World Journal of Urology
https://doi.org/10.1007/s00345-022-04007-1

LETTER TO THE EDITOR

A case of stress urinary incontinence after radical prostatectomy successfully treated with an innovative device based on top flat magnetic stimulation

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Received: 9 March 2022 / Accepted: 12 March 2022

Dear Editor,

We have read with great interest the article by Lane et al. [1] who discuss about diagnosis and risks on the onset of urinary incontinence in men with newly diagnosed clinically localized, very low-to-intermediate-risk prostate cancer who elected for prostatectomy.

Urinary incontinence (UI) is common after radical prostatectomy (RP) and can also occur in some circumstances after transurethral resection of the prostate.

Conservative management includes pelvic floor muscle training with or without biofeedback, electrical stimulation, pharmacological treatment with anticholinergics, compression devices (penile clamps), extra-corporeal magnetic innervation (ExMI), or artificial sphincter implantation [2].

Most patients generally prefer less-invasive forms of treatment as a first-line therapy before considering an artificial sphincter implantation. Furthermore, the review of trials from literature found that there was conflicting evidence about the benefit of therapists teaching men to contract their pelvic floor muscles for either prevention or treatment of urine leakage after radical prostate surgery for cancer. However, information from one large trial suggested that men do not benefit from seeing a therapist to receive pelvic floor muscle training for benign prostatic enlargement.

In addition, other techniques such as surgery or the use of a penile clamp (that needed to be use cautiously) are often associated with multiple contraindications correlated to safety risks like anaesthesia risks, use of anticoagulants, urinary infection, as well as a patient's general apprehension and worry regarding the negative consequences associated with these procedures.

Among these therapies, magnetic stimulation, in comparison to electrical stimulation, has been shown to be more effective in improving patient's UI symptoms and quality of life (QOL) following RP as reported in the literature [3–5].

Furthermore, the evidence of magnetic stimulation efficacy in the treatment of chronic male pelvic pain syndrome and associated UI complications were well established [6].

In this preliminary case report study, we evaluated the effect of the innovative technology of DR. ARNOLD (DEKA M.E.L.A. Calenzano, Italy) in the management of male UI after RP. The subject device has been CE marked since July 2020 for pelvic floor muscle strengthening and UI management.

DR ARNOLD consists of a main unit and a chair applicator and the stimulation is generated by electromagnetic fields with a homogenous profile (TOP FMS–TOP Flat Magnetic Stimulation) that allows a greater recruitment of muscle fibers without creating areas of uneven stimulation intensity, resulting in the interaction with the tissue include muscular contraction, depolarization of neuronal cells, and influence on blood circulatory system.

The two protocols, Hypotonus/Weakness 1 (muscle work aimed to recover trophism and muscle tone) and Hypotonus/Weakness 2 (muscle work aimed to increase trophism (volume) and muscle strength) and Incontinence Impact Questionnaire-Short Form (IIQ-7) [7] were used to investigate and assess the efficacy of the device from baseline up to 2 months of follow-up (2MFU). A written informed consent was signed by the patient and archived.

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Published online: 13 April 2022

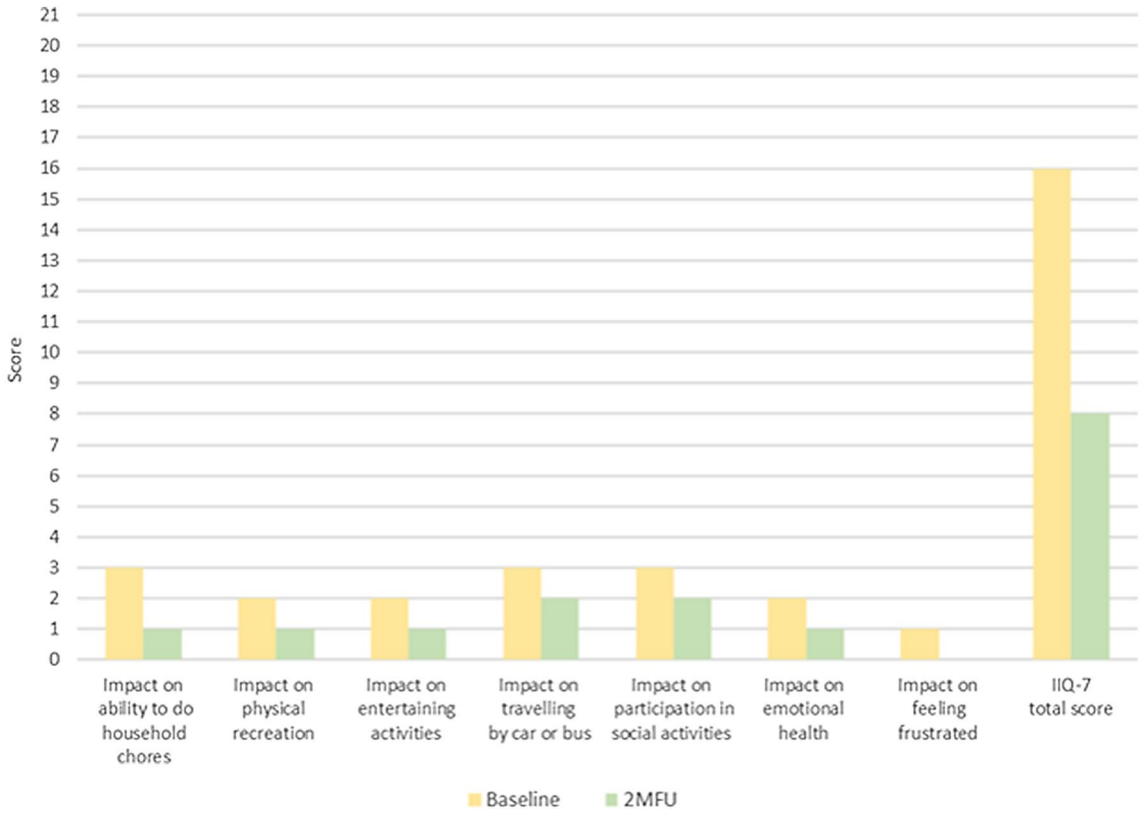

Fig. 1 Partial and total IIQ-7 mean scores at baseline and up to 2MFU

We present a case of 70 year old man with a history of laparoscopic RP after recent diagnosis of prostate adenocarcinoma of stage III. Immediately after the removal of the bladder catheter, the patient complained of urgency and loss of strained urine.

On urologist's prescription, the patient underwent 15 rehabilitation sessions of the pelvic floor including electrical stimulation without any improvement.

Patient underwent to eight sessions of DR. ARNOLD (four sessions with hypotonus 1 and four sessions with hypotonus 2) for 28 min.

Our findings showed that all single questionnaire scores decrease from baseline up to 2MFU leading to a reduction of the total IIQ-7 mean score from baseline (16) up to 2MFU (8) (see Fig. 1).

Figure 1 shows that Impact on ability to do household chores declines from baseline (3) up to 2MFU (1), Impact on physical recreation declines from baseline (2) up to 2MFU (1), Impact on entertaining activities declines from baseline (2) up to 2MFU (1), Impact on travelling by car or bus declines from baseline (3) up to 2MFU (2), Impact on participation in social activities declines from baseline (3) up to 2MFU (2), Impact on emotional health declines from baseline (2) up to 2MFU (1), and Impact on feeling frustrated declines from baseline (1) up to 2MFU (0).

Patient was very satisfied and reports QOL improvement and more involvement inside social activities, and no adverse events were recorded during all treatment period.

A key aspect of this technology is represented by the regular emission of energy progressively delivered that allow patients to stay fully clothed (the magnets do not touch the skin and there is no pain) in a comfortable and ergonomic seat and the uninterrupted treatments allow patients to resume their daily activities immediately after the sessions.

In conclusion, our results suggest that this technology could be used as an alternative and convenient male UI-treatment tool.

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