

# Treatment of Lumbar Disc Extruded and Migrated Hernia with Direct Puncture and Injection of Ozone

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**SUMMARY** - *The purpose of this study is to evaluate the possibility of treatment to the lumbar disc extrusion, migrated or not, with direct puncture and injection of ozone. We treated 90 patients who presented lumbar disc extrusion and migration with intense lumbar and sciatic pain resistant to pharmacological and to physiotherapeutic treatment. All the patient had previously been evaluated with CT, MRI and an electromyography exam. All the procedures were performed under CT guidance and without any type of anesthesia. We used 22 Gauge Chiba needles introduced with a posterior translaminar approach and we injected, for each treatment, 5-6ml of a 33% mix of oxygen-ozone. Patients were evaluated successively with clinical checks and with MRI. We observed a pain reduction of 85% and a degree of volume of the hernia in MR imaging. No evidence of complications. From our preliminary studies we observed that direct puncture and injection of ozone in the extruded and migrated hernia could result in a valid therapeutic option for patients who are not candidates for surgical intervention, considering the high percentage of success in relation to low complication rates.*

## Introduction

Lumbo-sacral pain is the most frequent symptom found in the western population, effecting around 80% of adults, with a clear lowering of the average age of incidence. In most cases the cause of the lumbar pain and/or cruralgia and/or sciatica, has as its source a disk hernia, with associated radicular syndrome. The ethiopathogenesis of lumbo-sacral pain from hernias is linked both to mechanical factors (with direct compression by the disk on the root nerve, or deformation of the anulus with nociceptive stimulation of the rear root of Luschka's nerve; and indirectly by ischemic factors) as well as inflammatory factors (cellular mediated and biohumoral with release of inflammation mediators). A discal hernia can be classified as: protruding, extruding and expelled. A hernia is protruding when the fibrous anulus remains intact; it is extruding when the fibrous anulus is not intact, but the hernia is still contained within the longitudinal posterior ligament, while it is expelled when the herniated fragment is to be found in the vertebral canal.

*Nowadays.* At present the approach using minimally-invasive percutaneous procedures is widely performed in the treatment of patients with protruding or extruding hernias, in those cases where con-

servative therapy is unsuccessful after 6 consecutive weeks of treatment. On the other hand treatment of expelled and migrated discal hernias today still presents notable difficulty in the choice of therapy because of both the lack of response by patients to traditional pharmacological and rehabilitative therapies as well as the limits to the eligibility of patients for therapeutical surgery. In fact the eligibility for therapeutical surgery is restricted to a limited number of patients, with a limited inclusion of patients affected by Cauda equina syndrome and with progressive neurological deficit, OR patients with motor paralysis of the lower limbs. On one hand the limited selectivity of patients eligible for surgical procedures, and on the other the long hospital confinement, invasiveness and the associated risks, have both led to research for a percutaneous procedure characterised by high tolerance, operational simplicity and low cost. Such a procedure envisages inserting a needle directly into the hernia under CT guidance and the injection therein of a few milliliters of Oxygen/Ozone. Of this latter we take advantage of the now well-known anti-inflammatory and analgesic properties (decisive in the pain from disco-radicular trouble), as well as its ability to reduce the volume of the tissue of the discal hernia.