

CASE REPORT

Emergency treatment of bleeding hemorrhoids in a patient taking aspirin and clopidogrel using a 1470 nm diode laser and the ELITE minimal invasive technique

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Abstract

A 74-year-old male patient, receiving anticoagulation treatment after previous angioplasty stenting for severe coronary artery disease, was admitted to the clinic with a 2-day rectal bleeding. Clinical examination followed by an urgent colonoscopy to exclude other potential reasons for his symptoms both confirmed the diagnosis of Grade III thrombosed hemorrhoids. Due to the acute presentation of the case along with the existing medication of the patient, the decision was made to treat the problem using the expert laser intrahemorrhoidal therapy technique, which is a diode laser minimally invasive operation without the need to stop any of the patient's medication.

INTRODUCTION

The most characteristic proctological disease in the Western World is hemorrhoidal disease (HD), and it is common that its symptoms can overlap with other anorectal diseases such as abscesses, fissure, polyps, neoplasms and inflammatory bowel disease [1]. Prevailing presentation includes anal pain, irritation and/or soiling, sensation of a prolapsing lesion and most frequently rectal bleeding, which can be elicited by hard stool during defecation [2]. The risk of bleeding is substantially increased if the patient is regularly taking blood thinners as it happened with our case. As [3] support there are many methods, invasive

and less invasive, and all of them have their advantages and disadvantages. However, the use of the most recent 1470 nm diode laser with the dedicated hemorrhoid probe offers more advantages to the patient with minimal pain, rapid healing process and low recurrence rate. In the majority of the cases, HD Grades II/III are treated on an outpatient basis [4] unless any other clinical findings or risk factors dictate otherwise.

CASE REPORT

A 74-year-old, smoker, male patient came urgently on the 30 December 2018 to the Accident and Emergency Department of

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our clinic, reporting heavy rectal bleeding and intense pain during defecation for 2 days; however, there were no clinical signs of anemia. Past medical history included coronary artery disease (CAD) and angioplasty with the placement of three stents 6 years ago. As a result, he was on anticoagulation protocol with 75 mg clopidogrel and 75 mg aspirin. There were no other medications and no known drug allergies. Furthermore, the patient has never had any similar symptoms and neither has ever suffered from hemorrhoids in the past. Initial physical examination showed HD Grade III, with three nodules protruding outside the anal canal and required manual reduction; the two nodules at 3 and 7 o'clock, respectively, were thrombosed and bleeding, while there was also a smaller one at 11 o'clock. Once the pre-operative testing protocol was ready, a colonoscopy was performed to exclude any other additional anorectal diseases or possible differential diagnoses for bleeding, and the findings were normal. Due to the urgent character of the case and taking into consideration the blood thinners the patient was on, the surgeon decided, after having the informed consent of the patient, to proceed with the expert laser intrahemorrhoidal therapy (ELITE) minimal invasive technique for the hemorrhoids with the use of a 1470 nm diode laser in order to limit the potential complications including any post-operative (post-op) bleeding.

An urgent bowel preparation took place with a cleansing enema, and surgery took place under local anesthesia in the perianal region along with sedation. For prevention of an infection, a dose of IV antibiotics (metronidazole 500 mg) was administered to the patient during the procedure and it was repeated every 8 h until the patient's discharge. The ELITE was initiated with the use of a 1470 nm laser unit. A designated optic fiber with a specific conical glass tip (hemorrhoid probe) helped with the treatment of each hemorrhoidal nodule. The laser unit was set at 7.0 W/3 s and single pulse, and each nodule received the dedicated energy homogeneously in pulses for better control during the thermal seal-off of the hemorrhoidal nodules. Total operating time was 31 min. and the energy delivered to the area was 1270 J, without the need for any sutures.

Right after the end of the procedure, the patient got admitted for a precautionary overnight stay due to the possible, yet minor, risk of bleeding due to his CAD and medications.

Eighteen hours after the surgery, the pain experienced by the patient was a Level 4 on Visual Analog Pain Scale (VAPS), compared to a pre-operatively 10/10. Clinical post-op examination showed normal findings with extended tissue ecchymosis due to the large amount of energy given. The patient was discharged the day after the surgery and returned to daily activities after 5 days; he was prescribed only with paracetamol 500 mg as needed for analgesia in the possibility of pain during the next 48 h. First bowel movement occurred 30 h after the surgery without bleeding, with a slight discomfort, yet without any difficulty. During the follow-up visit that took place a week later, the reported pain dropped to 2/10 (VAPS), without any discomfort. On the second follow-up, 15-days post-op, physical examination confirmed that the hemorrhoidal piles have been substantially shrunk and the healing process was normal. Next follow-up visits took place on the 6th, 12th and 18th months after surgery, with the latter being in June 2020; there have never been any complications, any bleeding from the points of entry of the optic fiber, and of course, no signs of recurrence of the hemorrhoidal nodules.

DISCUSSION

The use of diode laser in the treatment of HD has been widely used during the past few years. De Nardi et al. [5] argued in their

research that mean bleeding and pain scores have been significantly reduced after 3, 12 and 24 months post-op in patients with HD Grades II and III. Treatment of thrombosed external hemorrhoids depends on the timing the patient is looking for help [2]. According to Naderan et al. [7], when comparing 980 nm diode laser to a classic Milligan-Morgan hemorrhoidectomy, the post-op pain as well as intra-operative bleeding are reduced, and the administration of analgesics are enough for any post-op pain. In our case, with the use of 1470 nm, we have a very localized heat generation offering a safer and more precise application due to the fact that this wavelength is highly absorbed by water compared to previous wavelengths, such as 980 nm, which were equally absorbed by hemoglobin and water. Bruscianno et al. [6] highlight this fact, emphasizing that 1470 nm diode laser results in negligible post-op discomfort and its use could be considered as a painless, minimally invasive technique for HD. The management of HD with a diode laser has a variety of advantages against other more invasive treatments when performed by a skilled surgeon: decreased operating time, minor post-op pain and discomfort, no application of sutures, quick healing times, low recurrence rates [3] and good patients' acceptance [8]. In a similar scenario, if a patient came in with thrombosed and bleeding HD Grade IV along with rectal prolapse, 'ceteris paribus', the minimal invasive technique and the use of the 1470 nm diode laser would not have been enough *per se*; in that case, a combination of surgical procedures, such as Milligan-Morgan along with the ELITE treatment, can have very promising results as it was proven through our daily practice in the past decade in the treatment of difficult and/or severely neglected cases. Consequently, the experienced general surgeon can evaluate each case and reach to a shared decision, with the patient taking into consideration the clinical picture of the latter and the advances a 1470 nm diode laser has to offer in the treatment of HD.

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CONFLICT OF INTEREST STATEMENT

None declared.

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REFERENCES

1. Gallo G, Martellucci J, Sturiale A, Clerico G, Milito G, Marino F, et al. Consensus statement of the Italian society of colorectal surgery (SICCR): management and treatment of hemorrhoidal disease. *Tech Coloproctol* 2020;**24**:145–64.
2. Ng KS, Holzgang M, Young C. Still a case of "no pain, no gain"? An updated and critical review of the pathogenesis, diagnosis, and management options for hemorrhoids in 2020. *Ann Coloproctol* 2020;**36**:133–47.

3. Jahanshahi A, Mashhadizadeh E, Sarmast MH. Diode laser for treatment of symptomatic hemorrhoid: a short-term clinical result of a mini invasive treatment, and one year follow up. *Pol Przegl Chir* 2012;**84**:329–32.
4. Bachtsetzis G, Bachtsetzis C, El Dakroury N, Athanasiou G. ELITE: a diode laser minimal invasive technique for hemorrhoids during the surgical treatment for anal fissure. *J Surg Case Rep* 2019;**2019**:rjy363.
5. De Nardi P, Tamburini AM, Gazzetta PG, Lemma M, Pascariello A, Asteria CR. Hemorrhoid laser procedure for second- and third-degree hemorrhoids: results from a multicenter prospective study. *Tech Coloproctol* 2016;**20**:455–9.
6. Bruscianno L, Gambardella C, Terracciano G, Terracciano G, Gualtieri G, Schiano di Visconte M, et al. Postoperative discomfort and pain in the management of hemorrhoidal disease: laser hemorrhoidoplasty, a minimal invasive treatment of symptomatic hemorrhoids. *Updat Surg* 2020;**72**:851–7.
7. Naderan M, Shoar S, Nazari M, Elsayed A, Mahmoodzadeh H, Khorgami Z. A randomized controlled trial comparing laser intra-hemorrhoidal coagulation and Milligan-Morgan hemorrhoidectomy. *J Investig Surg* 2017;**30**:325–31.
8. Weyand G, Theis CS, Fofana AN, Rüdiger F, Gehrke T. Laserhämorrhoidoplastie mit dem 1470-nm-Diodenlaser in der Behandlung des zweit- bis viertgradigen Hämorrhoidalleidens—eine Kohortenstudie mit 497 Fällen [Laserhemorrhoidoplasty with 1470 nm diode laser in the treatment of second to fourth degree hemorrhoidal disease—a cohort study with 497 patients]. *Zentralbl Chir* 2019;**144**:355–63.