CO02-003-e

Cervical vertigo ou dizziness

C. Van Nechel [a,b,c,d]
[a] Clinique des vertiges, avenue Fr. Roosevelt 131,1050 Bruxelles, Belgique
[b] Unité de troubles de l'équilibre et vertiges, CHU Brugmann, Bruxelles, Belgique
[c] Unité de neuro-ophtalmologie, CHU Érasme, Bruxelles, Belgique
[d] IRON, Paris, France
E-mail address: cvnechel@ulb.ac.be

Keywords: Vertigo; Dizziness; Imbalance; Cervical vertebrae; Cervicalgia
"Cervical vertigo" is rarely true vertigo but there are several experimental and clinical arguments in favour of a possible origin of cervical postural instability. A correct perception of the body balance during head movement requires both a vestibular signal and precise cervical static and dynamic proprioceptive information. This finding alone is sufficient to validate the concept of a feeling of instability of cervical origin, called by some authors "cervical vertigo". A vascular mechanism is very rarely involved in the presence of two functional vertebral arteries and a normal Willis polygon. The increase in the gain of cervical-ocular reflex or the presence of a cervical nystagmus are not convincing arguments for a cervical origin of dizziness. Diagnostic criteria proposed in the literature require a temporal relationship between neck pain and postural instability even during recurrences, and the lack of neck pain excludes this diagnosis. Finally, other causes of dizziness should be eliminated.
Further reading
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What is multisensory reponderation change before and after a therapeutic repositionning manoeuver of a vertical semicircular one-sided BPPV?

F.C. Boyer [a,*], I. Paté [a], S. Ghouli [a], A. Rapin [a], L. Tambosco [a], J. Nicomette [a], C. Monseau [a], M. Toussaint-Thorin [c], A. Chays [b], E. Regrain [a]
[a] Unités de médecine physique et de réadaptation, CHU de Reims, hôpital Sébastopol, 48, rue de Sébastopol, 51092 Reims, France
[b] Unités de médecine physique et de réadaptation, CHU de Reims, hôpital Américain, Reims, France
[c] Unités d'ORL, CHU de Reims, hôpital Robert-Debré, Reims, France
*Corresponding author.
E-mail address: fboyer@chu-reims.fr

Keywords: Vestibular disorders; Begnin positional paroxystic vertigo; Rehabilitation; Repositioning manoeuver
Introduction.– Patients affected by BPPV present postural disorders: hesitating deambulation, fast movements perturbation. Although 1/3 of the patients complain about an walking instability discharging otolithic repositionning manoeuvers, we make the clinical hypothesis of an improvement of the global instrumental postural balance after these treatments.
Methodology.– Ten patients (3 mens) affected by an posterior semicircular one-sided BPPV are followed to j0, j7 and j28 by dynamic posturography (FRAMIRAL°). The mean age is 50 years (range 36–60 years). The patients had no intercurrent pathologies which can disrupt balance, they can see a red point by fixation in the darkness, and moved without walking device. The projection surface of the center of gravity (COG), the speed of travel of the COG were measured. Percentage of "Sensory Organization Protocol" (SOT according to 6 conditions) were calculated by the software of this dynamic posturography. Trends of these percentage were analysed.
Results.– Three of seven patients damage the SOT Framiral Test (condition 6) between j0 and j28. Three of seven patients are 0% at j0 to j28. One of seven is stable. While the patients have no spontaneous complaint.
Discussion.– This dynamic vestibular misuse after a otolithic repositionning manoeuver until j28 was rarely described. Two explanations can be advanced. He could involve a preferential use of the visual entrance as if it was a vestibular sideration. This sideration could be connected to the stimulation of the utricular system by the otoliths repositioned, which did not have time to be reduced until j28.

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Effects of proprioceptive new-generation strapping on maintaining the standing position

M.A. Choukou [a,*], F.J. Ferrari [b], J.L. Gaudron [c], R. Taiar [d]
[a] Groupe de recherche en science pour l'ingénieur (GRESPI), université de Reims Champagne-Ardenne, campus du Moulin-de-la-Housse, BP 1039, 51687 Reims cedex 2, 51687 Reims, France
[b] École Européenne de Podologie Pluridisciplinaire
[c] Centre Européen d'Enseignement en rééducation et déadaptation fonctionnelle
[d] Groupe de recherche en science pour l'ingénieur (GRESPI), université de Reims, Champagne-Ardenne, Reims, France
*Corresponding author.
E-mail address: amine_choukou@yahoo.fr

Keywords: Kinesio-Tape; Proprioception; Stability
Aim.– The first goal of this study (A) was to observe the effects of Kinesio-Taping (KT) applied to the Triceps Surae on the standing posture. The second aim was to compare these effects to a Classical Strap (CS).
Material.– A baropodometric platform (Medicapteurs®, sampling frequency: 100 Hz) allowing to record the plantar pressure repartitions (%).
Participants.– Ten men volunteered to participate to the first experiment A, while 14 men (7 KT and 7 SC) took part to the experiment B.
Methods.– The participants were asked to maintain a preferential standing position during 3 × 30s [1], according to the following modalities: (A): "barefoot" (control condition), "with KT", and "with SC"; (B): "KT" and "KT after 48-72", "SC" and "SC after 48–72 h".
Results.– Experiment A revealed a significant increase in right plantar pressures [$F(2, 21) = 2.59$; $P = .00$] from barefoot to KT. Besides, a significant increase in forefoot plantar pressure was observed from KT to SC [$F(2, 21) = 3.65$; $P = .00$). However, KT and SC were not significantly different each other ($P > .05$). Experiment B showed an increase in left side plantar pressure 48–72 h after SC application, and no effect after 48–72 h of KT application in both anterior-posterior and mediolateral axes.
Discussion.– The use of KT, for Gastrocnemius tonus harmonization aims, induced a relocation in the frontal plane (A) of the plantar pressure which is maintained after 48–72 hours (B) [2], whereas SC seems to have more mechanical [3] than proprioceptive effect. This mechanical effect was observed as a posterior to anterior blocking phenomena, which could be followed by a mid-term frontal re-equilibration owing to results of B. To conclude, KT and SC are two therapies with different but complementary aims depending on either stabilization or proprioceptive goals.
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Bilateral or unilateral tendon-vibration in the postural control: What are effects?

N.C. Duclos [a,*], L. Maynard [b], S. Mesure [c]
[a] Institut des Sciences du Mouvement Humain (Aix-Marseille Université, CNRS, ISM UMR 7287), 183, Avenue de Luminy, 13288 Marseille, France
[b] Centre de Réadaptation Fonctionnelle de Valmante, France
[c] Institut des Sciences du Mouvement Humain (Aix-Marseille Université, CNRS, ISM UMR 7287), France
*Corresponding author.
E-mail address: noemie.duclos@univ-amu.fr

Keywords: Postural control; Proprioception; Achilles tendon vibration

Objective.– To characterize sensorial reweighting phenomena in the postural control by perturbation of the lower limbs (LL) proprioceptive information. Applied-tendon vibration gives rise to a stretch illusion. In standing position, this illusion leads to a postural reaction to avoid the fall sensation. Has the unilateral or bilateral proprioceptive perturbation a particular influence on the postural scheme? What are the therapeutic consequences?

Material and methods.– Seventeen young adults (22.88 ± 2.5 years) were standing, with their natural foot position on a plat-form (8 loads, SATEL), wearing opaque glasses. Each trial was divided in a stable phase (P1, 5 s), an applied-vibration phase with bilateral [VibBi], right- [VibD] or left-unilateral [VibG] Achilles tendon vibration (P2, 20 s, itself divided in 5 periods of 4 s P21 to P25) then a re-stabilization phase (P3, 26.2 s). We calculate the mean position of the center of pressure (CoP) along antero-posterior (Y) and medio-lateral (X) axis, and the covered length. We realized a Manova for repeated-measures.

Results.– Applied tendon-vibration leads to a backward shift of the CoP along Y axis (VibBi > VibD & VibG) during P21 to P23, then it stabilize. The covered length is increased but doesn't evolve over time. VibD and VibG lead to a lateral shift toward the non-vibrated LL (no for VibBi). After vibration, the mean position along Y axis of P3 is correlated to it of P2 and it is similar of P1 mean position for VibD and VibG wheareas it is more forwarded for VibBi. The length is significantly more important only after VibBi (P1 vs P3).

Discussion.– During vibration, a new postural organization is built but it is still unstable. The balance associated with the new position of reference doesn't correspond with gravity imperatives and the postural scheme is still perturbed (especially when the 2 LL are vibrated). This perturbation persists after bilateral vibration. The transfer of body weight in reaction to VibD and VibG has to be an explored therapeutic intervention for patients with asymmetrical troubles (stroke, Parkinson's disease. . .).

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