235
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Pain 2
Time course of therapeutic response to mirror therapy for phantom limb pain

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Background: Mirror therapy is an effective treatment for most amputees experiencing phantom limb pain (PLP), yet optimal treatment parameters, including the duration of treatment, have not been established.
Objective: We sought to delineate the time course of mirror therapy treatment effects patients with major limb loss.
Methods: We conducted a post hoc analysis of two independent cohorts of persons with lower extremity amputation (N = 29) enrolled in IRB approved research at Walter Reed National Military Medical Center, Bethesda, MD who received mirror therapy daily for 4 weeks. PLP was assessed on each treatment day using the McGill Pain Questionnaire — Short Form (SF-MPQ), measuring 15 pain descriptors on a 0–3 point scale, and overall intensity of pain in the past 24 h using a 100 mm Visual Analog Scale (VAS). Paired t-tests comparing pain at weekly time points to baseline pain were used to detect substantial reductions in pain.
Results: Paired-sample t-tests showed significant declines in VAS and SF-MPQ scores after the first week ($p < .003$ and $p < .001$, respectively), which persisted after two weeks ($p < .007$ and $p < .001$) and four weeks ($p < .003$ and $p < .001$). Amputees with VAS pain levels ≤60/100 (N = 19) showed a significant decline in pain after only one week, while those with pain levels >61/100 (N = 10) required at least two weeks of treatment.
Conclusions: These results indicate that the benefits of mirror therapy can be seen after 7–14 days. Since some patients do not benefit from mirror therapy, a trial lasting 1–2 weeks, stratified based on baseline pain, should be sufficient to determine if there will be a therapeutic response at 4 weeks.

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236
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Pain 2
Use of ultra-sound guided transversus abdominis plane block for effective postoperative analgesia among patients undergoing gynecologic surgery

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Introduction: Ultrasound guided total abdominal block (US-TAP) is a new and effective technique for decreasing post operative pain after abdominal surgeries. The objective of this study was to evaluate the use of ultra-sound guided transversus abdominis plane block for effective postoperative analgesia in patients undergoing gynecologic surgery via a transverse lower abdominal skin incision.
Methods: This randomized control trial study was conducted at Holy Family Hospital, Rawalpindi for a period of 6 months from July 2014 to Dec 2014. 200 female patients undergoing gynecological surgery via transverse lower abdominal skin incision were enrolled in the study. Patients were divided into two groups by using consecutive non-probability sampling; both received ultra-sound guided transversus abdominis plane block with either bupivacaine (Group A) or saline(Group B).Comparison of early mean post operative pain relief was assessed with ultra-sound guided transversus abdominis plane block with or without bupivacaine. SPSS version 17.0 was used to analyze the data.
Results: The mean age of patients was 41 years (range 17–71).There were 100 patients in each group. The two groups were comparable with respect to baseline features. The US-TAP block significantly reduced pain intensity as compared to standard care in the PACU at 4 h (5.2 ± 3.1 vs. 8.4 ± 1.3, $p = 0.003$). There was insignificant difference between the visual assessment score of pain at 8 h between the two study groups (3.6 ± 2.3 vs. 2.3 ± 2.4, $p = 0.4$).
Conclusion: Ultra-sound guided transversus abdominis plane block (TAP) is an effective modality for reducing post operative pain after gynecologic surgery via a transverse lower abdominal skin incision.

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237
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Pain 2
Vestibular findings in chronic pain

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Background: Earlier evidence show that the insular cortex might play an important role in the building of the abstract idea of our body state suggesting that insular dysfunctions would lead to abnormal corporal perception in chronic pain. Neuroanatomical and functional studies show that the insular cortex modulate vestibular activity in the brain stem, however the vestibular activity has been poor studied in chronic pain.
Objective: The aim of this research is to study the vestibular activity in chronic pain.
Patients and method: 10 chronic pain patients, and 10 healthy subjects, were tested in aTonnies, Erben KG model rotary chair. The nystagmus was recorded by electronystagmography. For the appreciation of the symmetry between right or left vestibular activity we measured the nystagmus's slow phase velocity (SPV) induced by right and leftward rotation of the chair correspondingly.
Results: The chronic pain subjects group showed an asymmetric vestibular pattern of activity, significantly different ($p < 0.05$) to the healthy group who presented symmetric vestibular activity.
Conclusions: We found that the vestibular patterns of response to rotary testing in chronic pain were different than healthy ones. The physio-pathological significance of this finding should be the subject of further research.

*I have obtained patient and/or Institutional Review Board (IRB) approval, as necessary.

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238
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Pain 2
Efficacy of flupirtine modified release in chronic tension-type headache with/without pericranial tenderness

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Background: Current HIS-classification differentiates between chronic tension-type headaches with (cTTH+) and without (cTTH−) pericranial tenderness, however pharmacological treatment strategies don't.
Objective: To evaluate efficacy and tolerability of flupirtine modified release (FMR) — a muscle tone normalizing analgesic.
Patients and Methods: Patients with cTTH+/cTTH− received a 7 day open-label treatment with FMR (400 mg OD in the evening) during this non-interventional study. Pain intensity (NRS11), number of hours with pain, and pain-related restrictions in daily life activities were documented at baseline (prior FMR), and daily after treatment onset using standardized pain diaries. Adverse events (AE) were reported during the course of the study.
Results: Overall, 89 patients with cTTH (79 with/10 without PT) participated. 75.3% were female; mean age was 53.8 ± 14.1 years and 51.7% suffered for more than 6 months. With FMR, average number of daily TTH hours dropped for cTTH+/cTTH− from 11.3 ± 6.3/7.6 ± 3.4 h at baseline to 4.8 ± 3.9 ($p < 0.001$)/6.4 ± 2.8 ($p = ns$) at end-of-study. In parallel, average pain intensity dropped from 6.5 ± 1.9/5.3 ± 1.2 (95%-CI: 4.9–5.5) to 2.7 ± 1.7 ($p < 0.001$)/4.4 ± 1.3 ($p = ns$) NRS_{11}, and average daily life restrictions improved from 5.8 ± 1.9/4.3 ± 1.7 to 2,3 ± 1,6 ($p < 0.001$)/3.4 ± 1.0 ($p = ns$) NRS_{11}. No treatment emergent adverse events were reported.
Conclusions: Differential therapeutic benefits seen with FMR in patients suffering from cTTH+/− relate to its unique pharmacological (muscle tone normalizing) properties. The results of this naturalistic study focusing on patient-reported outcomes support taxonomic strategies to differentiate between cTTH with/without PT, and raises questions about current uniform recommendations for cTTH treatment.

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239
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Pain 2
Paragangliomas-case

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One uncommon case of paragangliomas arising from the vagus nerve is described. The patient underwent surgery for suspected carotid body tumour, and computed tomography scan and digital angiography allowed a correct pre-operative diagnosis to be made. This case confirms the prevalence of vagal paragangliomas in female sex and middle age, and the possibility of multiple similar tumours in the same patient. Histological benign features, absence of neurological symptoms, lack of local invasion or intracranial extension confirm the frequent benign behaviour of these neoplasms. Lack of catecholamine secretion confirms the low incidence of functioning tumours. Contrast computed tomography and digital angiography still remain the gold standard reliable instruments for diagnosis despite the success of magnetic resonance imaging, magnetic resonance angiography and octreotide scintigraphy to detect head and neck paragangliomas. A transcervical approach, without mandibulotomy, is suitable for large tumours but complete removal, with sparing of involved segments of the vagus nerve, is rarely possible. Post-operative neurological morbidity is still an unsolved issue and, therefore, rehabilitation of deglutition and phonation is an integral part of management.

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