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Keywords: Prosthetic fitting; Osseointegration; Amputation; Transfemoral; Transhumeral; Transradial; Thumb; Bionic limb reconstruction

Since it's introduction in the mid 1960s, skeletal fixation of dental prostheses by means of titanium osseo-integrated implants has become a routine technique. Skin perforating implants provided solutions for the fixation of epitheses in facial defects and for the transfer of acoustic vibrations when using BAHA hearing aids. The knowledge and experience gained from these models proved essential in developing a similar solution for the fixation of the exoprosthesis on problematic mainly femoral and humeral stumps. Amputee patients were treated for the first time by Brånemark et al. in Gothenburg in 1990 (transfemoral and thumb, transradial in 1992, transhumeral in 1994). Standardised implants and a detailed rehabilitation protocol (OPRA) have been in use since 1999.The treatment is no substitute for a functioning and well tolerated socket prosthesis. However, it may be a valuable alternative for otherwise fit and healthy patients with short amputation stumps or chronic pressure sores or other skin disorders which preclude regular socket fitting. Clear gains in limb function and quality of life have been demonstrated in this selected patient group in medium term outcome studies. The quality of the bony fixation appears to behave similarly over time as in dental implants and uncemented hip prostheses. This raises optimistic expectations for the long-term survivalship of these implants. Infectious complications obviously remain a concern but the incidence stays within reasonable limits. Superficial infections can be treated conservatively. As in dental implants, deep infections can be treated according to standard principles and most often without loss of the implant. Hence, it appeared to us that the technique has matured to the extent, that we trusted to start with its introduction in our hospital. Our first transhumeral amputee was operated in May 2010. More cases, also transfemoral amputee patients have followed since. The treatment program basics, the associated investigational setup and our considerations concerning the technique will be discussed. Recent technical innovations of the implant system may maximise the effect of other developments in the treatment of amputees, such as targeted muscle reinnervation. The prospect of functional bionic limb reconstruction may thus become more realistic.

http://dx.doi.org/10.1016/j.rehab.2013.07.170

CO18-002-e

Contribution of mesotherapy techniques for residual limb hyperhidrosis treatment with botulinum toxin: Case report

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Keywords: Amputation; Hyperhidrosis; Botulinum toxin; Mesotherapy; Intradermal injection; Intrepidermal injection

Introduction.– Lower limb amputee patients can suffer from residual limb hyperhidrosis with functional impairment treated with Onabotulinumtoxin A intradermal injections which may be painful. To reduce pain, we propose to use intraepidermal injections (a quite painless mesotherapy technique).

We report the case of a transtibial amputee who benefited from the two techniques, which we compare.

Observation.– A 37-year-old transtibial amputated patient presented a severe hyperhidrosis requiring to take off prosthesis to dry it.

– first technique: intradermal injections (100 units OnabotulinumtoxinA diluted in 4 mL of saline solution, distributed on the zone covered by the sleeve, in 40 points);

– second technique, 10 months later, because of hyperhidrosis relapse with functional impairment: intraepidermal injection (same protocol).

The D0 and M2 evaluation for each injection shows:

– "VAS pain during injection": 80/100 with intradermal injections; 8/100 with intraepidermal injection;

– "VAS quantity of sweat": declining by 83% with intradermal injections (VAS: 15 at M2), by 37% with intraepidermal injection (VAS: 25 to M2);

– "VAS discomfort associated with sweat": declining by 89% with intradermal injections (VAS: 10 at M2), by 44% with intraepidermal injection (VAS: 25 at M2);

– with both techniques: no more need to take off prothesis to dry it, Subjective Improvement Felt: 60%.

Discussion.– The intraepidermal technique seems interesting, bringing a clear decrease of pain during injections and satisfactory functional results.

The improvement percentage of hyperhidrosis evaluation criteria seems less important with the intraepidermal technique. But, during this injection (unlike during the intradermal injections), the patient applied local aluminium salts and possibly still had benefits from a residual effect of the preceding OnabotulinumtoxinA treatment.

http://dx.doi.org/10.1016/j.rehab.2013.07.171

CO18-003-e

Prospective study: Evaluation of the thermoudled foot orthoses effects

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Keywords: Foot orthoses; Foot evaluation; Pain; Functional and pain index

Objective.– Thermomoulded foot orthoses are usually prescribed for various pathologies to improve foot function and to relieve the pain. Few studies have evaluated their conditions of use and their effects. The aim of this study was to evaluate their effects on the experience of pain and the functional abilities with a Foot function and pain index (FFPI) measuring functional discomfort (12 items) and foot pain (eight items) [1].

Patients and methods.– Two hundred and twenty voluntary patients were divided into five pathological groups: metatarsalgia (M, $n = 77$), gonalgia (G, $n = 43$), low back pain (L, $n = 45$), plantar aponevrositis (A, $n = 38$) and calcaneus tendinitis (T, $n = 17$). Thermomoulded foot orthoses were realized from OPCT® (Thermoformed Composite Plantar Orthotic) after a podiatric examination. Participants were asked to complete the FFPI questionnaire during the first day of the examination and in-between the sixth and nineth week, as well as another questionnaire regarding the wearing of orthoses in terms of hours per day.

Results.– It was reported that 70% of participants were wearing the orthoses at least 6 h per day at the exclusion of the low back pain group whose the half reported using them 6 h per day and the other half, 2 h a day. For all groups, statistic analysis shows significant decreases of functional discomfort (F) and foot pain (P) scores of the FFPI. More precisely, these decreases were noticed for 87% of metarsalgia participants (P and F: $P < 0.01$), for respectively, 84% and 90% of gonalgia (P: $P < 0.05$; F: $P < 0.01$) and plantar aponevrositis groups (P and FP: $P < 0.01$), of 70% for the calcaneus tendinitis group and only of 62% for the lower back pain group (P and F P: $P < 0.01$).

Discussion.– Participants reported that the thermomoulded orthoses had improved their functional abilities and decreased foot pain. These effects could partly be related to a better plantar load distribution.

Reference

[1] Berger L, Bry C, Calleja M-J, Maligorne M, Avenaz K, Blanc M-C. Validation d'un index fonctionnel et de douleur du pied en langue française. Ann Phys Rehab Med 2012;55(1):e57.

http://dx.doi.org/10.1016/j.rehab.2013.07.172

CO18-004-e

Technical and smart fabrics fibers orthosis for recurvatum knee in hemiplegic patients

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