

PAIN REHABILITATION

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A Correlative Study of the Self-reported Pain Disability Questionnaire, From the AMA Guides, 6th Edition, and the Clinician-derived Physical Performance Tests on Individuals With COPD and With Chronic Pain: Case Series.

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Disclosures: A. S. Miciano, Nevada Rehabilitation Institute, EmploymentBS.

Objective: To quantify the pain-related impairment (PRI) of elderly individuals with COPD and chronic pain using the self-reported Pain Disability Questionnaire (PDQ), obtained from the AMA Guides to the Evaluation of Permanent Impairment Sixth Edition, and to investigate the correlation between the PRI status and scores from clinician-derived Physical Performance Tests (PPT).

Design: Retrospective cross-sectional study.

Setting: Medicare-accredited comprehensive outpatient rehabilitation facility.

Participants: 29 elderly community-dwelling subjects with mild to severe COPD reporting chronic pain.

Interventions: Not applicable.

Main Outcome Measures: The Self-Administered Comorbidity Questionnaire (SCQ), identified individuals with chronic pain. The 15-item PDQ was scored on a 10-point scale, for a maximum total score of 150 (high pain and disability) and a minimum score of 0: mild (0-70); moderate (71-100); severe (101-130); and extreme (131-150). The 6-Minute Walk Test (6MWT), Berg Balance Scale, and Dynamic Gait Index (DGI) were used as PPT. Pearson correlation coefficients (r) were used to examine associations between total PDQ and PPT results. An alpha of .10 was used for statistical tests.

Results: Total PDQ, when divided into subcategories of PRI severity, resulted in 67% mild; 27% moderate; 3% severe; and 3% extreme PRI. A statistically significant negative correlation was found between the total PDQ score and Berg Balance Scale ($r = -.373$, $P = .047$), 6MWT ($r = -.318$, $P = .093$), and DGI ($r = -.328$, $P = .082$).

Conclusions: The majority of COPD outpatients scored in the mild PRI category, and this PRI had a statistically significant negative effect on PPT scores. These findings suggest that the self-reported PDQ is a reliable indicator of physical performance status, and would be valuable as an alternative to PPT in a busy clinical practice. The PDQ is a valid, subjective report and further research into its application among other patient populations, such as poly-trauma cases, would be beneficial.

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A New Treatment for the Ankle Sprain Outcomes.

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Disclosures: A. Stecco, None.

Objective: The authors want to evaluate if specific alterations of ankle retinacula can be evidenced in patients with functional ankle instability (>3 months) and if treatment focused on the fascia could restore normal function to the retinacula.

Design: An in vivo radiologic study by MRI was performed on 20 patients to evaluate possible damage to the ankle retinacula.

Setting: In those subjects (11 cases) with an evident alteration of at least one of the retinacula, static posturography was quantitatively measured and painful symptoms were recorded using a specific questionnaire.

Interventions: These subjects were treated by the same practitioner, according to the methodology of Fascial Manipulation for 3 treatment sessions.

Main Outcome Measures: Evaluation with static posturography and the questionnaire was repeated after treatment and at the 1, 3, 6 months.

Results: By MRI, the retinacula were clearly visible and easily evaluated. They appeared as low signal intensity bands with a mean thickness of 1 mm. In all patients, 4 types of retinacular alterations were identified. After treatment, a mean pain reduction of 32.2% was recorded (mean value of VAS prior: 41/100; after 3: 8.8/100), together with a good recovery of movement. The initial benefit was generally maintained (mean value of VAS: 13/100) at a short-term follow-up. Static posturography showed a significant difference ($P < .05$) in sway path between the first and the last evaluation: initial mean sway path (msp) was 7.9 mm/sec and final msp was 6.9 mm/sec, coinciding with patients' reports of an improved sense of balance.

Conclusions: Retinacula could be seen as a specialization of the fascia for local, spatial proprioception of foot and ankle movements. Their damage, during ankle sprains, could modify the lines of forces within the fascia of the foot and leg, altering the role of the fascial system in peripheral control of articular motility. Restoring normal tension to the fascia could improve proprioceptive activity of receptors.

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A Quantitative Study of Morphologic Changes in the Lumbar Spine After Medial Branch Radiofrequency Neurotomy.

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Disclosures: D. S. Fitch, None. Disclosure: M. Smuck: Arthrocare.

Objective: To determine if morphologic changes occur in the lumbar multifidus muscles, facet joints, and intervertebral disks after medial branch radiofrequency neurotomy (RFN).

Design: Retrospective review of medical records and magnetic resonance imaging (MRI).

Setting: University spine center.

Participants: 27 subjects treated with lumbar RFN who had both pre- and posttreatment MRIs completed at a single institution.

Interventions: All pre- and posttreatment MRIs were evaluated to determine the cross-sectional area (CSA) of the lumbar multifidus muscles 1 segmental level above the most cephalad RFN lesion ("non-treatment" levels) as well as 1 segmental level below each RFN lesion ("treatment" levels). Bilateral facet joint degeneration (Weishaupt classification) and disk degeneration (Pfarrmann classification) were graded from L1-2 through L5-S1.

Main Outcome Measures: The mean pre- to posttreatment changes in multifidus CSA as well as rates of deterioration of facet and disk degeneration were compared between treatment and nontreatment levels.

Results: Average subject age was 55.6 years, and 16/27 were women. Timing of the MRIs before and after the RFN treatment was a mean 12.7 and 7.5 months, respectively. The mean pre- to post- treatment change in multifidus CSA demonstrated a trend toward greater atrophy in treatment levels than non-treatment levels (-0.579 cm^2 versus -0.286 cm^2 ; $P=.0773$). There was no statistical difference in the rates of deterioration in the facet joints observed at treatment and nontreatment levels (6.76% versus 9.74%, respectively; $P=.6322$). Finally, treatment levels demonstrated a significantly greater amount of disk deterioration from the pre- to post-MRIs relative to non-treatment levels (14.89% versus 4.55%; $P=.0489$).

Conclusions: The impact of RFN on multifidus function, morphology, and segmental anatomy is unknown. This preliminary retrospective study indicates that measurable morphologic changes do occur after RFN. These findings require validation in a prospective controlled study.

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Actigraphy-based Assessment of the Functional Impact of Chronic Pain.

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Objective: To establish the viability and validity of in vivo actigraphy for assessing daily activity patterns in chronic pain

patients relative to traditional self-report measures of pain interference.

Design: Twenty-two chronic pain outpatients (ages 24-70 years, mean 46.8) were recruited from a pain management center. After instruction, participants wore small, lightweight actigraphs on their dominant ankles for 7 days. They recorded any removals and kept a paper log of times in bed and at work. Participants then completed a set of self-report measures (order randomized): the Roland-Morris Disability Questionnaire (RMDQ), the Pain Disability Index (PDI), the Pain Disability Questionnaire (PDQ), and the SF-36 Health Survey (SF-36), and a usability survey. Data mining techniques were applied to extract meaningful actigraph functions (eg, amount of time spent in sedentary activity). The derived functions were statistically compared with the questionnaire scores.

Results: Pearson correlations between actigraphy functions and questionnaire scores were consistent with hypotheses: all functions except time in sedentary activity were negatively correlated with RMDQ, PDI and PDQ scores, and positively correlated with SF-36 scores. Higher non-sedentary activity was associated with a lower functional impact ratings. The percentage of time spent sedentary was positively related to a higher functional impact ratings. The most consistent pattern of correlations was with the pain-specific questionnaires (RMDQ, PDI, PDQ). Correlations were moderate between the actigraphy and self-report measures. Despite the small sample size, multiple regressions for the questionnaire scores on actigraphy variables were all significant ($P<.05$) except for the SF-36 Mental Component Score. Participants strongly endorsed their willingness to wear the device for clinical assessment.

Conclusions: Actigraphy assessment of the functional impact of chronic pain is viable, with good construct validity. With ergonomic enhancements, this type of device is likely to be highly accepted by chronic pain patients. Functional assessment can be obtained from continuous actigraphy via a device worn on the ankle, without the need for further patient interaction.

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Cooled Radiofrequency Neurotomy for Sacroiliac Joint Pain: A Retrospective Case Review.

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Disclosures: J. L. Sellon, None.

Objective: Sacral lateral nerve branches innervating the sacroiliac (SI) joint are variable in number and location, making conventional radiofrequency (RF) neurotomy challenging. Cooled RF, with its greater lesion radius, may facilitate a more complete denervation of the SI joint. The goal of