and their quality of life is reported to worsen, even after the surgery.

The purpose of this retrospective study is to report the results of using Reflexology as Add-on treatment in patients with Chronic Pain after Spinal Surgery (CPSS).

**Methods** Patient records with CPSS, from the Registry of the Hellenic Society of Pain Management and Palliative Care, who visited the Pain and Palliative Care Center at the Aretaieion Hospital between 2016 and 2020, were reviewed. From a total of 53 patients with CPSS, 38 had been treated with reflexology as add-on treatment to their usual pharmacological care.

Numerical Pain Scale (NPS) 0 to 10 was used for pre and post treatment pain measurement.

The ICD Diagnostic Criteria of Chronic Pain after Spinal Surgery were used - Table 1.

The patients had received on average 14, weekly, 20 min. reflexology sessions.

**Abstract B377 Table 1**

Table 1

Diagnostic Criteria of Chronic Pain after Spinal Surgery in ICD-11, 2018

Condition A to E are fulfilled
A. Chronic pain (persistent or recurrent for > 3 months)
B. The pain began or recurred after the spinal surgery
C. $\geq 1$
1. The pain presents with higher intensity than the preoperative pain
2. The pain has different characteristics than the preoperative pain
D. The pain is located in the area of the surgery (back) or referred into the limb (s)
E. Not better accounted for by an infection, a malignancy, a pre-existing pain condition or any other alternative cause

ICD: International classification of disease.

**Results** The results showed statistically significant changes in the mean pre and post treatment pain scores in patients with reflexology. In 85% of those patients the mean pain reduction was more than 70% and lasted for more than 6 months after the intervention.

**Conclusions** The integration of reflexology into the pharmacological usual care, can improve patients' quality of life, by reduction of pain and improvement of their functionality.

B378

# ULTRASOUND GUIDED DRY NEEDLING AS A SPECIFIC TREATMENT TO RELIEVE THE CHRONIC PAIN AND DISABILITY FROM THE MYOFASCIAL COMPONENT OF POSTLAMINECTOMY PAIN SYNDROME WITH SPONDYLODISCITIS

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**Background and Aims** Post laminectomy infective spondylodiscitis has poor prognosis. Management includes antibiotics, bed-rest and repeat surgery with attendant morbidity. We highlight the importance of muscle contribution to the pain, stiffness and restricted mobility in post laminectomy syndrome.

**Methods** Case report: 45 y/lady/90 kg presented 9 months after micro discectomy of L4-5 with severe backpain (NRS-8-9/10) stiffness, restricting spine movements, and severe shocks in right lower extremity. MRI showed infective spondylodiscitis at L4-5, scarring around traversing right L5 and S1 nerves. Antibiotics had been ineffective.

**Management** Patient received weekly Ultrasound guided dry needling (USGDN) for the muscles of the back, thigh, calf, foot and sole, performed alternately in supine and prone position for 3 months. Musculoskeletal Ultrasonography of the back at, above and below the scar was performed at the beginning of the treatment, 6weeks and 12 weeks.



Column 1 Before treatment a: flexion at back was not possible and meant only flexion at the neck, b: lateral flexion 10-15°, Column 2 After treatment: d: complete flexion, e: lateral flexion 35-40°, f: can sit crossed leg, Column 3 Pictures of USGDN and muscles that needles go through are labelled g: needles in the back (IC-iliocostalis, QL-quadratus lumborum), h: back of calf, i: back of thigh

**Abstract B378 Figure 1**

	At presentation	At 2 weeks	At 6 weeks	At 8 weeks	At 12 weeks
Pain at rest	8	6	5	2	2
Limit of standing	5-10 min	30 min	60 min	80 min	150 min
Sitting	15 min	45 min	No limit	No limit	No limit
walking	5 min	15 min	40 min	40 min	75 min
Ability to sit down on the floor	Cannot sit in squatting position	Cannot sit in squatting position	Can squat, cannot sit down cross legged	Can sit down and flex the left leg completely with right leg outstretched	Can sit cross legged
Frequency of shocks	10-15 at night	6-8	4-5	Occasionally once in 3-4 days	Absent
Power of left foot dorsiflexion	2/5	2/5	3/5	4/5	4/5
ESR*	95	80	70	70	25
CRP <sup>†</sup>	40	35	28.5	22	22.5
ODI <sup>‡</sup>	42	33	25	18	11
SF-36 <sup>§</sup>					
Physical functioning	15	20	25	45	55
Physical health	0	0	0	25	50
Emotional problems	0	100	100	100	100
Energy/fatigue	10	30	30	55	60
Emotional well-being	8	28	36	64	84
Social functioning	12.5	37.5	37.5	62.5	75
Pain	10	32.5	45	67.5	67.5
General health	15	35	40	60	75
Health Change	0	75	75	100	100
PFWD <sup>¶</sup>	0	10	30	45	70

\*-erythrocyte sedimentation rate, †-c reactive protein, ‡- Oswestry disability score, §- short form 36,

¶- pain free walk distance

**Abstract B378 Figure 2**