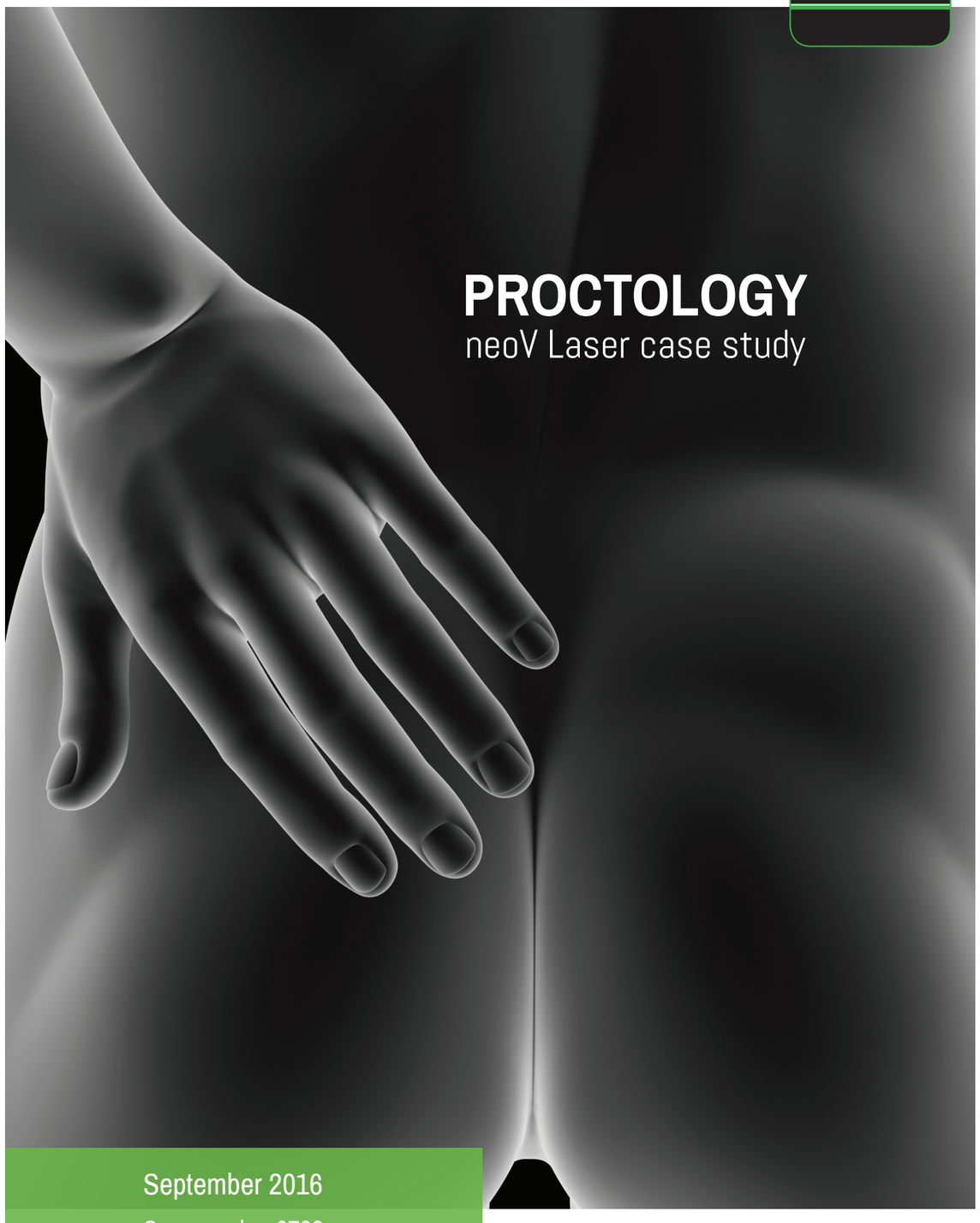

PROCTOLOGY

neoV Laser case study

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Case number 0702

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Patient Profile

The patient, a 54 years old male, first visited the clinic in December 2015 with hemorrhoidal symptoms as itching, swelling and reports about blood stains on toilet tissue, during the previous 3 years. As a result, the hemorrhoids were treated by sclerotherapy, however, no long term effect was observed. There was no additional information regarding the patient´s clinical history.
Examination showed an outside visible fibrotic prolapse of anoderma at 7 o´clock LP, with slight chronic irritation of surrounding anoderma, and a protrusion of anoderma. In rectoscopy and proctoscopy a first degree internal prolapse of rectal mucosa on ventral position, with big congested two-third degree hemorrhoidal cushions at 5 and 11 o´clock, were observed. In addition, a hemorrhoid lesion of grade 3-4 was observed at 7 o'clock.

Treatment Course

Operative intervention occurred on February 2016 under general anaesthesia as an outpatient surgical procedure. Bowel preparation was performed by administration of two carbon dioxide suppositories one hour before departure to the clinic. The course of anesthesia was started with administration of a single shot of antibiotics with cefuroxime and metronidazole, with goal of prevention of abscess or fistula creation.
The first step included injection of local anesthesia comprised of 2 ml bupivacaine with adrenaline into the anoderma with application until the dentate line at 7 o´clock providing improved postoperative pain control and protection against laser induced collateral damage. The anesthesia was spread by administrating a digital massage. A special probe for hemorrhoid treatment (CORONA Hemorrhoid Probe, neoLaser, Caesarea Israel), containing a bare fiber within a special conical glass tip was used. The special glass tip provides wide illumination of laser light, ensuring a gentle application of energy, while having a sharp distal end for easy tissue penetration. The probe was transferred through a special 14G 6cm marked metal cannula, and locked in position with a luer lock, with the glass tip protruding from the cannula. The probe was introduced through the anal prolapse under the surface of the anoderma between the skin and muscle.
The probe was then pushed forward gently until reaching the distal rectum mucosa, approximately 2 cm above the upper end of the hemorrhoidal cushion, while the red aiming beam (650nm), visible through the skin and mucosal surface, provides visual feedback and control of tip location. Diffusions of the aiming light through the mucosa provides a good indication of proximity of tip to surface and enables prevention of lasing while positioning the tip to close to the surface. The probe was connected to a 1470nm laser (neoV1470, neoLaser, Caesarea Israel), and the laser was set to a power of 6 Watts with a single pulse of 3 seconds duration. The energy was delivered in single shots of 3 seconds. During each shot, the probe was held in position while being gently rotated around its axis to ensure uniform application of light and prevention of adherence to the tissue. The probe was then pulled lightly until free from tissue, and pulled back a distance of ~3mm (while viewing marking on the cannula and tracking the location of tip). Consecutively, another pulse was administered in the same fashion, such that each 3 mm of lesion received a 3 second pulse, starting from the most distal position and pulling back to the proximal entry point.

Due to hemorrhoid cushion size, the same technique was used in two additional insertion channels of the same lesion. A total of 425 Joules of laser energy were delivered to the lesion. The same surgical technique was used to treat the hemorrhoidal piles at 5 and 11 o'clock, with a total dosage of 254 and 176 Joules respectively.
At the end of the session, the anal prolapse was removed by creating a coagulation zone with laser tip that marks the removal line. Accordingly, the power of laser was set to 10 Watts. After cutting the specimen with scissors the resulting wound was sealed by laser to provide a bleeding control and to shrink the size of wound. A total amount of 331 Joules of laser energy were delivered for removal of anal prolapse.
After completion of the surgical course, the patient was awakened and placed in recovery for oversight. 1 hour after completion of the procedure, the patient left the clinic and returned home.

Treatment Results

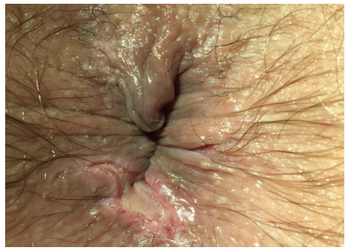
On day 1 post surgery, the patient experienced a slight pain of approximately 3 points on 10-point Visual Analog Scale (VAS). Bowel movement was completed successfully without any difficulty. Visual examination showed normal findings with a necrosis coated wound at 7 o´clock.
On day 7 post surgery the patient reported a slight bleeding after a long working day which included a significant physical effort. Slight swelling of anoderma was observed only at 11 o´clock, while wound healing process seemed successful. To support the wound healing, an oinment with enzymes of Clostridium histolyticum (Iruxol®) was prescribed. Due to successful healing process, no proctoscopic examination took place.
On week 6 post surgery the patient was very satisfied with the results and elimination of symptoms. He canceled the control appointment by phone and expressed his very high satisfaction and gratitude.

Intraoperativ Findings

First Contact

Immediately After Surgery

Day 1 After Surgery



Day 7 After Surgery

Discussion

Laser Sclerotherapy of Haemorrhoids (LSH) with additional removal of anal prolapsed or skin tags is a safe and effective alternative to common surgery of hemorrhoids with e.g. Milligan-Morgan-Procedure or Ligasure.
It is easily tolerated and managed as an outpatient surgical procedure. When following the clinical protocol developed in our clinic, specifically limiting laser power to 6 Watts, the patient may present with less post-operative pain in comparison to the other common techniques.
After LSH in our clinic, we observe a notably faster recovery and ability to resume normal activities. For the purpose of surgical prolapse removal, the surgeon may also utilize a 300-600 µm bare fiber with 10 Watts and 1470 nm instead of the LSH-probe, as this may allow for a sharper cut and faster cutting effect.