

The Nonendoscopic Percutan Laserdiscektomie with Neodym-YAG Laser of Chondrodystrophic Dogs

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Introduction

After the first intradiscal laser aleotomies in human disc surgery by Ascher, Choy, Hellinger and Siebert were carried out in human medicine at the end of the eighties, the implementation of this minimally invasive surgical technique was of great interest in veterinary surgery in discopathy in dogs.

The care of herniated discs in veterinary medicine mainly in chondrodystrophic dog breeds has so far been reserved for conservative treatment in hemiparesis of cervical, thoracic or lumbar spine syndrome with steroidal or nonsteroidal anti-inflammatory drugs as well as antidiuretics and mannitol infusions in general veterinary practice.

In paresis, severe radical pain syndromes and paralysis, only invasive surgical intervention using hemilaminectomy, laminectomy, or fenestrotomy in designated specialist clinics has been indicated by the soon-to-be-referral of general practitioners.

The success rates were prognostically of enormous importance for the spine surgery and disc surgery on the severity of the prolapse, the neurological deficits and mainly the duration of the pretreated discomfort of the Discopathie.

In contrast to the anatomy of human-animal (dog), some peculiarities should be emphasized in the minimally invasive PILD surgery method, as well as in traditional surgical techniques in disc surgery.

However, as in humans, there are also clinical and pathological similarities, such as in faste compressions of the spinal cord and its exiting nerve roots in the dog by herniated disc material, traumatic vertebral and spinal cord injuries, neoplasia, Duramater metaplasia, sequestra, disc herniations, myelopathies and fibrocartilaginous embolism common cause of paralysis of the limbs of dogs.

In dorso-lateral disc herniations in dogs, the main difference to humans is the simplified access with the spinal cannula to the intervertebral disc with ruptured annulus fibrosus in the latero-lateral approach with no high-risk potential, after only a small incision is required for the puncture channel. In humans, access to the discus of ventro-dorsal occurs and can create the risk of injury to internal organs by the laser beam.

Dogs with myelographic or MRJ-proven disc herniation also eliminate the risk of prolonged general anesthesia during invasive procedures (laminectomy, hemilamine ectomy), thrombosis, embolism, soft tissue trauma, stability insults, and of course time factors, as well as significant costs to the patient. A Antagonization of the patients with Antisedan (Pfizer) was possible one hour after the minimally invasive procedure and led to the rapid awakening of the dogs.

Having previously been the method of choice for myelography and discography with Isovist (Schering AG), MRJ diagnostics has now become established as the ultimate ratio of perfect discopathy diagnostics in specialized veterinary clinics and radiological institutes.

After a short anesthetic with Domitor (Pfizer) or Propofol (Essex) i.v. In addition, our patients were painlessly breastfed with segment infiltration anesthesia in the incision area and then discotomized under image converter control (C-Bogen-Phillips AG) in 2 levels (1/1 and d / v) with a 1.2 mm spinal cannula (Eickemeyer).

As in human minimally invasive laser surgery, we have found in experimental studies and in our patients a shrinking and vaporization effect as well as a decompression of the medulla oblongata and the nerve roots postoperative.

The shot number of laser beam pulses in our study at 0.2 mAS and 20 watts was 60 shots with the footswitch in 5 minutes until the shrinking effect. A carbonization could be excluded in this choice of laser parameters. Escaping vapor of the vaporized water and the SMS could be removed via a three-way valve attached to the spinal cannula via suction pump.

A further advantage in the discotomic approach with the spinal cannula under C-arm control exists after the laser vaporization (Neodymium-YAG-LASER-DORNIER MED TECH 1064 nm) with the additional possible intradiscal application of 150 I.E. Hyaluronidase (Hylase Dessan) and 0.9% Na CL solution (Fa.Selectavet) and Keltican (Trommsdorf company) of the remains of the nucleus pulposus.

After a maximum of three days, the treated and minimally invasively operated 23 dogs (Dachshund, Basset-hound, Beagle, Poodle and Bavarian Mountain Dog) were symptom free with no neurological deficits and remained after five years of follow-up except for a case of a shaggy dachshund with calcification and spondylarthrosis deformans ankylosans symptom-free.

Critical to this success rate was the rapid referral of colleagues to early radicular pain syndrome without dramatic neurological deficits in the patient.

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