

**Keywords:** Osteoporosis; Hip fracture; PMR; Inpatient; Outpatient; Quality of life  
Osteoporotic hip fractures are one of the major causes of impaired quality of life, increased morbidity and mortality risk. The goal of PMR programmes of care is to help the patient to return to the highest level of function and independence as possible, while improving the overall quality of life, decreasing pain, preventing additional fractures, and minimizing further bone loss.

Our aim was to assess the affectivity of inpatient PRM programmes of care in our department among osteoporotic patients with hip fracture, and to follow them after 1 year of outpatient PRM.

Sixty-two osteoporotic participants, with previous hip fracture who were admitted to our hospital for PMR programmes (7 men, 55 women, age  $75.9 \pm 9.2$  years) because of osteoporotic fracture or underlying disease causing osteoporosis have been reviewed. PMR programmes were designed to meet the needs of the individual patient, including diet supervision, calcium and vitamin D supplementation, drugs against osteoporosis, physiotherapy, ergotherapy, falling prevention, etc. The programme effectiveness was tested by functional assessments before and after the inpatient procedure: QUALEFFO (Quality of Life Questionnaire of the European Foundation for Osteoporosis), FIM (functional independence measure), Beck depression inventory test, TUG (timed up and go test, sec), and VAS (visual analogue scale).

At the admission vs at the end of inpatient procedure: QUALEFFO  $54.7 \pm 11.5$  vs  $49.1 \pm 12.9$ ; Beck  $35.0 \pm 2.5$  vs  $30.0 \pm 10.4$ ; TUG  $29.2 \pm 14.2$  vs  $24.3 \pm 15.2$ ; VAS  $36.0 \pm 11.5$  vs  $61.1 \pm 13.9$ ,  $P < 0.001$  (paired sample *t*-test) for each parameters, FIM  $51.7 \pm 7.6$  vs  $100.0 \pm 12.6$ ,  $P = 0.168$ . No further improvement was detected during the one year of outpatient rehabilitation according to the QUALEFFO values:  $49.1 \pm 12.9$  vs  $49.2 \pm 13.6$  (at the inpatient discharge vs one year after outpatient rehabilitation).

Adequate inpatient PRM programme improved physical and psychosocial functions, as well as quality of life among our osteoporotic patients after hip fracture, however no additional functional improvement were detected after one year of outpatient programmes.

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### The segmental exclusion of the hand: An example of the learned-non use phenomenon



G. Belassian<sup>a,\*</sup>, A. Potet<sup>b</sup>, L. Tambosco<sup>a</sup>, F.-C. Boyer<sup>a</sup>

<sup>a</sup>Service de MPR, Hôpital Sébastopol, CHU de Reims, 48, rue de Sébastopol, 51100 Reims, France

<sup>b</sup>Service de MPR, groupe hospitalier Pitié-Salpêtrière, 47, boulevard de l'Hôpital, 75013 Paris, France

\*Corresponding author.

E-mail address: [gbelassian@chu-reims.fr](mailto:gbelassian@chu-reims.fr)

**Keywords:** Exclusion; Learned-non used

**Objective.**– To study the behavior of digital segmental exclusion on the hand traumatized population and the consequences.

**Material.**– Interview (discomfort, pain, functional consequence), trophic review, joint, functional assessment of hand (sheet 400 points), body image (digital gnosis, praxis), electrophysiological investigations (PEM, PES, PEC).  
**Patients and methods.**– Thirty-three patients (mean age 43 years) were recruited during one year at the department of the hand surgery. The inclusion criterion was the presence of exclusion digital identified clinically. The original triggers were traumatic (for 2/3 of cases), infectious, RSDS, and simple immobilization.

**Results.**– The average installation of the exclusion period was 3 months. At the questioning, the exclusion was not seen initially. Topography dominated the index (50% of cases). The trophic review reported vasomotor disorders.

Range of motion was normal in passive and active reduced. Achieving the sensitivity varied according to the lesions (paresthesia, dysesthesia, allodynia). Examination of the body schema reported the anosognosia exclusion in the initial phase and finger agnosia, the functional assessment (400 points) highlighted the exclusion tests manipulating objects. Measurement of cognitive evoked potentials (P 300) found a longer latency (331 vs. 405 healthy hand and pathological).

Changes at 1 year noted a decline in the exclusion of 12 patients (36.3%) and no recovery in 21 patients (63.7%).

**Discussion.**– Our study showed that the behavior of digital exclusion is a fast installation phenomenon and may not be initially perceived by the patient. It is associated with a limitation of active ranges of sensory disorders with cognitive functional impact.

The application of the model of “learned-non use” for interpreting the occurrence of the phenomenon of digital exclusion: the involvement of cortical reorganization and the compensatory motor pattern have like a clinical impact on the digital gnosis alteration of gnosis and the failure of the reuse attempts (incoordination, lack of strength, dexterity).

Inactivity by lesion of the peripheral nervous system generates behavior modification unsuitable, similar to those observed in a central nervous system.

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### Correlation of hand and foot force control and cervical spinal cord structure in cervicobrachial neuralgia



P. Lindberg<sup>a,\*</sup>, K. Sanchez Barrueto<sup>b</sup>, S. Poiraudou<sup>b</sup>, A. Feydy<sup>c</sup>, M.-M. Maier<sup>a</sup>

<sup>a</sup>Unité mixte de recherche (UMR) 8194, Centre national de la recherche scientifique (CNRS), service de radiologie B, hôpital Cochin, 27, rue de Faubourg Saint Jacques, pavillon Hardy B, 1er sous-sol, 75014 Paris, France

<sup>b</sup>Service de rééducation, CHU Cochin, faculté de médecine, université Paris Descartes, Sorbonne Paris Cité, France

<sup>c</sup>Service de radiologie B, CHU Cochin, faculté de médecine, université Paris Descartes, Sorbonne Paris Cité, France

\*Corresponding author.

E-mail address: [pavel.lindberg@cch.aphp.fr](mailto:pavel.lindberg@cch.aphp.fr)

**Keywords:** Cervicobrachial neuralgia; Diffusion tensor imaging; Fractional anisotropy

**Objective.**– We investigated early occurring force control deficits in cervicobrachial neuralgia (CBN) and related these changes to cervical spinal cord structure.

**Patients and methods.**– Twenty CBN patients and a group of control subjects of similar age were included. A visuomotor tracking task was used to measure force control at low absolute force levels (3, 6 and 9 N) in the precision of the hand and foot. Diffusion tensor imaging (DTI) and conventional T2-weighted MRI were performed to assess structural integrity of the cervical spinal cord. DTI parameters were extracted from the cervical spinal cord (C1–C5).

**Results.**– All patients presented cervical pain but few had other neurological symptoms. Groups were similar in clinical assessments of maximal grip strength and dexterity. Force tracking showed 35% greater error in both hand and foot tasks in patients compared to controls ( $P = 0.008$ ). All subjects performed the hand task with less error compared to the foot task ( $P < 0.001$ ). Mean release duration was longer in patients than in controls ( $133 \pm 30$  ms vs.  $96 \pm 34$  ms,  $P > 0.001$ ) and it was 30 times longer in the foot in both groups. DTI revealed lower mean spinal cord fractional anisotropy (FA) in patients compared to controls ( $0.50 \pm 0.03$  vs.  $0.52 \pm 0.03$ ,  $P = 0.008$ ). In patients, mean error during force tracking (hand and foot combined) correlated negatively with FA ( $r = -0.47$ ,  $P = 0.04$ ).

**Discussion.**– Force control deficits were found in CBN patients and it was related to reduced FA of the cervical spinal cord. These findings suggest that force tracking may be clinically useful in detecting and quantifying subtle alterations in the spinal cord structure in CBN, and that its treatment should integrate the lower limb.

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### An analysis of the burden of musculoskeletal conditions in France



C. Palazzo<sup>a,\*</sup>, J.-F. Ravaud<sup>b</sup>, P. Ravaud<sup>c</sup>, S. Poiraudou<sup>a</sup>

<sup>a</sup>Service de rééducation et réadaptation de l'appareil locomoteur et des pathologies du rachis, hôpital Cochin, AP-HP, université Paris Descartes, PRES, 27, rue du Faubourg-Saint Jacques, 75014 Paris, France

<sup>b</sup>Inserm, Institut fédératif de recherche sur le handicap, Paris, France