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PENG RADIOFREQUENCY AND HIP CHRONIC PAIN: IS THIS THE NEW WAY OF THE FUTURE?

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Dear editor,

we have read with great interest the review of del Buono et al¹, and we thank the authors for having wonderfully focused on all the different uses of the PENG block.

We found it very interesting the treatment of chronic pain Osteoarthritis by radiofrequency in patients with hip osteoarthritis and at the same time we want to show our experience in the application of “modified PENG pulsed radiofrequency” as alternative technique for the management of hip chronic pain.

Patients with osteoarthritis and refractory chronic pain to stronger pharmacologic options, could benefit from pulsed or ablative radiofrequency (RF) of sensory branches of major nerves innervating the hip joint.²⁻³

The case is of a 57-year-old woman with stabbing pain (NRS 7) in the right hip joint. The pain was totally unresponsive to analgesic drug therapy, so we decided to use pulsed radiofrequency at level of hip articular branches of femoral nerve (ABFN) and accessory obturator nerve (AON).

The patient was placed in the supine position. After careful skin disinfection and draping and the start of conscious sedation, the procedure was performed.

Using a curvilinear low-frequency ultrasound probe (2–5 MHz), placed in a transverse plane, the anterior inferior iliac spina was identified and turning the probe 45° the ischio-pubic eminence and the femoral artery was spotted.

Then, with previous skin anesthesia, a 22-gauge 100-mm needle radiofrequency cannula with thermocouple temperature sensor was inserted from lateral to medial direction.

An in-plane approach was used, in order to place the tip of the needle towards the inferior-lateral part of the femoral artery (Figure 1 A-B), where the articular branches of the femoral nerve are clustered much tighter than areas closer to the joint. Sensory stimulation was made to elicit distress, like the usual pain of the patient to confirm the exact position of the tip of the 100 mm needle. A motor stimulation was applied too.

Then, pulsed RF was performed in “pulse dose” mode, delivering 1200 pulses with the temperature set at 42°.

Subsequently, the needle tip was directed below the femoral artery, towards the apex of the ischio-pubic eminence, in order to reach the AON. In order to obtain a correct position of the needle, we have sought a sensory and motor stimulation. After the positive result of both tests we proceeded to pulsed RF with "pulse dose" mode, delivering 1200 pulses at 42 ° C.

At the end of procedure the patient had a NRS 2. Pain score was assessed at 4, 8 and 12 weeks after procedure, in order to evaluate pain at rest and dynamic. In all subsequent checks the patient did not report any pain, with an average value NRS 3 without using pharmacologic therapy and opioid sparing.

With our “modified PENG pulsed radiofrequency technique” we suggest an alternative approach for the treatment of refractive chronic hip pain secondary to osteoarthritis

The present results are promising in term of pain control, long-lasting analgesia, opioid-sparing effect, avoiding exposure to fluoroscopy's radiation for the patient and operator. Further studies are needed to assess the effectiveness of this method.

Is this the new way for the future in the treatment of chronic hip pain?

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NOTES

Conflicts of interest: The authors certify that there is no conflict of interest with any financial organization regarding the material discussed in the manuscript.

“Authors' contribution”

Pierfrancesco Fusco: this autor helped substantial contributions to the conception or design of the work; and final approval of the version to be published

Gian Marco Petroni: this autor helped substantial contributions to the conception or design of the work; and final approval of the version to be published

Di Carlo Stefano: this autor helped substantial contributions to the conception or design of the work; and final approval of the version to be published

Chiara Maggiani: this autor helped substantial contributions to the conception or design of the work; and final approval of the version to be published

Franco Marinangeli: this autor helped substantial contributions to the conception or design of the work; and final approval of the version to be published

Walter Ciaschi: this autor helped substantial contributions to the conception or design of the work; and final approval of the version to be published

FIGURE LEGEND

Figure 1 A-B

A - Ultrasound image showing the needle (N) whose tip is located towards the inferior-lateral part of the femoral artery (A), where the articular branches of the femoral nerve are clustered much tighter than areas closer to the joint. The needle will continue its path up to the accessory obturator nerve (AON) at the Ischio-pubic eminence (IPE). AIIS: Anterior inferior iliac spine, V: Femoral Vein.

B - Image on cadaver showing the relationships between the femoral nerve and its branching (FNB) and the reference bone structures for the execution of the technique: ischio-pubic eminence (IPE) and anterior-inferior iliac spine (Courtesy of Prof. Carla Stecco, University of Padua). The illustration on the right shows the relationships between the indicated anatomical structures and the bone structures of which the profile is highlighted.

