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## Abstract

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## Pulsed radiofrequency in a case of cervicogenic headache

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### Abstract

#### Introduction

Cervicogenic headache, included in secondary headaches, is determined by a dysfunction of the cervical spine, its bone, disc and facet structures, usually accompanied by neck pain. The pain is usually unilateral on the same side where the musculoskeletal abnormality is present. In our clinical cases, since pharmacological and physiotherapeutic therapies were not effective, it was decided to perform pulsed radiofrequency of the NGO, TNO and BM C3 and C4 of the same side.

#### Methods

We treated a clinical series of 12 cases with cervicogenic headache and neck pain. Patients have previously been subjected to pharmacological treatments with anti-inflammatory analgesics, antiepileptics and opioid analgesics without success. Treating the following diagnostic block (GNO, TNO, BM C3, C4, C5 and C6) with lidocaine 10mg/ml and dexamethasone 2mg it was decided to proceed with pulsed radiofrequency. With ultrasound guidance you can identify:

-the greater occipital nerve in its course between the inferior oblique muscle of the head and the semispinal muscle of the head

-the TNO at the apex of the C2-C3 joint

- the BMs of C3, C4, C5 and C6 in the valley of the joint pillars.

A needle with a 5mm length reaches each nerve. Sensory and motor tests are performed and treatment with pulsed radiofrequency is carried out: the temperature must not exceed 42°C, 2Hz, 20msec for 4 minutes at 55 volts.

#### Results

Before treatment, the patients complained of unbearable pain especially after the extension of the cervical spine. On diagnostic imaging, there was a reduction of the intervertebral forament. After the treatment, following the early effect attributable to the local anesthetic and the cortisone, the patients reported disappearance of the pain symptoms in three weeks. Now patients don't refer the intolerable pain experienced before. They are followed up with biweekly NRS assessments and at seven months they will be pain-free.

#### Conclusions

The cervicogenic headache is characterized by very intense pain perceived in the area of innervation, frequently associated with reduced sensitivity and paresthesias. The differential diagnosis with problems of the zygapophyseal joints or linked with the musculature of the region should be performed. In our cases, the pain is in the nuchal region as well as the neck area. The diagnosis was defined with the execution of ultrasound-guided blocks with local anesthetic and cortisone which gave about ten days of relief. The use of pulsed radiofrequency avoids the possible complications of continuous radiofrequency, it is effective and can be repeated after six months. Little is known about the mechanism of action, regarding the complications no problems have been described despite the extensive and numerous applications.

Pulsed radiofrequency proves to be an effective and safe therapeutic modality. A selective denervation of the C fibers is determined without involvement of the myelinated fibers and without sensory and motor

complications. It is possible to find these complications with the continuous radiofrequency as well as neuropathic pain. A placebo effect cannot be excluded. The safety profile and efficacy encourage the execution of studies that can certify quantitative data.

#### Bibliography

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