

COMBINED MICROSURGICAL APPROACH AND LASER DISC DECOMPRESSION IN CERVICAL SPINE.

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ABSTRACT

In order to minimize the invasive approach to the cervical spine, permitting the best preservation of the anatomy a combined microsurgical access and Laser Disc Decompression has been performed in cervical disc herniation. The possibility to treat in the same patient more levels combining different surgical techniques, permit the best resolution of the pathology. The anterior access to the cervical spine via a transversal skin incision, in the treatment of massive disc herniations coupled with osteophytes to be removed and treated also with a plate in order to stabilize the spine, has been associated with Laser Decompression in upper or lower levels in which a symptomatic nerve root compression without osteophytes could be treated successfully.

Material and Method: We treated 20 patients affected by cervicobrachialgia due to a massive disc herniation. Ten patients had a C5-C6 and C6-C7 disc herniation, 5 patients had a C4-C5 and C5-C6 disc herniation, 2 patients had a C3-C4 and C5-C6 disc herniation and 3 patients had a C4-C5 and C6-C7 disc herniation. All the patients had a conservative therapy for at least 4 weeks before surgery, and the inclusive criteria were : lasting pain in beginning neurological deficit (responsive to EMG) with dysesthesia on more than 2 levels involved (more than 2 nerve root entrapment). We choice to treat the bigger ones surgically via a microdiscectomy coupled with a dynamic anterior arthrodesis (plate), but we apply a Laser Decompression via a 21 G needle inserted into the disc herniated in the smaller ones. The total Laser energy delivered was of an average of 400 Joules, in pulsed - 3 sec – wave, 8 Watt powered. A specific Diode Laser 980nm (**Biolitec AG**), and a dedicated optical fiber (NA 0.22) has been used.

Results: according to Macnab's criteria, we had a successful result in the 96% of cases, with an improvement in the EMG after 3 months. No postoperative treatment was delivered into the discs Laser Decompressed and no disc has been treated in a second step surgical way.

In conclusion the possibility to couple, after an accurate preoperative planning, several surgical techniques permit nowadays to have the Laser Decompression as a valid complementary choice in the management of cases in which a complete restoration could be obtained with a minimal invasiveness surgery.