Orthotics and prosthetics

Oral communications

C004-001-e
Unloading knee braces in the management of knee osteoarthritis: A literature review
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Introduction Osteoarthritis is the eleventh cause of years lived with disability. The non-pharmacological care management of knee osteoarthritis is of major importance according to the international published recommendations (OARSI, EULAR); unloading knee braces are functional devices designed to decrease load across the knee.

Methods We performed a literature review from Medline database until September 2014. Papers in English and in French have been selected and analyzed if they studied clinical and biomechanical effects of unloading knee braces. The key terms included: “osteoarthritis, knee osteoarthritis, braces, knee braces”. The references mentioned in these papers have been screened.

Results Twenty-four studies have been selected, two of them were randomized controlled clinical trials, with a total number of patients of 665 (mean age: 57.5 years, 177 women). GII Unloader® Knee Brace was the most used (10/24). Seventeen trials investigated the effects on pain, function and disability. VAS-pain and WOMAC were significantly improved. Walking speed increase has been reported in two studies. Effects on proprioception seemed to be positive and two studies reported a decrease of muscular co-contraction. Seven trials showed a decrease of the external knee adduction moment. A decrease of varus angulation and an increase of condylar separation have been reported. We noticed a poor compliance due to the large volume of the brace and just one case of deep venous thrombosis has been shown.

Discussion/conclusion Few studies were controlled and randomized, and methodological quality was weak in lot of them. Biomechanical effects of the unloading knee braces remain unclear. It would be interesting to evaluate their effect on the osteoarthritis disease progression.

Disclosure of interest The author declares that he has no conflicts of interest concerning this article.

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Knee ankle foot orthoses in treatment of genu recurvatum: Evaluation of efficiency, users' satisfaction and tolerance
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Introduction The aim of this study is to evaluate the efficiency, users’ satisfaction and tolerance of the Knee Ankle Foot Orthosis (KAFO) in treatment of painful genu recurvatum (PGR).

Material and method Epidemiologic retrospective monocentric study. Patients having a clinical PGR on stance phase confirmed by a practitioner. The main outcome was the pain before and after having the KAFO evaluated with the numerical verbal scale (NVS) of pain rated on 100 and the simple verbal scale (SVS) of pain. The secondary outcomes were the French version of the Quebec user evaluation of satisfaction with assistive technology (QUEBEC 2.0) and a numerical scale of satisfaction (NSS) rated on 100.

Results Twenty-seven patients but 31 KAFO have been analyzed (4 patients had both KAFO): 25 free knee joints/6 locked knee joints. Before and after having the KAFO, the NVS of pain decreased from a mean of 80/100 to 26.9 (P < 0.001) and the SVS of pain from “extreme” to “weak” (P < 0.001). The French version of the QUEBEC 2.0 had a total of 4.04 and the NSS had a mean of 86/100.

Discussion With this study, it was shown that treating a PGR with a KAFO is efficient on pain whatever the pathology from which the patient is suffering, and the patient satisfaction is good.

Keywords Knee Ankle Foot Orthosis; Pain; Genu recurvatum

Disclosure of interest The authors declare that they have no conflicts of interest concerning this article.

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C004-003-e
Satisfaction of patients with orthopaedic prosthesis made in the orthopedic center of the CNHU-HKM of Cotonou
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In the global process of rehabilitation of the amputee, the installation of an adapted orthopedic prosthesis constitutes the main objective of PRM departments. Satisfaction of the patient of the prosthesis is determining in its use and participate in the quality of life of the patient [1].

Objective To estimate the satisfaction of patients with orthopedic prosthesis made in the orthopedic center of the CNHU-HKM (OC/CNHU-HKM) of Cotonou, from 2006 till 2011.

Method Cross-sectional study with descriptive and analytical aim which consisted in seeing again between September, 2012 and January, 2013 47 subjects according to the criteria of inclusion and exclusion well defined on 137 patients with prosthesis from OC/CNHU-HKM, between 2006 and 2011, that is 6 years. Their level of satisfaction towards the prosthesis and their quality of life according to the London Handicap Scale were the studied dependent variables.

Results The subjects were 39,7 years old on average and for the greater part men (85.1%). Prosthesis were exoskeletal (59.6%) and endoskeletal (40.4%). For the majority (57.5%), the price of the prosthesis was high, but 63.8% were satisfied with it. The quality of life was good for 14.9%. The level of global satisfaction of the patients was influenced by their level of satisfaction in gait, by the solidity of the prosthesis, by the facility to use the prosthesis in daily and professional activities. There was no correlation between the level of satisfaction of the patient towards the prosthesis and his quality of life (P = 0.24).

Discussion/conclusion The satisfaction of the patients of their prosthesis is major for the good use of the device. For that purpose, it is necessary to reconcile the functional, esthetic financial requirements of the patient in the realization of the prosthesis.

Keywords Satisfaction; Prosthesis; Orthopaedic center

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Monocentric retrospective study about 64 patients after orthopaedic treatment in Scheuermann’s disease.

Quality of life and incapacity scale after brace ablation

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Background Spinal growth disease is commonly known as “Scheuermann’s disease” (SD) from the Danish physician who first described this illness. The prevalence is 1 to 8% and resulting in spinal pains, spinal deformations, vertebral and discal alteration. The conservative treatment occupies an important place in the care of patients to fight against spinal deformations and treating mechanical pains.

Objectives The main objective is to evaluate the results of orthopedic treatment on clinical and laboratory functional consequences of SD on the dorsal spine, thoracolumbar and lumbar vertebra. The secondary objective is to know the impact of this disease on disability and quality of life away from the removal of the corset.

Population and methods Sixty-four teenagers (37 boys [58%] and 27 girls [42%]), the average age at treatment being 14.4 years, were evaluated clinically (pain, clinical examination data) and radiologically (pelvic and spinal parameters, evolution of the deformation of the apical vertebra) at the beginning of treatment, at the end and with the biggest distance. A long time after the removal of the corset, a disability survey (Québec disability scale) and quality of life (SF36) is mailed to patients.

Results Thoracic location of the SD (69%), thoraco-lumbar vertebra (20%), lumbar vertebra (3%), complex (8%). The pain on the spine is significantly improved on the EVA decreasing from 30% before treatment to 2% at the ablation of the brace then to 4% with distance. Radiological correction of the thoracic and thoraco-lumbar kyphosis.

Discussion/conclusion The orthopaedic treatment is effective on the teenagers spinal pain treated for Scheuermann’s disease. The efficiency of the orthopaedic treatment must be discussed according to the location of the SD: thoracic, thoraco-lumbar or lumbar. It is necessary to define more specifically the expected objectives of the conservative treatment of the SD during growth concerning the pain, the correction of the sagittal curvatures and/or the repair of the vertebral damage and if possible disc damage too.

Keywords Scheuermann disease; Teenagers; Spinal growth disease; Pain; Orthopaedic treatment; Pelvic and spine parameters

Disclosure of interest The authors declare that they have no conflicts of interest concerning this article.

Further reading
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CO04-005-e
Severe congenital scoliosis: What possibilities for seating installation and mobility?

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Introduction We call congenital scoliosis a spinal curve which may be present before age of 3 [1]. Some resolve spontaneously while others can severely progress, but the literature do not report data about their prevalence. Its impact is multiple: the curve can induce an oblique pelvis, an alteration of respiratory function, some nutritional troubles or pain. All those can impair, daily the possibilities of prone or sitting positions, or capacities of mobility. And those problems, as we know, have not being studied in publications up to now.

Objective From 5 situations, we will approach the complaints of children and teenagers with severe congenital scoliosis, about their sitting installation with discomfort, their mobility or participation limitations. In each case, we will also report some possible difficulties for the adaptation of compensation devices.

Discussion/conclusion Young patients with severe scoliosis can suffer daily of bad installation, painful and impossible to sustain during hours. They can need devices to support their mobility (scooter, wheelchair). Those problems are not enough evaluated and taken into account while they can impact patient’s quality of life. Attribution of devices for compensation is not a simple course, from the evaluation to the technical realization (custom-made most generally) with sometimes even legal difficulties.

Keywords Congenital scoliosis; Children; Wheelchair; Mobility

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