



Daily Proctological Surgery in Office Setting: Scanning Aided CO₂ Laser, Little Devices, Approved Pathways and Hypnosis Allow Better Patient Outcome, Reduce Costs and Makes What Seems Impossible Possible

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Abstract

Background: In most cases proctological procedures are feasible and safe in an outpatient setting with an excellent cost-benefit ratio. The criticisms from proctologists are about the pain due to the administration of local anesthesia and to elevated anxiety of patients. Today it is possible to reduce patient anxiety and, with appropriate instrumentation, to reduce thermal damage and subsequent postoperative pain. Our purpose is to examine how daily proctological surgery is feasible in office setting and whether hypnosis and hypnotic communication genuinely offer an advantage to patients in terms of reduced pain and decreased anxiety during anesthesia and surgical procedures. Additionally, we aim to determine if this setting provides a favorable cost-benefit ratio.

Methods: From the 1st to the 30th of June 2023, 40 patients undergoing an “office” procedure were enrolled in the study, and divided into two groups (Group A treated with hypnosis, Group B without hypnosis). After the procedure, all patients were asked to evaluate the pain, anxiety, and efficacy of the communication before, during and after the surgery. The planned anesthesia technique was the same for all procedures and the surgery procedures varied case by case considering underlying proctological diseases.

Results: All patients who underwent hypnosis went into a trance, levitation, catalepsy and analgesia had intraoperative VAS for anxiety and pain and the ratio between perceived and effective duration of surgery significantly lower than the control group.

Conclusion: Hypnotic communication and hypnosis appear to be valuable aids for patients undergoing proctological surgery under local anesthetic in an office setting.

Keywords: Hypnosis; Hypnotic communication; Office; Proctology; Local anesthesia

Abbreviations

ASCRS: American Society of Colon and Rectal Surgeons; ERAS: Enhanced Recovery after Surgery; PRAfOS: Preoperative Risk Assessment for Outpatient Surgery; VAS: Visually Analogue Scale

Introduction

In 80% of the cases [1-3], proctological procedures are feasible on an outpatient setting, and the guidelines of the American Society of Colon and Rectal Surgeons (ASCRS) emphasize that this practice is not only safe but also has an excellent cost-benefit ratio [4]. Criticisms from proctologists regarding this setting primarily concern the fact that the administration of local anal anesthesia is painful and undesirable for the patient. Patients, on their part, experience high anxiety due to proctological conditions, as they are often painful, and the expectation of postoperative discomfort adds to their apprehension. In reality, and fortunately so, the expectations of both patients and

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proctologists are not accurate.

Our purpose is to examine how daily proctological surgery is feasible in office setting and whether hypnosis and hypnotic communication genuinely offer an advantage to patients in terms of reduced pain and decreased anxiety during anesthesia and surgical procedures. Additionally, we aim to determine if this setting provides a favorable cost-benefit ratio.

In office procedures with adequate counselling, it is possible to reduce patient anxiety. Furthermore, it is possible, with appropriate instrumentation, to be gentle on the patient's tissues, greatly reducing thermal damage and decreasing time of wound healing.

ERAS pathway [5] and the use of pre-emptive analgesia [6] also allows for adequate control of postoperative pain. Hypnotic analgesia is real and measurable [7], and its use in other fields, such as managing pain and anxiety in burn patients [8], makes us aware of its beneficial effects on the patient overall experience.

On the other hand, prior to the advent of modern anesthesia in the 1840s, hypnosis was the only way surgery could be performed comfortably [9,10].

Another undisputed advantage of the outpatient setting is that the patient can choose the date of the procedure, as the operating room, anesthetist, and pre-hospitalization are not required.

Materials and Methods

From the 1st to the 30th of June 2023, all patients undergoing an "office" procedure in the outpatient clinic where we conduct our consultations and examinations were enrolled in the study, and divided into two groups.

Group A consisted of patients treated with hypnosis, while Group B included those treated without hypnosis. The decision to use hypnosis was based on whether the surgeon was trained on performing hypnosis. However, all three surgeons involved in the study were experienced in ambulatory proctological surgery, followed the same inclusion criteria, and adhered to the same operative protocol.

The patients in Group A received hypnotic communication and subsequent hypnosis on the day of the procedure.

The operative protocol involved a thorough medical history taken during the preoperative visit to help on the decision-making process in order to schedule the patient in the appropriate operative setting (Table 1).

All patients and procedure data were archived in a prospectively maintained electronic database by the main author. The datasets generated and analyzed during the current study are available from the corresponding author on reasonable request.

If the PRAfOS is greater than 0, the anesthetist will assess the patient and decide the most appropriate setting (inpatient, day surgery or "Office", ambulatory cares). The choice of setting is not only related to the patient's comorbidities but also to the patient's clinical diagnosis (Table 2) and the availability of the equipment needed to carry on minimally invasive "Office" surgery (Table 3). All patients were given the same pre-operative information and counselling during the first visit.

Once the patients entered the outpatient department for the procedure, two different communication methods were employed: Hypnotic communication for the Group A patients and standard

communication for the Group B patients.

However, even in the Group B patients, a comprehensive description of what would happen was provided to reassure the patient, address their doubts, and alleviate their anxieties and fears. At the end of the procedure, all patients were asked to fill in a questionnaire aimed to evaluate the pain, anxiety, and efficacy of the communication before, during and after the surgery (Table 4). The planned anesthesia technique was the same in both groups, Tailored Anal Block (TAB) [11]. Hemorrhoids were treated using a tailored technique [12].

Fistulas were managed with fistulotomy, fissures with laser fissurectomy and methylene blue infiltration, condylomas, anal polyps and anal skin tags with laser vaporization. Abscesses were drained. At the end of the procedure, the surgeon completed the questionnaire in Table 5.

The time spent for the hypnotic communication and patient preparation was calculated by subtracting the actual procedure time from the total time the patient spent in the procedure room (patient admission to discharge).

Hypnotic communication

Hypnotic communication is different from adequate counseling, which is still given during the consultation and treatment. Hypnotic communication both facilitates rapport and helps elicit therapeutic, non-volitional subconscious responses in patients [13,14]. The structured approach we use is known as the LAURS (Listening, Acceptance, Utilization, Reframing, and Suggestion) of hypnotic communication [15]. Integrating yes Sets together with suggestions is useful to obtain patient collaboration for hypnotic induction.

Listening: Patients have been both listened to and understood.

Acceptance: Acceptance of the patient's reality even if it seems illogical or reckless from the clinician's point of view.

Utilization: All patients will have strengths and we can obtain patient empowerment.

Reframing: Reframing unhelpful behavior or perceptions in helpful or therapeutic behavior.

Suggestion: Patients tend to focus on and associate with what is being suggested. Aware to inadvertent negative suggestions.

Hypnosis

Hypnotic induction can be achieved using various methods with the aim of enhancing the functions of the imaginative, creative, and artistic right hemisphere of the brain to enhance the patient's suggestibility.

Once monoideism is achieved, it must be ratified by rewarding the patient for the results obtained. After completing the procedure, the patient is given an anchor, allowing them to regain that state of well-being without the operator's assistance. Hypnosis ends with reorientation and anchor verification, followed by the patient recounting their experience.

Results

All surgical procedures were regularly completed. None of the patients in either group had intraoperative or postoperative complications, and anxiolytic medications were not administered in any case.

Table 1: Preoperative Risk Assessment for Outpatient Surgery (PRAfOS).

History of ischemic heart disease
History of congestive heart failure
History of cerebrovascular disease and/or Neurological-neuromuscular disease
MET<4
Pre-operative creatinine >2 mg/dL / 176.8 μmol/L
Pre-operative treatment with insulin
Therapy with Antiplatelet Agents or Anticoagulants
BMI>35
History of Panic Attacks
Use of Antidepressants Drugs
Multi-Drug Allergy
History of COPD
History of Vasovagal Syncope
Pregnancy
Age ≥ 18 and ≤ 85
Caregiver for 24 h after Surgery

Table 2: Clinical Conditions suitable for "Office", ambulatory surgical treatment.

Hemorrhoids
Uncomplicated anal fistula
Fissure
Anal Skin Tag
Condylomas and AIN
Rectal and Anal biopsies
Removal of anal polyps
Drainage of abscess
Incision and drainage of thrombosed hemorrhoids
Treatment of pilonidal cysts

Table 3: Equipment required carrying on "office" ambulatory surgery.

Proctological chair
Scanning aided CO ₂ Laser
Monopolar or bipolar diathermy
Radiofrequency scalpel
Proctoscope
Suction

All the patients who underwent hypnosis went into a trance, levitation, catalepsy, analgesia of the hand where a venous access was inserted, and analgesia of the anus (although local anesthesia was still performed). The characteristics of the two groups are summarized in Table 6.

In Table 7, the diseases treated in the two groups and the procedures performed are listed. Hemorrhoidectomy was performed

Table 4: Pre and postoperative Questionnaire.

	Pre-operative	Intra-operative	Post-operative
	1 absence of symptoms 10 strong perceptions of symptoms	1 absence of symptoms 10 strong perceptions of symptoms	1 absence of symptoms 10 strong perceptions of symptoms
VAS Pain (1-10)			
VAS Anxiety (1-10)			
Evaluation of the effectiveness of the perioperative communication vas 1-10			

Table 5: Proctologist questionnaire.

Name, Surname, Age, Gender of the patient	
Type of procedure	
Setting	
Length of the procedure	
Time patient spent in the procedure room	
Hypnotic communication Yes/No/ Not applicable	
Amount of local anesthetic used	
Use of sedation	

Table 6: Patient characteristics.

	Group A	Group B
Number of patients	20	20
Gender	8 M-12F	8 M-12F
Age	47 (23-60)	51 (25-78)

using Sapi Med the Beak[®] and Medtronic LigaSure[™] Small Jaw Open Sealer/Divider. Mucopexy instead was performed using Sapi Med L-Bet88[®] anoscope. Reis Neto procedure was performed using a SmartXide2 C80 Laser System by DEKA and LBet-88 anoscope.

The statistical results analyzed with the student's t-test are summarized in Table 8. The gender representation in the two groups was identical. The preference for the two communication methods was comparable between the two groups.

The two graphs (Figure 1, 2) compare preoperative, intraoperative and postoperative anxiety and pain levels in the two groups.

The ANOVA test performed on preoperative and intraoperative anxiety and postoperative pain levels indicates that the reduction in Anxiety Visually Analogue Scale (VAS) from pre to post has a p<0.001 in group A and p<0.002 in group B. For Pain VAS, the p-value is not significant in group A, whereas it is 0.028 in group B.

Thirteen patients in group A reported a Pain VAS of 1, and among these, 4 did not experience anal cutaneous reflex during the injection of the anesthetic. In group B, the Intraoperative Pain VAS was 1 in 3 patients. The perceived duration of the surgery by the patient was consistently shorter than the actual duration in group A. In contrast, in group B, the perceived duration was almost always longer than the actual duration.

Communication from the medical team was evaluated as excellent in both group A and group B patients. The average time not directly dedicated to the surgical procedure but to communication and possible hypnosis did not show significant variations in the two groups. The costs for a proctological surgical procedure under DRG 158-267 in my local health service in various settings have been calculated and are reported in Table 9.

Table 7: Diseases treated in the two groups and the procedures performed are listed.

Group A		Group B	
Hemorrhoids	3 mucopexy, 1 hemorrhoidectomy 1 skin tag removal	Hemorrhoids	1 Hemorrhoidectomy
Hemorrhoids	3 mucopexy	Hemorrhoids	2 mucopexy
Hemorrhoids	2 hemorrhoidectomies 1 mucopexy	Hemorrhoids	1 reis Neto 2 mucopexy
Hemorrhoids	1 hemorrhoidectomy 1 Reis neto, 1 mucopexy	Hemorrhoids	1 Hemorrhoidectomy
Hemorrhoids	1 hemorrhoidectomy	Hemorrhoids	1 reis Neto 1 mucopexy
Hemorrhoids	1 Reis Neto 2 mucopexy	Hemorrhoids	Hemorrhoidectomy 2 mucopexy
Hemorrhoids	4 mucopexy	Hemorrhoids/fissure	1 hemorrhoidectomy 2 mucopexy Vaporization fissure 1 hemorrhoidectomy
Hemorrhoids	3 mucopexy	Hemorrhoid and fistula	1 mucopexy Vaporization fissure lay open fistula
Hemorrhoids	2 mucopexy 1 reis neto 1 hemorrhoidectomy	Hemorrhoids/fissure	1 hemorrhoidectomy 2 mucopexy Vaporization fissure
Hemorrhoids	1 hemorrhoidectomy 1 Reis Neto 1 mucopexy	Anal fistula	Lay open
Hemorrhoids/fissure	1 hemorrhoidectomy Vaporization of fissure mucopexy	Anal fistula	Lay open
Hemorrhoids/fissure	hemorrhoidectomy e Vaporization of fissure and skin tag	Anal fistula	Lay open
Hemorrhoids/fissure	3 mucopexy Vaporization of fissure	Abscess drainage	Incision and seton placement
Anal fistula	Fistulotomia	Abscess drainage	Incision and drainage
Fissure and skin tag	fistulotomy and Vaporization of fissure	Skin tag and Condyloma	Vaporization Skin tag and Condyloma
Fissure and skin tag	fistulotomy and Vaporization of fissure	Anal polyp	excision
Skin tag and Condyloma	Vaporization of fissure and condyloma	Fissure	Vaporization
Anal polyp	Removal	Fissure	Vaporization
Fissure	Vaporization	Fissure	Vaporization
Fissure	Vaporization	Fissure and skin tag	Vaporization

Table 8: Statistical results analyzed with the student's t-test.

	Group A	Group B	P value
Age	47.3 ± 11.5	51.2 ± 15.0	0.35 NS
VAS Preoperative Anxiety	4.95 ± 2.72	4.70 ± 3.05	0.786 NS
VAS Intraoperative Anxiety	1.00 ± 00	4.45 ± 3.15	<0.001
VAS Postoperative Anxiety	1.05 ± 0.22	1.80 ± 1.77	0.067 NS
VAS Preoperative pain	2.35 ± 2.50	2.35 ± 2.80	1 NS
VAS Intraoperative pain	1.75 ± 1.11	3.35 ± 2.06	0.004
VAS Postoperative pain	1.65 ± 1.18	1.50 ± 1.19	0.692 NS
Effective time /Time perceived	16.0 ± 9.3	-4.5 ± 8.6	<0.001
Total time/effective time	16.3 ± 3.9	16.0 ± 6.2	0.880 NS

Discussion

Our first aim was to test whether proctological surgery was feasible in an office setting. All procedures were performed without complications or changes on the OFFICE pathway. However, the OFFICE operational setting already begins from the previous proctological examination. The patient should in fact undergo to a non-traumatic examination that adequately prepares him for surgical treatment. This is allowed by the use of small devices. Likewise, in the operating room, the use of small devices and less traumatic surgical instruments, such as the Scanner-Assisted CO2 Laser which reduces thermal damage, allow for gentler tissue treatment, a reduction in the quantity of anesthetic used and better patient compliance.

Table 9: Costs of procedures in proctologic surgery.

Cost of Procedure for Hemorrhoid Treatment and Procedure for Anal Fistula and Pilonidal Cyst Treatment - FONTE DIBA		
	DRG 158 (other procedure to treat hemorrhoids)	DRG 267 (procedures to treat fistula, pilonidal cyst)
DS	1.371	1.029
ORD	1.538	1.270
Office	114	114
Ambulatory surgery	628	531

Pain is not solely determined by the intensity of nociceptive stimulation but also depends on psychological factors such as emotional and motivational states. Anxiety increases sympathetic system activity and the release of epinephrine, which can sensitize or directly activate nociceptors. These authors have suggested that muscle tension often present in anxious states can also cause additional pain [15].

Anxiety leads to increased environmental and bodily scanning, facilitating sensory receptivity [16,17]. To reinforce the hypothesis of this link, anxiety and pain are supported by two publications that emphasize how acting to reduce anxiety levels through anxiolytic drugs has been found to be successful in improving pain associated with medical procedures [18,19]. Suggestibility and pain appear to increase when patients are highly anxious or distressed [20,21]. However, there is another factor that comes into play in increasing pain perception, and that is attention. Distraction, defined as the

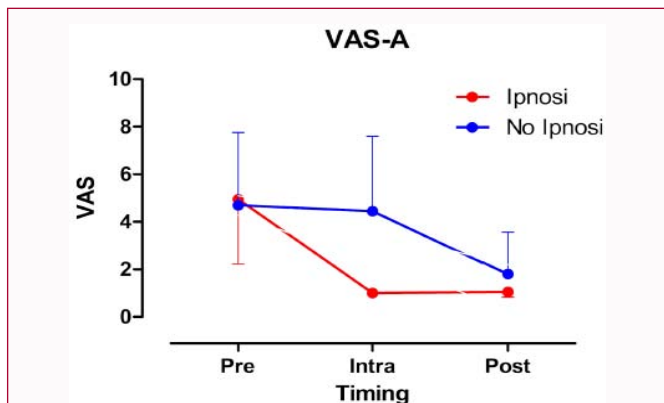


Figure 1: ANOVA test for Anxiety: Preoperative, intraoperative and post-operative anxiety levels in the two groups.

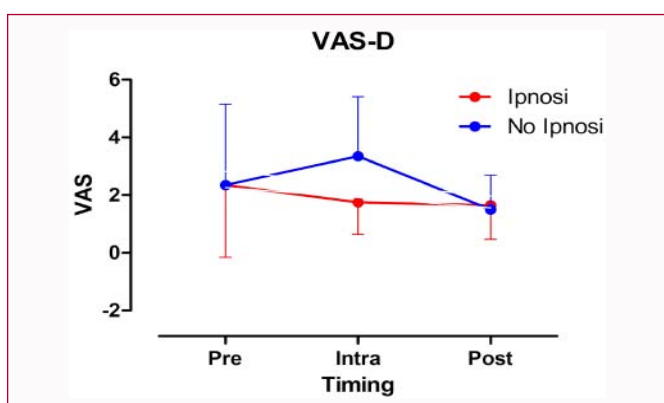


Figure 2: ANOVA test for pain: Preoperative, intraoperative and post-operative pain levels in the two groups.

process of shifting attention away from sensations produced by a noxious stimulus, generally has the effect of increasing tolerance to acute pain [22]. Conversely, pain induced by a certain stimulus can be experienced more intensely if the painful stimulus itself is the focus of attention and can also cause anxiety [23].

Arntz, Dressen, and Merckelbach [24] explicitly hypothesize that it is not anxiety that influences pain perception but rather the orientation and intensity of attention focus. Therefore, attention constitutes a third intervening variable in the relationship between anxiety and pain perception, playing a crucial role in this complex dynamic.

The influence of the attention factor could also explain why some studies find a positive correlation between anxiety and pain sensitivity, while other studies find the opposite pattern: Anxiety in empirical studies may have been confused or conditioned by attentional factors. Once the clear relationship between anxiety, attention, and pain is understood, it becomes easier to understand the results produced by hypnosis. Hypnosis, thanks to its “plastic monoideism”, can induce a state of altered consciousness in the patient, making the patient extremely relaxed and detached from reality.

The reduction in anxiety in the hypnosis group is statistically significant, and the perception by group A patients of a significantly shorter procedure confirms that the patient is detached from reality throughout the procedure. Patients indicate an approximate duration of the intervention because they are unable to quantify the actual time elapsed. The reduction in intraoperative pain was significant

($p=0.004$).

The significance of the ANOVA test on the pain trend from intraoperative to postoperative is statistically significant in group B because in this group, the average VAS value in the intraoperative phase increases compared to the baseline, while in group A, it decreases both intraoperatively and postoperatively, with reductions that are not significant.

In Group A, in practice, the pain VAS values are always low without significant variations, unlike the non-hypnosis group, which has significantly higher intraoperative pain. The effect of hypnosis on reducing perceived pain is not only related to the focus of attention and the reduction of anxiety, but sometimes plastic monoideism succeeds in inducing a real blockage of Ranvier nodes. This happened in the 4 patients (true analgesics) in whom the anocutaneous reflex was absent during perianal injections of anesthetic.

Studies by Casiglia [7,25] have shown that not only does sympathetic activation not occur in hypnosis, but different brain areas are activated, visible on functional magnetic resonance imaging, compared to patients without hypnosis who are exposed to a painful stimulus. The anterior cingulate gyrus has been shown to be one of the sites in the brain affected by hypnotic modulation of pain [26-28]. Therefore, hypnosis actively affects pain and does not reduce pain only by reducing anxiety and shifting the focus of attention.

However, anxiety still plays an important role because in group B, there were only 3 patients who reported the absence of pain during surgical and anesthetic procedures, and these had an average preoperative and intraoperative anxiety VAS of 1.3 (1 min-2 max). No patient in group A reported intraoperative pain >4, compared to 5 patients in group B who reported pain intensity greater than 4 during the procedure.

The ANOVA test used to evaluate anxiety trends demonstrates a significant reduction from preoperative to postoperative in both groups, although the intraoperative difference between group A and B is highly significant.

This means that non-hypnotic communication still allows the patient to leave the office relaxed even though they have had more stress and pain.

On the other hand, patients were satisfied with both communication methods, but those in group A will not have any memory of pain or stress during the procedure. Instead, they will remember a pleasant experience and have a greater awareness of their potential. None of the patients in either group had intraoperative or postoperative complications, and anxiolytic medications were not administered in any case.

Hypnosis does not significantly prolong the surgery time. The use of an office setting allows considerable savings per procedure because there is no access to the operating room and to the standard pathways, and the personnel involved in the office process are limited to a nurse and a proctologist. The economic saving also concerns preoperative tests which are no longer necessary in the office setting. Furthermore, the office pathway leaves operating rooms and operating room staff (such as anesthetists, nurses, etc.) free for other pathologies, thus reducing the waiting list.

Conclusion

Hypnotic communication and hypnosis appear to be valuable

aids for patients undergoing proctological surgery under local anesthetic in an office setting. Patients under hypnosis during the procedure experience minimal stress and excellent pain control, primarily during the moment of local perianal anesthesia. Non-hypnotic communication still allowed for the management of anxious patients without the need for sedation and without intraoperative complications. However, 25% of patients in group B still experienced intraoperative pain greater than 4, which can be avoided with hypnosis. Considering that hypnosis has no costs and does not significantly prolong procedure times, it is useful and, I would say, even necessary to offer it to our patients. A significant reduction in costs, along with improved outcomes and better service for the patient, should be considered, especially since waiting lists have become longer and regional budgets tighter after the COVID-19 pandemic. It would be wonderful if the healthcare sector remembered that the patient should be at the center of our attention and embraced this way of working with great enthusiasm.

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