



Tailored anal block (TAB): a new anesthesia procedure for surgical treatment of hemorrhoids in an outpatient setting

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Introduction

Currently, several operations can be performed under local anesthesia in an outpatient setting. This reduces the number of hospital admissions and is cost effective. We propose a new local anesthesia technique for the surgical treatment of hemorrhoids called tailored anal block (TAB).

Patient selection

Selected patients with symptomatic hemorrhoids were treated in the outpatient department under local anesthesia. The exclusion criteria were American Society of Anesthesiologists (ASA) class > II, Lee Index (RCRI) for cardiac risk > 1, body mass index (BMI) > 40 kg/m², age < 18 years, pregnancy, history of panic attacks. The hemorrhoidal disease was classified according to the Single Pile Hemorrhoid Classification (SPHC) [1] and to Goligher's classification. SPHC considers the number of pathological piles (N), the presentation of internal and external pile, possible presence of fibrous pile (F), the presence of subversion of dentate line or congestion of external pile (E), and the presence of skin tags (S) [1]. Surgical strategy was defined by the symptomatic pile tailored procedure (SPTT) [2]. Although every operation represents a tailored mix of different techniques, depending on the characteristics of each single pathological pile and anatomical presentation, the surgical procedures, we performed were: hemorrhoidopexy, tailored mucosectomy and hemorrhoidopexy (TM&H) [3], excision of external component, and complete semi-closed pile excision.

Technique

A solution of Ropivacaine 5 mg/ml was used. Two 20-ml syringes with 15 ml of solution were prepared. The first syringe with a 21-gauge spinal needle was used for anus elevator nerve block and Selvasekar procedure [4]. The second syringe, using a 31-gauge needle, was used for anal margin anesthesia.

Levator ani nerve block

With the patient in lithotomy position, an index finger was inserted into the anus, positioning the fingertip on the tip of the coccyx. The first syringe was used to administer 5 ml of solution over the levator muscles in the direction of the



Fig. 1 Levator ani nerve block

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Fig. 2 Selvasekar procedure

fingertip in the anus (Fig. 1) as described by Marti [5]. At this point, the anesthetic wheal was kneaded.

Selvasekar procedure

Using a proctoscope and the same syringe, 2 ml of anesthetic solution was injected 5 mm above the dentate line

Fig. 3 Results

RESULTS		
TAB efficacy	100%	No modification of the anesthetic strategy
Intra-operative complications	2,9%	5/173 (2,89%) small mucosal hematoma
Post-operative complications	1,15%	2/173 (1,15%) urinary retention
PATIENT AND SURGEON EVALUATION (VAS RESULTS)		
	Mean VAS	Note
TAB injection pain	2	VAS 0 = no pain, VAS 5 = worst pain ever
Patients intra-operative comfort value	4,5	VAS 0 = worst, VAS 5 = best
Perioperative Pain	1	VAS 0 = no pain, VAS 5 = worst pain ever
Patients post-operative evaluation	4,5	VAS 0 = worst, VAS 5 = best
TIMING		
Time of TAB execution	1.45 min	range 1.15 - 3.00 min
Speed of TAB functioning	2.00 min	range 1.30 - 2.30 min
Operation time	25 min	range 15 - 40 min

into each quarter of the submucosal layer alike to Selvasekar procedure [4] (Fig. 2). This injection process completed the anesthesia procedure.

Anal margin anesthesia

If excisions of external component were necessary, anesthetic solution was injected into the skin locally where required using the second syringe. Normally, 13–30 ml of anesthetic solution was used.

At the end of the operations we introduced a 24 French endoanal non-cuffed Foley catheter in an endoanal absorbable hemostatic sponge (Spongostan®). Foley catheter was used as a spy for any bleeding and it can also be used for endoanal washes before discharge.

Postoperative analgesia and management

All patients received Paracetamol, 1000 mg, after surgery. Ketorolac 30 mg was administered as rescue analgesia. Postoperative painkiller therapy consisted of paracetamol 1000 mg every 8 h and ketorolac 30 mg every 12 h if required (for a maximum of 48 h). After 24 h, the patient could choose to continue, reduce or stop the painkillers.

Results

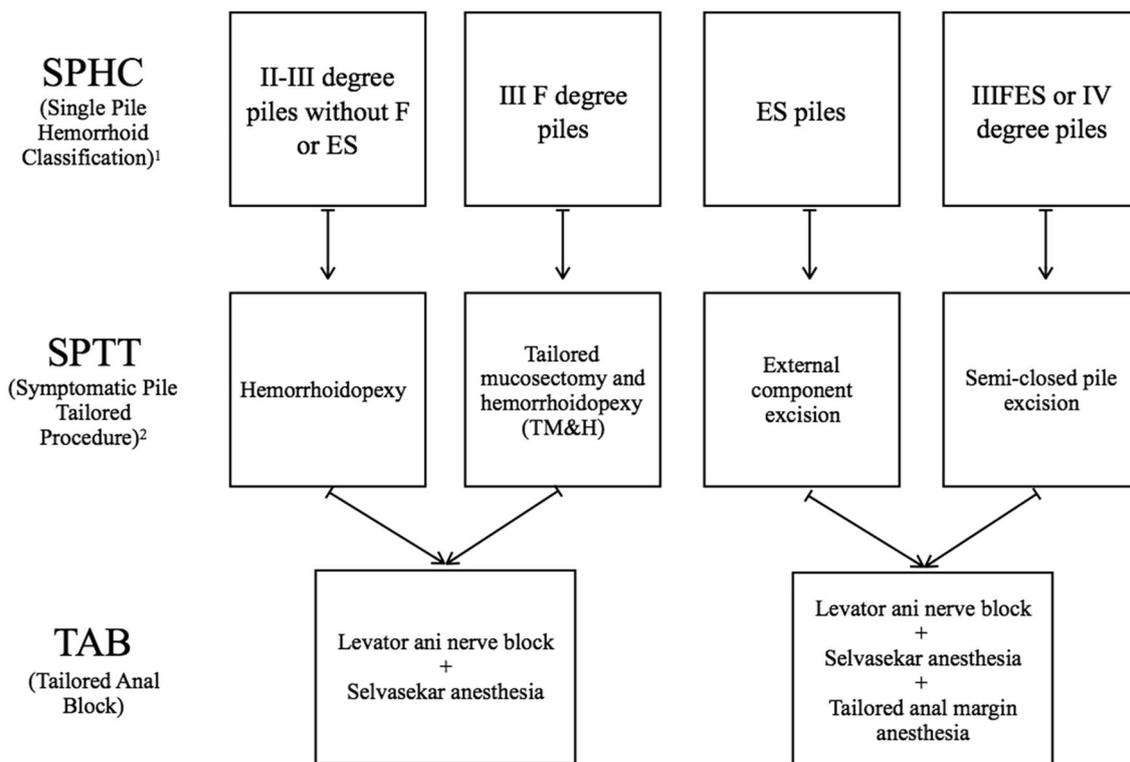
From March 2014 to December 2016, 173 patients were treated. Seventy-six (44%) were females, with a mean age of 53 (range 23–80 years). According to SPC, the total number of hemorrhoids treated was 525. Using Goligher's



Fig. 4 Levator ani nerve (red arrow)

classification, 14 patients (8%) had IV degree and 159 patients (92%) III degree hemorrhoids. The mean number of hemorrhoids treated per patient was 3.03 (range 1–4 hemorrhoids). Eighty-three (48%) patients required excisions with anal wounds. All surgical operations were performed and completed with TAB without any modification of the anesthetic strategy and no sedation was performed. Five

patients (2.9%) experienced a small intraoperative mucosal hematoma. In the intraoperative period, neither vagal syndrome nor unpredictable allergic reactions to the anesthesia occurred. In the postoperative period, neither complicated hematoma nor adverse reactions to anesthesia occurred. Two patients (1.15%) reported postoperative urinary retention in the first 24 h. The mean use of self administered painkiller was 3.9 days (range 0–30 days). Patient assessments related to the anesthetic technique were measured with a visual analog scale (VAS 0–5). The mean score for pain upon injection of TAB was 2 (VAS range 0–5). The mean VAS score for intraoperative patient comfort was 4.5 (VAS range 0–5). The mean VAS score for immediate postoperative pain was 1 (VAS range 0–5). For patient satisfaction with procedure, the mean VAS score was 4.5 (VAS range 0–5). Only 1 patient was dissatisfied. The mean time for TAB execution was 1.45 min (range 1.15–3.00 min). The mean speed of TAB functioning registered at the end of the procedure was 2.00 min (range 1.30–2.30 min). Mean operation time was 25 min (range 15–40 min). All patients were discharged within 2 h post surgery with analgesia, due to the presence of anesthetic post administration. Results are shown in Fig. 3.



¹ The single pile classification: a new tool to classify haemorrhoidal disease and the comparison of treatment results. Updates Surg. 2015

² Symptomatic pile tailored procedure. A new perspective for hemorrhoidal disease treatment. Ann Ital Chir. 2017

Fig. 5 Hemorrhoid management flowchart in an outpatient setting

Discussion

The results obtained indicate that the TAB procedure is safe and effective. The method is simple, fast, easy to learn and requires only a small volume and dose of anesthetic agent. It allows faster turnaround between cases. The first injection over the levator muscle obtains an anal relaxation due to the levator ani nerve block. This nerve (Fig. 4) lies over the levator ani muscle and provides its motor stimulation. This block allows the administration of the Selvasekar anesthesia with minimal patient discomfort, due to proctoscope insertion. Because of the Selvasekar anesthesia, additional anal relaxation with good and prolonged analgesia is achieved. In conclusion, the TAB procedure is useful in a tailored treatment of hemorrhoids in an outpatient setting (Fig. 5). The novelty of the technique consists in the combination of several local anesthesia techniques tailored to each surgical procedure .

Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval All the authors of this article declare that all procedures performed in this study, which involved human participants, were in accordance with ethical standards of institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed consent Informed consent was obtained from all individuals participants included in the study.

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