Laparoscopic nerve lysis for deep endometriosis improves quality of life and chronic pain levels: a pilot study.

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Abstract

Objectives: To assess the benefit of surgical management of patients with endometriosis infiltrating pelvic nerves in terms of pain, analgesic consumption, and quality of life (QOL).

Methods: We conducted a retrospective cohort study In an Endometriosis referral center at a tertiary care university affiliated medical center. Patients diagnosed with endometriosis that underwent laparoscopic neurolysis for chronic pain were included. Patients rated their pain before and after surgery and differentiated between chronic pain and acute crises. Patients were requested to maintain a record of analgesic consumption and to evaluate their quality-of-life (QOL).

Results: Of the 21 patients in our study 15 (71.5%) had obturator nerve involvement, 2 (9.5%) had pudendal nerve involvement and 4 (19%) had other pelvic nerve involvement. Median postoperative follow – up was of 8 months. All but 2 patients (9.6%) had significant chronic pain improvement with a mean decrease of VAS of 3.05 (±2.5). Analgesic habits changed postoperatively with a significant decrease of 66% of patients' daily consumption of any analgesics. Surgery improved QOL in 12 cases (57.1%) and two patients (9.6%) completely recovered with a high QOL.

Conclusion: Neurolysis and excision of endometriosis of pelvic nerves could results in significant improvement of quality of life.

Keywords: Deep endometriosis; nerve lysis;complex surgery; chronic pain; acute pain.

Introduction

Endometriosis is a benign condition that may affect up to 10% of women of reproductive age [1,2]. Exact prevalence is hard to determine since many patients are asymptomatic, including even cases with severe disease [3].It has been demonstrated that endometriosis might have a huge impact on the lives of affected women, their partners and their families [4]. In a previous retrospective study, 50% of women with surgically confirmed endometriosis reported a significant effect on education, work ability, relationship and social life [5].

Extrapelvic localization is reported to represent 5 % of lesions in patients with endometriosis, this rate is probably underestimated [6]. Several authors focused on clinical and pathological evidence on the involvement of pelvic nerves in women with endometriosis in recent years[7–11]. De Sousa et al. in their recent literature review reported 365 cases of patients with endometriosis and nerve infiltration, including involvement of the lumbosacral trunk in 57% and of the sciatic nerve [12] in 39% of cases. Further spread of the endometriotic lesions into the spinal nerves and even the dura of the spinal cord has been proposed to be a possible etiology of DIE [12,13].

The management of excessive endometriosis – related pain remains a medical challenge [14,15]. The benefit of surgery in endometriosis patients with pain and / or infertility has been extensively reported[16,17]. Currently, various surgical procedures may be required from uterosacral ligament resection to complex excision of nodules from bowel, urinary tract, nerves or blood vessels. These procedures

carry a relative increased risk of complications, which correlate to the extent of the lesions and their tissue penetrance [18].

Little data exist on endometriosis patients with pelvic nerve infiltration. The ESHRE guidelines recently underlined that evidence to predict endometriosis based on clinical symptoms alone is weak and incomplete and women may present to their practitioners with a variety of non-specific symptoms [15]. This statement seems particularly relevant in patients who have nervous lesions and are often under diagnosed, despite having more frequently specific neurologic complains. Possover et al. reported several cases as well as cohorts of patients that underwent laparoscopic neurolysis for severe endometriosis, and demonstrated feasibility of improvement in terms of pain scale intensity [10,19]. However, such procedures are considered to be highly advanced laparoscopic procedures and carry significant surgical risks, even in the hands of experienced surgeons[18].So far, the most appropriate treatment for patients with proven pelvic nerve infiltration is unclear, with only few authors focusing on this unique site.

The aim of our study was to assess the benefit of surgical management of patients with endometriosis infiltrating pelvic nerves in terms of pain, analgesic consumption and quality of life. (QOL)

Methods

Study design

A single center retrospective study that was performed in the Endometriosis and Chronic pelvic pain clinic of the Sheba Medical Center, Tel Hashomer (Israel). All patients surgically treated for deep infiltration endometriosis with nerves infiltration between 1/2020 and 1/2022 were included. The study was approved by the ethic committee of the hospital (number SMC – 8107 – 21) and all patients gave their consent for their data to be included.

Indications for surgery were based on the European Society of Human Reproduction and Embryology (ESHRE) guidelines and included medical treatment failure or intolerance in symptomatic patients[15]. All decisions for surgery were systematically validated by a multidisciplinary committee and cautiously discussed with the patients, especially balancing the risk and potential benefits of the procedure.

Confirmation of endometriosis diagnosis was histological if patients had lesion excision during the surgical procedure and visual if they underwent only nerve lysis.

Preoperative workup included physical examination, transvaginal ultrasonography, and pelvic neurographic MRI. The MRI protocol included 3D T2, 3D T1 sequences with and without fat saturation and gadolinium injection [20].

Selection criteria included patients who presented to our service with chronic pelvic pain of at least 6 months and signs and symptoms attributed to the affected nerve, for example in case of obturator nerve involvement, limping, and aggravation of pain in abduction of the

knee insinuating involvement of the nerve. In some cases, we had an MRI scan that reveled fibrosis or endometriosis nodules at the nerve level.

Outcomes evaluation

Patients were followed for a minimum 8 months postoperatively. A Visual Analog Scale (VAS) of 0—no pain to 10—worst pain imaginable was used for standard quantification of the pain level. Patients rated their pain before and after surgery and differentiated between chronic pain and acute episodes. Patients were requested to maintain a record of analgesic consumption before and following surgery.

The main socio-demographic characteristics of the patients were collected. Two questionnaires were handed out to patients before and after surgery: (a) a general one to assess pain localization and type of painful symptoms associated with endometriosis and (b) a specific questionnaire to assess neurological symptoms. All symptoms investigated in patients are detailed in the corresponding tables of the results.

Surgical procedure

All operations were performed by a senior surgeon experienced with endometriosis (S.C). The surgical method has been previously described by Possover et al. [21]. Briefly, the lumbosacral space was developed to permit exposure of the sacral plexus ventral to the level of the cardinal ligament, (also known as the Mackenrodt ligament) - a paired, dense band of connective tissue that

supports the uterus and upper vagina.. This space was opened laterally to the external iliac vessels and the exposure of the obturator nerve as well as the lumbosacral trunk is systematically performed in the depth of this space. By following the lumbosacral trunk distally, the superior gluteal nerve could be exposed in the supra-piriform part of the sciatic foramen as well as the upper border of the sciatic nerve itself. Suprapiriformis is located above the piriformis muscle, a flat, pear-shaped muscle deep in the buttock Elective dissection of the different branches of the internal iliac vessels and proximal transection of the obturator vessels permits good exposure of the distal part of the sacral plexus, the sciatic nerve and its endopelvic distal branches, making the further dissection of the endometriosis safe [21]. The involved nerves, obturator and pudendal (S2-3), are somatic in origin and function. Patients most frequently reported pain and limited motor function in these nerves. Consequently, laparoscopic dissection and release of endometriosis or fibrosis were performed after all other treatment modalities failed.

Surgical technique for the Sacral Nerve roots and fo the Pudendal nerve:

Sacral Nerve Root Dissection: Dissection to expose the sacral nerve roots (S1-S4) begins with a pararectal peritoneal incision medial to the ureter. The anatomic pararectal space is bluntly dissected downwards to the coccyx. This dissection is then carefully extended laterally, reaching the hypogastric fascia, which is then transected to expose the space beyond.

Pudendal Nerve Decompression: Laparoscopic decompression of the right pudendal nerve involves dissecting the ischiorectal fossa along the right internal obturator muscle. After visualizing the obturator vessels and identifying the pudendal nerve, the right sacrospinous ligament is sectioned and removed entirely. The nerve is then repositioned in its natural course and followed until it freely passes through Alcock's canal.

A standard follow-up visit was made between 4 and 6 weeks postoperatively. Following this visit, additional evaluations were determined based on symptoms reported by the patients.

Statistical analysis

Categorical variables were described as frequency and percentage and continuous variables as median and interquartile range (IQR). Wilcoxon signed-rank test and McNemar's test were used to compare pre- and post-surgical parameters. Since the sample size was limited, we also calculated the standardized difference and employed 0.2, 0.5 and 0.8 as cutoff values for small, medium, and large effect, respectively. All statistical tests were two-sided and $p<0.05$ was considered as statistically significant, although calculated in a restrained number of cases due to the size of our cohort. Statistical analysis was performed using SPSS statistical software (IBM SPSS Statistics for Windows, version 27, IBM Corp., Armonk, NY, USA, 2020).

Results

Study population

Over the last 2 years, 21 patients underwent neurolysis for deep infiltrating endometriosis in Sheba medical center. The main characteristics of the patients are displayed in table 1. Median age was 36 (IQR 27-41) and 81.0% (n = 17) of patients had undergone previous surgery for endometriosis. The non-specific symptoms of endometriosis expressed by patients who underwent surgery are detailed in supplementary Table 1. The 3 most often reported symptoms were pelvic pain (n = 14, 55.7%), dyspareunia (n = 10, 47.6%), dysuria (n = 9, 42.9%).

Neurological symptoms reported by patients are detailed in Table 2. Pain radiating to lower back (n = 10, 47.6%), urinary frequency (n = 10, 47.6%) and pain radiating to left lower limb (n = 9, 42.9%) were frequently reported by patients with neural involvement of their endometriosis.

The nerve specific symptoms were as follows:

For obturator nerve involvement, Pain radiating to one leg, leg dragging, limping and difficulty in locomotion.

For pudendal nerve, the specific symptoms were vaginal and urinary bladder pain, tenesmus and burning sensation on the outer aspect of the groin and inner thigh, and dyspareunia.

Management prior to surgery

All but 2 patients used alternative treatments including arvigo therapy (n = 1), cupping (n = 2), occupational therapy (n = 1), dietary changes (n = 2), pilates (n = 1), physical activity (n = 1), shiatsu (n = 2), osteotherapy (n = 2), reflexology (n = 3),

medical massage (n = 4), acupuncture (n = 11), hydrotherapy (n = 6), physiotherapy (n = 12).

Medical treatment including oral contraceptives improved symptoms in 28.6% (n = 6), 47.6% (n = 10) used them before and after surgery and 14.3% (n = 3) did not neither before nor after.

Among the 21 patients included, 17 had undergone surgery for endometriosis before the current procedure (81.0%). Among those, 6 (28.6%) had hysterectomy, 1 (4.8%) had a resection of rectovaginal endometriosis nodule, 2 (9.6%) had a lysis of rectosigmoid adhesions, 1 (4.8%) had ovarian cyst surgery and 1 (4.8%) had ureteroscopy and ureteral catheterization.

Surgical management

Fifteen patients (71.4%) underwent neurolysis of the obturator nerves, 2 (9.6%) lysis of proximal part of the pudendal nerves, 8 patients (38.1%) lysis of other pelvic nerves, one (4.8%) laparoscopic excision of pelvic nerves endometriotic nodule.

Median operation time was 2.15 hours. Median length of hospitalization was 3 days (IQR 3-5).The median duration of recovery was of 3 weeks (IQR 2-8). One patient experienced a postoperative complication of reduced locomotor motion due to possible nerve praxis which spontaneously waxed and waned till full recovery.

One case the patient had indwelling catheter infection and in one case we were required to instruct the patient regarding self-catheterization for three weeks post op.

Impact of surgery on pain intensity

Median follow up was8 months (IQR 6-11).Acute and chronic pain intensity in the 21 patients included before and after surgery is displayed in Figures 1 and 2. Among all patients operated, only one (4.8%) experienced no change in chronic or acute pain scale. All except2 patients (9.6%) had significant improvement in chronic pain with a median decrease of VAS of 3 (IQR 2-4). Two patients (9.6%) had no residual chronic pain following surgery.

Five patients (23.8%) had acute pain worsening following surgery, five patients (23.8%) had no difference in acute pain intensity before and after surgery and 11 patients (52.4%) had pain decrease after surgery. Acute pain following surgery decrease by a median of 1 (IQR 0-2).

Analgesic intake before and after surgery is displayed in table 3. Analgesics habits changed postoperatively with significant decrease of 66% of patients consuming such medications daily(n = 9 before versus n = 3 after, p=.031) with a tendency for more patients using them only during pain episodes (n = 2 beforehand versus n = 8 afterwards). Following surgery there was a decrease in consumption of strong opioids by 25% (n = 4 before versus n = 3 after), weak opioids by 22% (n = 9 before versus n = 7 after) and NSAIDS by 19% (n = 16 before and n = 13 after). Furthermore, intake of Gabapentin or Amitriptyline decreased by 37.5% (n = 8 before and n = 5 after). Medical cannabis consumption increased by 11% after surgery (n = 10 versus 9 before).Two patients (9.6%) had no improvement with analgesics (refractory pain) after surgery.

Impact of surgery on quality of life

QOL details following surgery are displayed in Supplementary Table 2. Surgery improved quality of life in 12 cases (57.1%) and two patients (9.6%) completely recovered with high QOL. Five patients (23.8%) considered the surgery had no impact on their QOL. After surgery, seven patients (33.3%) still reported having a low QOL.

During the follow up period, three patients (14.3%) were free of residual symptoms, nine (42.9%) experienced symptoms that were less severe, three (14.3%) perceived more severe symptoms, three (14.3%) had no improvement of their symptoms following surgery and three (14.3%) were indeterminate. Three patients indicated that their symptoms relapsed after a period of improvement, one that only some symptoms returned after a period of improvement and five patients stated that episodes were less frequent and /or of shorter duration after surgery.

Discussion

We report here a cohort of 21 patients deep nerve infiltrating endometriosis who underwent laparoscopic management with neurolysis, mostly of the obturator nerves (15 patients, 71.4%). In these subjects, medical treatment by oral contraceptives had improved symptoms in only 28.6% cases. All except 2 patients (9.6%) had significant chronic pain improvement with a mean decrease of VAS of 3.05 (±2.5). Analgesics habits changed postoperatively with a significant decrease of 66% of patients consuming them daily. Surgery improved QOL in 12 cases (57.1%) and two patients (9.6%) completely recovered.

The mechanism of neuropathic pain in patients with endometriosis is complex. Proposed hypotheses [22,23] include: (a) real damage to a nerve trunk or to peripheral nerves leading to pain in certain dermatomes, muscle weakness and sensitivity disorders; (b) nerve irritation due to inflammation causing pain projection; this pain is frequently less well characterized at the dermatome level. A potential source of neuropathic symptoms is the infiltration of the parametrium by nodules compressing or involving nerves of large diameter, inducing somatic and vegetative symptoms [7]. In our cohort, sciatic pain radiating to the lower limb, urinary frequency and pain radiating to the lower back were frequently reported. In order to improve diagnostic strategy, clinicians should be aware of possible atypical presentation of nerve infiltration. In a prospective study, Possover et al. [9] published the findings of 213 laparoscopies performed for symptoms suggestive of sciatic or sacral plexus involvement with obscure etiology. In their cohort, 27 cases of isolated endometriosis of the sciatic nerve were found, principally in its proximal

suprapiriform part, and 148 cases of infiltration of the sacral plexus, especially at the level of the S1 and S2 roots. Of note, these patients had undergone an average off our “inconclusive” laparoscopies, highlighting the need for systematic opening of the retroperitoneal space together with progressive and meticulous exploration of these nerve trunks and nerves. Roman et al. published an educational video that could help endometriosis surgeons improve their skills [24].

There are no reports of a comparison of medical and surgical treatment in appropriate prospective randomized study to treat endometriosis patients with neural involvement. In our cohort, three out of four patients still complained of pain when using hormonal treatment alone. There have been similar reports for other deep infiltrating endometriosis locations such as urinary lesions [25]. In such patients, surgery is a “last chance” procedure to ease the pain and again attain a satisfying QOL, even though some patients will not experience significant enough improvement of their QOL. In a national Australian survey that included a total of 484 responses, Armour et al. reported that 76% of the women with endometriosis used general self-management strategies within the last 6 months. Self-reported effectiveness in pain reduction was high (7.6 of 10), with 56% also able to reduce pharmaceutical medications by at least half [26]. Among the 21 patients included in our cohort, medical cannabis consumption increased by 11% after surgery (n = 10 versus 9 before): almost half patients were using cannabis following surgery. Several preclinical studies have shown the potential role of CBD to decrease the secretion of pro inflammatory cytokines such as IL-6 and TNF-α, and to increase the levels of anti–inflammatory cytokines IL-10 [27]. The other positive aspect of CBD to treat

pain-related symptoms include its anxiolytic, antidepressant, sleep modulating effects etc. [28]

In patients with nerves infiltration of their endometriosis, the benefit of surgery to decrease post operative pain has been described in several reports [10,11,21,29]. Initial approaches focused on interrupting nerves transmission through neurotomy or neurectomy. Initial evidence of the safety and effectiveness of neurectomy of the superior hypogastric plexus was reported by Plancarte et al [30] in patients with pelvic cancer pain. Subsequently the indications were expanded to include benign pathologies [31]. In a recent Cochrane review and meta-analysis by Proctor et al. [32], the effectiveness of surgical interruption of pelvic nerves for treating dysmenorrhea was analyzed. They summarized the findings of 7 controlled studies, including 3 RCT on treatment failure and complications, concluding that the procedure could benefit patients with midline pain. This raises the issue of the origin of neurogenic symptoms in these patients, and especially question the role of nerve infiltration in chronic pain. In our cohort, a large majority of patients had significant improvement of their chronic pain following surgery. As it has been correctly asserted by Soysal et al. [33], it is very difficult from the literature to ascertain the precise modality that accomplished relief of endometriosis symptomatology, since presacral neurectomy is often performed in conjunction with other procedures such as fulguration and excision of endometriotic foci [34]. According to our experience neurolysis and complete removal of endometriosis lesions should be the preferred approach whenever possible to improve symptoms and QOL. Improvement of QOL was observed in most patients following surgery in our cohort. These results are consistent with those of Roman et al. in their 52 patient cohort [11]. After a follow

up of 5 years, M. Possover reported sciatic nerve function recovery, although normal gait function may take at least 3 years including intensive physiotherapy [10].

It is important to not the risk of such operations. Firstly, irreversible nerve damage, by erroneously cutting or heating the nerve. Another injury to the nerve might be praxis i.e. reversible injury to some sensory or temperature fibers. In our series we had no such complications.

Several limits of our work should be mentioned. First, despite the retrospective nature of our study, the extent of data collected, including analgesic consumption and precise symptoms description, is rare in the previous literature. While our cohort included solely 21 patients, very little data is currently available in the literature as these high-risk procedures require specific expertise introducing a center- bias reporting results. In addition, the questionnaires were given out at the end and not prior to the surgery. Second, the post operative follow up was limited to a few months in some patients which could have contributed to two forms of bias: 1. Underestimation of the benefit of the surgery on pain evolution. Indeed, persistence of immediate postoperative pain and analgesic consumption is difficult to interpret because the surgery itself could be responsible for transient pain increase. 2. Overestimation of the benefit of the surgery on disease management: one of the main issues in patients undergoing surgery for endometriosis – associated pain is the high – risk of recurrence almost reaching 25% in deep endometriosis infiltrating patients [35]. Indeed, in our cohort, at the time of study, three patients reported that their symptoms returned after transient relief., and a further subject stated that only some symptoms recurred after a period of improvement. Similar results were reported by Roman et al. in their 52 patient's cohort [11]. Third, it is not precisely

clear how patients were chosen for surgery. It is possible that the selection process for these complex procedures could lead to an overestimation of its benefit. However, the process of patients' selection is central in the role of expert center [18]. Eventually, around 25% of patients had worsening of their pain following surgery without clear explanation and the use of standardized questionnaires such as EHP-30, SF-36 could have improved the reporting of these patients' outcomes.

Conclusion

In our cohort, neurolysis and excision of endometriotic pelvic nerves resulted in significant improvement of chronic pelvic pain VAS score analgesic agent consumption and improvement in neurological insult. These complex procedures require the expertise of senior surgeons specialized in endometriosis.

Author contributions:

Project administration, supervision, and resources: SBC, ANB, MGP, RM, YZB

Methodology: YD, EB, JB

Data acquisition: YB, NMam, NMan

Data analysis: SBC, YD, YZB

Writing original draft: YD, TM, JB, MGP

All authors reviewed the manuscript for critical intellectual content.

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Figures legend 475

Fig. 1: Chronic pain level before and after surgery in the cohort 476

Fig. 2: Acute pain level before and after surgery in the cohort. 477

Supplementary Fig. 1: Per-operative view of splanchnic nerves 478

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Patients ID	Age (years)	Number of years of symptoms evolution	Number of Pregnancies	Vaginal delivery	Cesarean Section	Previous surgery for endometriosis	Any history of other surgery	Chronic morbidities	Follow up (in month)
1	34	7	1	1	0	1	0	1	11
2	36	23	4	4	0	1	1	1	11
3	44	6	5	4	0	1	0	0	11
4	40	27	4	0	3	1	0	1	10
5	46	1	4	0	4	1	0	0	10
6	29	16	0	0	0	0	1	1	10
7	36	23	2	1	1	0	1	0	8
8	22	5	0	0	0	1	0	0	8
9	38	9	4	0	4	0	1	1	8
10	40	7	3	3	0	1	1	1	8
11	29	7	0	0	0	1	1	1	8
12	37	26	0	0	0	1	1	0	7
13	21	10	0	0	0	1	1	1	6
14	35	3	0	0	0	0	1	0	6
15	24	4	0	0	0	1	1	1	5
16	41	15	2	1	1	1	1	1	3
17	42	31	1	0	0	1	1	1	3
18	25	14	0	0	0	1	0	1	7
19	46	10	2	0	0	1	1	1	2,5
20	22	6	0	0	0	1	1	1	15
21	33	22	2	1	1	1	0	1	13

Table 1: Characteristics of the patients included.

Symptoms	Before surgery N = 21 (%)	After surgery N = 21 (%)	Number of patients with symptom "de novo" N = 21 (%)
Pain radiating to groin	8 (38.1)	4 (19.0)	0
Pain radiating to the vagina	4 (19.0)	2 (9.5)	1 (4.8)
Pain radiating to left lower limb	9 (42.9)	5 (23.8)	0
Pain radiating to the right lower limb	5 (23.8)	5 (23.8)	1 (4.8)
Pain radiating to lower digits	0	1 (4.8)	2 (9.5)
Pain radiating to lower back	10 (47.6)	7 (33.3)	1 (4.8)
Pain radiating to anus	6 (28.6)	2 (9.5)	0
Numbness in the right leg	4 (19.0)	1 (4.8)	0
Numbness in the left leg	6 (28.6)	4 (19.0)	0
Numbness in lower digits	1 (4.8)	1 (4.8)	0
Stabbing or burning sensation right leg	4 (19.0)	2 (9.5)	0
Stabbing or burning sensation left leg	3 (14.3)	3 (14.3)	1 (4.8)
Parashetsias in lower limbs	6 (28.6)	5 (23.8)	2 (9.5)
Anal and/or vaginal cramps	0	1 (4.8)	1 (4.8)
Dysesthesias in right leg	2 (9.5)	1 (4.8)	1 (4.8)
Dysesthesias in left leg	5 (23.8)	4 (19.0)	1 (4.8)
Dysesthesias in groin	0	0	0
Dragging left foot	5 (23.8)	2 (9.5)	0
Dragging right foot	2 (9.5)	0	0
Left leg tics	0	1 (4.8)	1 (4.8)

Right leg tics	0	0	0
Limping	2 (9.5)	1 (4.8)	0
Difficulty walking	8 (38.1)	4 (19.0)	0
Dorsiplantarflexion weakness	0	0	0
Weakness right leg	1 (4.8)	1 (4.8)	0
Weakness left leg	2 (9.5)	2 (9.5)	0
Urinary frequency	10 (47.6)	5 (23.8)	0
Urinary urgency	8 (38.1)	2 (9.5)	0
Urinary hesitancy	4 (19.0)	1 (4.8)	0
Urinary Incontinence	1 (4.8)	2 (9.5)	2 (9.5)
Stress Urinary Incontinence	0	0	0
Dyschezia	2 (9.5)	0	0
Fecal Incontinence	1 (4.8)	0	0
Sciatica	1 (4.8)	1 (4.8)	0
Loss of balance	0	1 (4.8)	1 (4.8)

Table 2 : Neurological symptoms before and after surgery in the patients included. 498

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Analgesics	Before surgery	After surgery	Standardized difference
Opiates	4 (19.0)	3 (14.3)	-25%
Semi opiates	9 (42.9)	7 (33.3)	-22%
NSAIDS	16 (76.2)	13 (61.9)	-18.7%
Lyrica (gabapentin)	7 (33.3)	5 (23.8)	-28.6%
Elatrol,Elatrolet (Amitrityline)	1 (4.8)	0	-100%
Medical cannabis	9 (42.9)	10 (47.6)	+11%
Takes them only during pain edisodes	2 (9.6)	8 (38.1)	+300%
Takes them daily	9 (42.9)	3 (14.3)	-66%
None	2 (9.6)	2 (9.6)	0
No improvement (Refractory) with analgesics	2 (9.6)	2 (9.6)	0

Table 3 : Analgesics consumption and habits before and after surgery in the patients included.