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Improvement in Erectile Dysfunction After Radiotherapy for Prostate Cancer Using Focused Muscle Vibration

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Introduction

Radiotherapy (RT) for prostate cancer is associated with significant long-term effects on sexual function. Percentages of erectile dysfunction (ED) reported in studies post external-beam radiotherapy (RT) vary from 30-40%, and these percentages are similar to those post brachytherapy. Phosphodiesterase type 5 inhibitors (PDE5-I) have been shown to be effective to treat post-radiation ED in about half of patients. The etiology of ED after RT of prostate cancer is most probably multi-factorial. Pelvic floor muscle (PFM) function may be affected by prostate radiation. Pelvic floor muscle function in men is crucial in the achievement and maintenance of penile erection and in the ejaculation process. Focal muscle vibrations (FMV) have previously been used to manage various pelvic floor dysfunctions caused by diverse pathologies.

Aim

To report a case of improved ED after RT for prostate cancer using FMV.

Methods

A 74-year-old male from Spain, sexually active, in a stable relationship and fully continent, acquired ED following surgery for prostate cancer 6 years prior. He initially responded positively to the PDE5-I, 5mg once daily tadalafil, treatment. Three years later, patient underwent RT for recurrence of prostate cancer and no longer responded to PDE5-I treatment. Patient was given prostaglandins as a second line treatment but responded poorly, with moderate side effects. With no other active treatment or ongoing chronic pathology, patient was encouraged to use a portable male vibrator called Tenuto II;, three times a week, for five consecutive weeks, at home, in combination with PDE5-I 5mg, once daily. Each session was 30 minutes and the vibration was delivered at a frequency of 130 Hz to the perineum and suprapubic areas. Pretest score on the International Index of Erectile Function (IIEF-5) Spanish version was 6. Changes in the IIEF-5 Spanish version were used to evaluate the effectiveness of FMV in improving ED. It has been suggested that an increase of 6 points in this domain indicates a clinical improvement. The Spanish version of the Patient's Global Impression of Change (PGIC) was used to evaluate treatment satisfaction.

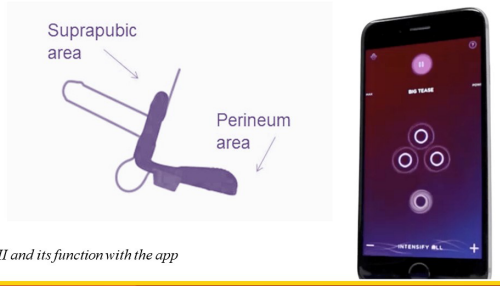


Figure 1 ; Tenuto II and its function with the app

Results

At the end of five weeks, the patient showed improvement over baseline of 8 points for the IIEF-5 score, from 6 to 14, using the device. The patient reported feeling moderately better on the PGIC.



Figure 2; Tenuto II and 130 Hz that were used with the patient



Table 1 ; Representation of the progress of the patient (timeline)

Conclusion

In this case we believe that the clinical improvement in ED may be due to FMV that improved PFM function. Previous research suggests that FMV may improve PFM function by enhancing muscle synergies and counteracting spasticity. In conclusion, we believe that the use FMV can be a useful tool for the clinical improvement of ED in patients undergoing RT, who do not respond to first line treatments for ED. Further studies, including a larger number of participants, control groups, randomization, and follow-up, are necessary to validate these findings.

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