

The Use of the Neodymium YAG Laser in Procto and Perianal Surgery

Ulf Christian Hellinger*

Veterinary Specialist for Small Animals and Animal Protection, Universities Berlin, Germany

***Corresponding Author:** Ulf Christian Hellinger, Veterinary Specialist for Small Animals and Animal Protection, Universities Berlin, Germany.

Received: June 07, 2019; **Published:** June 21, 2019

In small animal practice sometimes dogs, more rarely cats with pathological changes in the anal region are presented. These are often fistula formations in the entire anal region, the consequences of diseases of the anal bags, as well as tumours in the circumferential area of the hepato-gland. In the rectal and direct anal region, the occurrence of malformations, such as rectal and anal atresia in dog and cat puppies, as well as the incidence of neoplasia and rectal fistulas in adults is rather rare.

In young, weak dogs and cats, prolapse of the rectum and anus may occur more frequently, however, due to tenesmus-type diarrhea and chronic enteritis of various genesis with increased peristalsis, as well as constipation and coprosthesis or genetic weakness of the sphincter and flaccid periproctal connective tissue. Especially in the procto, anal and perianal area, minimally invasive laser surgery is indicated for these indications due to its special properties.

Due to the low swelling of the wound, the good hemostasis, the hyperthermia treatment and denaturation of tumor cells of the tumor bed, the minimal damage to the surrounding tissue and the superficial sterilization effect, the use of the Neodymium YAG laser (Dornier Med-Tech) requires the strictest physical parameters and precise indications a tangible advantage over conventional surgical methods.

Another advantage of laser surgery is optimal choice of laser parameters and as vertical as possible application and focusing of the beam path to the tissue in the rectal, anal and perianal area in the less severe necrosis of the tissue than when using an electrosurgical unit.

The rate of late dehydration was significantly reduced in the comparison of both devices according to our experience to date after the application of surgical lasers. A disadvantage compared to the conservative use of the scalpel in perianal surgery, the increased formation of fibrin in the first few days of wound healing post-operative effect, since the increased incidence of debris (fibrin) in the areas of coagulation necrosis cannot lead to a firm wound adhesion.

For scalpel incisions, the wound surface receives a multitude of opened vessels which accelerate wound healing, which may be considered a minor drawback to laser surgery, but at the end of wound healing between 10 and 12 days postoperatively, laser and scalpel are considered equivalent can be.

Here again it depends on the optimal and strict selection of the laser parameters. (Pulses, number of shots, application, mAS, W). The sewing of fine structures and the multi-layered wound closure with atraumatic suture with almost bloodless incision simplifies the anal and perianal surgery for the surgeon very much. A three-time aftertreatment of the operating area at three-day intervals with the Low Level laser (MKW-Laser Systems) has proven itself post-operatively and has impressively reduced the seam dehiscence rate.

Due to the hyperthermia effect in the tumor bed and radical intersection of perianal tumors with the neodymium-YAG laser (Dornier Med-Tech, 1064 nm), there was also a marked reduction in the tumor recurrence rate in 52 operated and follow-up dogs in the last seven years. The proportion of adenomas in our study was 73% in the histological.

Volume 4 Issue 5 July 2019

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