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## Clinical experience with paravertebral ozone and synthesis material withdrawal (transpedicular screws) [abstract]

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### ABSTRACT

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**Introduction.** Among 40% and 80% of patients that underwent to back surgery, continue experiencing persistent pain, a condition known as failed back surgery syndrome. Pathology relatively frequent after an intervention, this doesn't mean that the surgery has been badly done , nor badly indicated but the pain has not disappeared. On the other hand the patient with low back pain that does not improve with surgery will show a worse evolutionary process of that which would be the natural course of their low back pain.

The treatment for chronic pain due to failed back surgery syndrome continues being a true challenge for the specialist, standing out by its complexity and by its medical implications and the functional limitations that these represent.

This syndrome continues climbing positions all over the world and particularly in the industrialized countries, where it ranks as a real epidemic of our civilization. It represents a high cost for society, so much for the medical expenses (visits, treatment, pharmacy) disability and work activity loss , not to mention the suffering of the patients, a sanitary problem of dimensions difficult to calculate, what forces us to search for new treatment strategies with the aim of diminishing or eliminate pain for a long term.

A multi center study in Spain reveals that patients with this pathology have spent more than 900 euros in hospital and ambulatory treatments, which more than 58% have been in pharmacology, 25 % in rehabilitation or interventionist therapy and the rest in doctor's fees.

According with other results of the study , 35% of patients are on sick leave due to this pathology and 40% need help for daily activities, during and average of 4,5 hours a day . Affecting not only who suffers from it but the people around them.

The failed back syndrome symptoms are Lower back pain, persistent or recurring and /or pain in limbs after one or more spine surgeries . Among the possible organic causes are fibrosis epidural, arachnoiditis, mechanical factors due to inserted implants or badly inserted implants, pressure changes induced in the nervous root , structural changes in the spine and lumbar degenerative disease.

The paravertebral ozone therapy, thanks to its anti-inflammatory effects around the disc of the nerve or the rachis ganglion, plus its biochemical and enzymatic actions in the area has been used successfully in the secondary lumbar pain treatment to disc hernia, avoiding surgery therefore eliminating the complications associated with it.

**Purpose.** With the aim of offering solutions to this problem we could not help but wonder, based on our experience with the ozone in the back pain treatment, what happens when the pain persists after the surgery? Could the ozone plus the synthesis material withdrawal an effective treatment?

**Materials and methods.** From 2013 to 2015, were treated 10 patients who suffered from persistent spine pain after transpedicular screws surgery at lumbar back level. All were asked new x-rays studies and lumbo sacral spine MRI.

A clinical evaluation and of the images were made to all the patients. Three patients had 4 transpediculars screws with its bars at L4-L5 and L5-S1 level and 7 patients had 6 screws with their bars at L3-L4, L4-L5 and L5-S1 level.

This group of patients were initially treated with paravertebral ozone therapy with the technique already described and they had remission of neuropathic pain referred to lower limbs but had pain persistency of lumbar pain of the mechanic type.

The explanation and interpretation of the pain after revising the imaging studies and the clinical evaluation of the patients, was the translation of the shredding strength to a level immediately superior to the fixation level made, since the levels with transpediculars screws behave like an arthrodesis generating mechanical stress in the area. Through Previous conversation and discussion with the patients, they were proposed as a new treatment the withdrawal of all the synthesis material and fill the spaces formerly occupied by the screws with 20cc of bone allograft in crushed chips with blood.

The patients were treated 1 month later with paravertebral ozone in a number of 20 sessions of 10 ml in the right paravertebral region and 10 ml in the left paravertebral region with a 23 G x2 3/8 needle . The concentration used was of 10 micrograms/ml, previously injected 1 ml of Cifaraina at 1% with a 23 G X 1 1/2 in bilateral paravertebral regions. Immediately cryotherapy localized for 5 minutes.

They were made with a frequency of 3 sessions per week.

**Results.** The respond of patients to the treatment received, was the total remission of painful symptoms in 6 months average of post-operation follow up . The patients went back to their regular activities without any functional limitation.

**Conclusions.** We recommend to the failed back syndrome patients with persistent mechanical pain that after ozone therapy, would consider the extraction of initial fixation systems and to implement paravertebral ozone therapy as a medical tool of great value managing the failed back syndrome improving the quality of life of the patients.