PTNS IN THE TREATMENT OF OVERACTIVE BLADDER

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Bladder neuromodulation, through the percutaneous electrical stimulation of the posterior tibial nerve (Percutaneous/Posterior Tibial Nerve Stimulation -PTNS-), was proposed by Stoller as a novel treatment of the overactive bladder syndrome in the 1990s\(^1\).

However, PTNS stimulation corresponds to Traditional Chinese acupuncture point Sp 6, located 4-5 cm cranially from the medial malleolus, used for bladder dysfunction. As a background, animal studies carried out on rats showed that it was possible to achieve detrusor inhibition by stimulating the tibial nerve\(^2\). The first scientific studies in humans were carried out by McGuire, in 1983 who demonstrated the inhibition of detrusor contractions with tibial nerve stimulation in neurological patients\(^3\).

The posterior tibial nerve is a mixed sensory and motor nerve whose fibres originate from the sacral roots which innervate the bladder and the perineum. This anatomic characteristic allows for direct stimulation (which can be defined as retrograde or afferent) of S3, area not involving the genitals. The advantages of this method are the mini-invasiveness and the good patient tolerability. Moreover, in contrast to sacral neuromodulation, it is a non-surgical method, it is performed in an outpatient setting and does not require a subcutaneous “pace-maker” implantation.

The technique described by Stoller\(^1\), which is still in use, anticipates the electrostimulation of the nerve in an area located just above the medial malleolus using a 34 G percutaneous metal needle: after having applied the electrical current, the plantar bending of the big toe or the “fan-like” spreading of the other four fingers show that the needle is in the correct position.

Electrostimulation is continuous and lasts for 200 μs at a frequency of 20 Hz; a stimulation session lasts thirty minutes and is carried out once a week for twelve consecutive weeks.
PTNS has being evaluated for many different indications in the treatment of pelvic floor dysfunctions. In this workshop we will focus on the efficacy of such a technique in treating refractory overactive bladder syndrome.

In the last few years an increasing evidence has consistently shown that PTNS has a significant superior efficacy than placebo in the treatment of patients with OAB not responding/tolerating antimuscarinics.

Some aspects, however, still need to be explored such as the different protocols described in literature (in terms of number of sessions, treatment duration, monolateral or bilateral stimulation etc).

Educational videos of the procedure will be presented and, at the end of the mettine, a practical demonstration of the procedure will be shown.

BIBLIOGRAPHY


