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POSITION PAPER

Recommendations on the management of pudendal nerve entrapment syndrome: A formalised expert consensus

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Abstract

Background: Since the development and publication of diagnostic criteria for pudendal nerve entrapment (PNE) syndrome in 2008, no comprehensive work has been published on the clinical knowledge in the management of this condition. The aim of this work was to develop recommendations on the diagnosis and the management of PNE.

Methods: The methodology of this study was based on French High Authority for Health Method for the development of good practice and the literature review

was based on the PRISMA method. The selected articles have all been evaluated according to the American Society of Interventional Pain Physicians assessment grid.

Results: The results of the literature review and expert consensus are incorporated into 10 sections to describe diagnosis and management of PNE: (1) diagnosis of PNE, (2) patients advice and precautions, (3) drugs treatments, (4) physiotherapy, (5) transcutaneous electrostimulations (TENS), (6) psychotherapy, (7) injections, (8) surgery, (9) pulsed radiofrequency, and (10) Neuromodulation. The following major points should be noted: (i) the relevance of 4+1 Nantes criteria for diagnosis; (ii) the preference for initial monotherapy with tri-tetracyclics or gabapentinoids; (iii) the lack of effect of opiates, (iv) the likely relevance (pending more controlled studies) of physiotherapy, TENS and cognitive behavioural therapy; (v) the incertitudes (lack of data) regarding corticoid injections, (vi) surgery is a long term effective treatment and (vii) radiofrequency needs a longer follow-up to be currently proposed in this indication.

Conclusion: These recommendations should allow rational and homogeneous management of patients suffering from PNE. They should also allow to shorten the delays of management by directing the primary care.

Significance: Pudendal nerve entrapment (PNE) has only been known for about 20 years and its management is heterogeneous from one practitioner to another. This work offers a synthesis of the literature and international experts' opinions on the diagnosis and management of PNE.

1 | INTRODUCTION

Pudendal nerve entrapment (PNE) is manifested by neuropathic-like pain (burning, tingling, pins and needles, electric discharges) in the sensory area of the pudendal nerve (i.e. from the anus to the distal parts of the penis or clitoris), with a mechanical factor (aggravated or triggered by sitting and relieved by standing or lying down). Sensations of an intrarectal or intravaginal foreign body can frequently be associated. The pain is mainly perineal, but it may spread beyond this area. All of these pains can also be accompanied by functional disorders of the digestive, urinary systems or even sexual functions.

Pudendal nerve entrapment can occur suddenly, most often after a contributing factor, in particular, a trip in a prolonged sitting position (cars, planes, etc.), cycling a long distance, or a surgical procedure in the perineal region without direct injury to the pudendal nerve but which can lead to neurogenic inflammation (hemorrhoidal surgery, hysterectomy and coelioscopy). In these cases, the triggering factor is not the direct cause of the pain, but of a painful decompensation of pre-existing nerve compression. PNE can also occur gradually without an identified triggering factor or by a succession of painful episodes that are resolved spontaneously.

The diagnosis of PNE has been greatly facilitated by the development of clinical criteria in 2008 (Labat et al., 2008). However, there remains a great disparity in the management of these pains depending on the teams and the techniques available. Literature on the subject is scarce and often contradictory.

The aim of this study was therefore to develop, from the existing literature and the opinion of experts, guidelines for the management of PNE.

Those concerned by these recommendations include but are not limited to, general practitioners and specialists (urologists, gynaecologists, gastroenterologists including proctologists, pain management specialist, neurologists, anaesthetists, radiologists, neurosurgeons, physical and rehabilitation doctors), as well as all health professionals (physiotherapists, midwives, osteopaths, and psychologists) who may treat patients with PNE.

These recommendations are established under the aegis of Convergences PP (CONVERGENCES IN PELVIC AND PERINEAL PAIN), an international scientific society bringing together health professionals and scientists working in the field of chronic pelvic and perineal pain. These recommendations were funded by Convergences PP.

2 | METHODS

2.1 | Development of recommendations

The methodology of this study was based on the HAS recommendations "recommendation by formalised consensus" (HAS, 2010).

2.1.1 | Steering committee

A steering committee of five experts was formed: two pain management specialists, one surgeon, one psychologist and one physiotherapist, all members of Convergences PP. They carried out bibliographic research to produce a literature review and first version of recommendations. The literature review and its synthesis was presented to the audience at the Convergences PP Congress in Madrid in November 2019 (convergenc espp.com).

Certain recommendations could not be based on the literature (lack of reference or too low level of evidence), the methodology proposed by the HAS for obtaining an expert consensus was applied.

2.1.2 | Scoring committee

Fourteen people, all specialists in the management of PNE, scored each recommendation issued by the steering committee. Each proposition had to be scored from 1 to 9, 1 corresponding to a completely inappropriate proposition, 9 to a completely appropriate proposition, and 5 to indecision.

This scoring was carried out in two rounds, thus allowing feedback to be given from the scoring group to each of its members before carrying out a second and final scoring. The recommendation was accepted in the event of strong group agreement (median of scores ≥7 and scores between 7 and 9), for all other cases (uncertain agreement or no agreement), the group was invited to explain the arguments underlying their scores.

At the end of the second round of scoring, the steering committee revised the recommendations in order to develop a consensual version.

For recommendations that cannot be based on the literature. The expert rating committee was asked twice (once in correspondence and a second time during a videoconference meeting) to develop recommendations on the following topics: diagnosis, advice and precautions.

2.1.3 | Reading group

A reading committee made up of seven healthcare professionals who are not necessarily members of Convergences PP, but who may be confronted with this pathology, not having participated in the previous steps, validated the content and form of the text as well as its applicability and its accessibility.

2.2 | Literature review

The literature review was based on the PRISMA method.

Selective research was conducted electronically on Pub-med, Cochrane, and Google Scholar in December 2019, without period restriction, but limiting searches to full texts of meta-analyses, literature reviews, controlled studies, or series of cases of more than 10 patients, published in English or French.

The search was performed using the following keywords: "pudendal neuralgia," "pudendal neuropathy," "pudendal nerve," "treatment," "surgery," "pain management," "radiofrequency," "cryotherapy," "infiltration," "nerve block," "neuromodulation," "musculoskeletal manipulation," "physiotherapy," "manual therapy" and "psychotherapy."

In the absence of correspondence with "pudendal neuralgia," "pudendal neuropathy" and "pudendal nerve," the keywords "chronic pelvic pain (CPP)" were used.

Two reviewers individually assessed the abstracts to determine the eligibility of studies (on the topic of PNE and its treatment options only).

The articles selected on the basis of these relevance criteria were then analysed by the members of the steering group in a standardised way.

2.3 | Standardised assessment according to the ASIPP assessment grid

Most of the 40 systems for graduating levels of clinical evidence do not take into account non-randomised or controlled studies (the Cochrane case for example). However, with regard to chronic pain and particularly pelvic and perineal pain, this type of design is very common, and randomised trials are too rare to generate recommendations on their own. In 2014, under the aegis of ASIPP (American Society of Interventional Pain Physicians), Manchikanti developed a new system for the graduation of trials on intervention techniques in the management of chronic pain: the IPM-QRB (Interventional Pain Management Techniques—Quality Appraisal of Reliability and Risk of Bias Assessment tool). Two evaluation grids comprising

22 items for a total of 48 points were developed, one for randomised trials (and the other for non-randomised trials (Manchikanti, Falco, et al., 2014; Manchikanti, Hirsch, Cohen, et al., 2014; Manchikanti, Hirsch, Heavner, et al., 2014).

Trials are considered high quality when the score is greater than 32/48 points, moderate quality between 20 and 31 out of 48 points, and low quality for scores below 20/48.

They, therefore, proposed a new, five-level system for classifying studies by level of evidence (Appendix S1).

3 | RESULTS

The results of the literature review and expert consensus are incorporated into 10 sections to describe diagnosis and management of PNE: (1) diagnosis of PNE, (2) patients advice and precautions, (3) drugs treatments, (4) physiotherapy, (5) transcutaneous electrostimulations (TENS), (6) psychotherapy, (7) injections, (8) surgery, (9) pulsed radiofrequency and (10) neuromodulation.

3.1 | Regarding the diagnosis of PNE

The diagnosis of PNE is based on medical history, clinical examination, and an injection test. The presence of the five Nantes criteria: four clinical criteria (neuropathic-like pain in the sensory area of the pudendal nerve, aggravated by sitting, not usually waking the patient at night, no objective sensory deficit upon clinical examination) and one invasive criterion (positive block test after injection of local anaesthetics (LA) at the ischial spine) makes it possible to suggest a PNE diagnosis (Level V).

No additional examination can confirm or rule out the diagnosis of PNE. However, we recommend performing an MRI of the pelvis and any other additional examinations deemed necessary by the clinical context in order to rule out differential diagnoses (Level V).

Perineal electroneuromyography is not specific enough to be recommended as a necessary element for the diagnosis of PNE (Level V).

3.2 | Regarding patient advice and precautions

We recommend issuing the following advice and precautions for use:

1. *Use of a doughnut-shaped seat cushion*
2. *Avoiding pain-inducing perineal pressure (cycling, motorcycling or horse riding)*
3. *Adaptation, in collaboration with an occupational therapist, of the workstation where necessary: sitting/standing office, working from home (Level V).*

3.3 | Regarding drug treatments

No specific study in pudendal neuralgia was found. However, many studies have been carried out on drug treatments for neuropathic pain with, in 2020, recommendations from the SFETD guidelines (Moisset et al., 2020) and in 2015, a meta-analysis published in Lancet Neurology (Finnerup et al., 2015).

For first-line drug treatment, we recommend monotherapy of a tricyclic antidepressant (Amitriptyline), at a low and progressive dose, or an SNRI antidepressant (Duloxetine), or an antiepileptic (Gabapantine) (Level V).

We recommend, as part of PNE management, not to use opiates as a background treatment. Their high rate of addiction or misuse and side effects on the digestive and urogenital systems mean that the benefit/risk ratio is unfavourable (Level V).

3.4 | Regarding physiotherapy

No studies on physiotherapy techniques (including transcutaneous neurostimulation techniques) were found in cases of pudendal neuralgia. Only articles concerning the management of CPP syndrome were found.

There are three literature reviews concerning physiotherapy and CPP (Berghmans, 2018; Fuentes-Márquez et al., 2018), which deal with intra-vaginal electrotherapy, shortwave diathermy, vagal stimulation, percutaneous stimulation of the posterior tibial nerve and sono-electromagnetic therapy. However, the inferior quality of the trials and the small number of publications on the subject do not allow a conclusion to be reached with a sufficient level of proof.

Out of five articles found, two from the same team (Fitzgerald et al., 2009, 2013) were multicentre, randomised and controlled trials comparing myofascial therapy and global massage therapy. The study population (47 patients in total) suffered from chronic pelvic and perineal pain in the urological sphere (chronic prostatitis). These two articles made it possible to highlight the possibility of putting in place this type of protocol with a high level of proof in the field of physiotherapy and the superior efficacy of myofascial treatment.

Only one article deals with an osteopathic manipulation technique on a single case evaluated at a six-month follow-up (Origo & Tarantino, 2019).

There exists no study on the role and effectiveness of traditional perineal rehabilitation (perineal muscle strengthening, regardless of the modalities).

If we extend the research to chronic pelvic and perineal pain, there is too much variability in the evaluation criteria as well as in the techniques evaluated to make a conclusion.

Paradoxically, functional rehabilitation is used by the vast majority of therapeutic teams.

Despite the absence of studies, the working group recommends physiotherapy for the management of patients with PNE associated with myofascial syndromes of the levator ani and/or the lateral rotator group (piriformis and obturator internus) at clinical examination. Techniques aimed at promoting muscle relaxation should be favoured (Level V).

Endocavital manoeuvres are recommended, especially in the event of hypertonia of the levator ani muscles (Level V).

3.5 | Concerning transcutaneous electrostimulation

No articles concerning transcutaneous neurostimulation in pudendal neuralgia were found.

On the other hand, studies have focused on the use of this technique in cases of pelvic perineal pain such as CPP syndrome/chronic prostatitis.

In Sikiru's study (Sikiru et al., 2008), TENS was evaluated in patients suffering from chronic nonbacterial prostatitis, in comparison with analgesics or placebo.

24 patients were thus divided into these three experimental groups and an assessment was made of their pain (location, frequency and intensity) before and after 4 weeks of treatment.

Electrodes were positioned directly above the painful area, and the stimulation was 100 Hz for 20 min per day.

The results showed a significantly superior analgesic effect of TENS compared to analgesics and placebo.

Another study, this time only observational on a longitudinal follow-up of patients suffering from vulvar vestibulitis syndrome (VVS) resistant to well-conducted, multimodal care (Vallinga et al., 2015) showed a significant reduction in pain intensity during intercourse after 4 months of TENS use. This reduction in pain intensity was accompanied by an improvement in the quality of sexual life in the medium term (average follow-up of 10 months). In this study, stimulation electrodes were applied to either side of the vulva at four points, and the stimulation treatment was 80 Hz for 90 min per day in total.

Others proposed a study comparing four groups of 30 patients suffering from chronic pelvic and perineal pain with no organic cause found (Sharma et al., 2017). Each of the groups received TENS (10 sessions of 30 min over 2 consecutive weeks), the first three groups with different stimulation frequencies, 25 Hz, 25–75 Hz and 75 Hz–100 Hz respectively, and the last placebo group received treatment by applying TENS electrodes with no electrical current. The efficacy was assessed by the change in pain intensity on the visual analogue scale (VAS) before, at 2 weeks and at 4 weeks after the start of treatment.

The results showed a significant difference in the reduction in pain intensity in the experimental groups compared to the control group. Moreover, the group that showed the best results was the high-frequency stimulation group (75–100 Hz).

In this study, the electrodes were positioned on the hypogastrium.

The studies on TENS in chronic pelvic and perineal pain all conclude that the technique is effective alone or in combination with multimodal treatment.

However, we noticed great disparity in the localisation (on either side of the pain or at a distance on the nerve or root path (Mira et al., 2015), the type and the size of the electrodes (penile circular electrodes; Schneider et al., 2013), sticky patches or percutaneous needles (Gokyildiz et al., 2012), and finally in the modes of stimulation evaluated.

The current state of knowledge does not allow a conclusion concerning TENS. However, taking into account the beneficial results obtained in other types of pelvic and perineal pain and the right tolerance described, we recommend TENS in combination with multimodal treatment, either directly by perineal stimulation (circular penile electrodes, separate from the vulva), or by stimulation on the path of the sacral roots (parasacral) or on the path of the tibial nerve (L4-L5-S1–S2–S3) (Level V).

3.6 | Regarding psychotherapy

To date and to our knowledge, there is no study on the effectiveness of psychological management of patients suffering *specifically* from PNE. However, we can dwell on the data from studies evaluating the benefit of cognitive behavioural therapy (CBT) treatment of patients suffering from dyspareunia, VVS. Even if the comparison is not correct, the results of these studies in cognitive psychology, classified as high-quality trials according to the IPM-QRB, offer a therapeutic framework to be valued in clinical practice.

Thus, in a randomised controlled study, it has been demonstrated a significantly greater effect of CBT (10 sessions of 90 min) in patients suffering from VVS compared to drug treatment (corticosteroid-based analgesic cream for 13 weeks), up to 6 months after the end of treatment (Desrochers et al., 2010). This superior effect

of CBT is significant on the level of pain (NRS scale) but also on anxiety (STAI), catastrophism (PCS-F) and sexual functioning (FSFI). A similar study found the same results from patients suffering from dyspareunia (Bergeron et al., 2016). They noted (for the CBT group and compared to the drug treatment group) a significantly greater reduction in pain during intercourse, a significantly greater improvement in sexual functions, frequency of intercourse and catastrophic thoughts. Finally, in a study comparing two psychological management techniques for patients suffering from VVS (CBT vs. supportive psychotherapy), the results indicate a superior benefit for patients who received CBT on pain (Friedrich criteria) and on sexual functions (FSFI) up to 1 year after treatment (Masheb et al., 2009).

We recommend CBT as a complement to medical management of PNE, particularly when the patient has at least one of the main psychological factors associated with the chronicisation of pain: depression, anxiety, catastrophism, feelings of injustice, kinesiophobia, post-traumatic stress disorder, perfectionism, hypervigilance, sexual dysfunction and a lack of motivation for change (Level V).

As with all chronic pain, non-pharmacological stress reduction and pain management methods (hypnosis, meditation, sophrology, EMDR, etc.) can be associated with medical treatment (Level V).

3.7 | Regarding injections

Only nine articles were retained for analysis out of the 73 found by bibliographic research (Table 1).

The literature review does not allow for a conclusion with a sufficient level of proof on the therapeutic role of injections in cases of PNE, nor on that of the possible potentiating effect of the addition of corticosteroids.

Only two articles are of high quality, one with a randomised, randomised controlled trial (Labat et al., 2017), and another with a less robust retrospective design comparing two strategies for locating the injection target. However, their conclusions are contradictory (Kale et al., 2019). In Labat et al., only 11.8% (local anaesthetics alone) and 14.3% (local anaesthetics + corticosteroids) of the patients were relieved (reduction of at least three points on NRS) by their injection at three months. No statistical difference between the two arms made it possible to show a superiority of the addition of corticosteroids compared to local anaesthetics alone ($p = 0.68$). In contrast, in Kale et al., 80% of patients presented a reduction of more than 50% (VAS) at 6 months regardless of the mode of injection (with manual or ultrasound-guided spotting, $p = 0.4$). However, the retrospective and monocentric design of Kale et al., as well as the exclusion of patients with a negative block, suggests positive results.

The other studies evaluated in this review did not have a control group and used evaluation criteria that were too diverse to draw a clear conclusion.

As suggested by Amarenco et al. (1997), taking into account their short duration of effectiveness (only 15% effectiveness at 1 year), intracanal injections were more a method of selecting surgical indications than a therapeutic weapon. The positive block test as a selection criterion for patients eligible for pudendal nerve release surgery will also be resumed and validated in a retrospective study (Waxweiler et al., 2017).

The products used for the injections differ in two ways, either there is a combination of corticosteroids and local anaesthetics, or the anaesthetics are used separately.

According to Labat et al., no statistically significant difference was observed in the results at 6 months. Out of 676 patients injected in total in all the studies ($n = 9$), 543 (80%) received LA + corticosteroids in seven studies, of which only half turned out to be effective beyond 1 month, which represents 171 patients (25% of the total population studied).

Computed tomography scanning is the most widely used (eight out of nine studies), and only one study (Kale et al.) compared manual versus ultrasound-guided localisation without showing any difference.

Finally, certain protocols propose repetition of injections, most often spaced from 3 weeks to 1 month. However, no comparative study allows for a conclusion on the interest of repeated injections.

As part of PNE and with a main objective of diagnosis, we recommend:

1. *injecting local anaesthetics,*
2. *under imaging control,*
3. *in the ischiatic spine (sacrospinous ligament),*
4. *in a patient in pain at the time of the intervention (NRS>4/10),*
5. *being able to assess pain just before and immediately after injection (within 2 h), and*
6. *keeping a written record of the assessment of the pain intensity during injection (Level V).*

The anaesthetic block is considered positive when there is an immediate reduction in pain intensity of at least 50% from the initial pain (Level V).

Data in the literature does not allow a conclusion to be drawn on the long-term analgesic effect of corticosteroid injection. We therefore cannot recommend its use for therapeutic purposes (Level II).

Apart from cases responding in a lasting way to a first injection (several weeks), it is not recommended to repeat

TABLE 1 Characteristics of the studies included in the literature review concerning injections and PNE

Reference	Technique	Injection number	Product(s)	*N*	Target	Control	Result (>1 month)	Quality level
Labat et al. (2017)	CT	1	LA versus LA + cortico	201	SL + Alcock	Yes	−	High 44/48
Kale et al. (2019)	Echo versus manual	1 + 3	LA	35	SL	Yes	+	High 32/48
Kastler et al. (2018)	CT	1	LA + cortico	95	SL + Alcock	No	+	Moderate 24/48
Le Clerc et al. (2017)	CT	3	LA	30	Impar	No	+	Moderate 22/48
Amarenco et al. (1997)	CT	3	LA + cortico	170	SL + Alcock	No	−	Moderate 23/48
Mamlouk et al. (2014)	CT	1	LA + cortico	31	Alcock	No	−	Low 16/48
Puget et al. (2009)	CT	1 + 2	LA + cortico	49	SL + Alcock	No	+	Low 19/48
Fanucci et al. (2009)	CT	3	LA + cortico	27	SL + Alcock	No	+	Low 19/48
Benson and Griffis (2005)	Electro-myography	Up to 3	LA + cortico	38	SL	No	−	Low 11/48

Abbreviations: Alcock, Alcock Canal; Cortico, Corticosteroids; CT, computed tomography; LA, Local Anaesthetics; PNE, pudendal nerve entrapment; SL, Sacrospinous ligament.

the injection procedures, even more so when the block test is negative and the injection has been carried out correctly (Level V).

3.8 | Regarding surgery

Eight articles were retained over 29 found, concerning 487 operations with an average follow-up period of 13 months (Table 2).

We noticed a lack of prospective, randomised, controlled articles. Only one (Robert et al., 2005) presents high methodological quality.

We also noticed a lack of homogeneity in the nosological framework with several series including different pathologies: post-operative neuromas of pudendal branches, truncal, or sometimes even radicular canal syndromes. A great disparity was also observed in the evaluation criteria used.

Several surgical approach techniques are described (transgluteal, transperineal approaches, laparoscopy, transgluteal endoscopic approaches, etc.), nevertheless, all are accompanied by positive results. In the absence of comparative studies, it is impossible to rank them, their choice seems above all a matter of surgical culture.

According to the authors, surgery is effective in 60–80% of cases. As described by Waxweiler et al. (2017), a rigorous selection of patients is necessary in order to exclude the effectiveness of surgery. Only patients presenting the five Nantes criteria were, in this study, responders to surgery.

Pudendal nerve release surgery is an effective treatment for PNE. Appropriate surgical candidate should be patients presenting the 5 Nantes criteria (including the positive block test as described above) and in a situation of failure despite first-line multimodal management as defined in these recommendations (Level II).

The approach technique must allow the release of the nerve trunk throughout its course. Its objective is to restore mobility to the nerve (Level V).

3.9 | Concerning pulsed radiofrequency

Only 3 articles were retained out of the 11 found (Table 3).

A total of 113 patients suffering from PNE were included in three studies aimed at evaluating the efficacy of pulsed radiofrequency under truncal anaesthesia. One study was randomised-controlled versus truncal block alone.

The efficacy of pulsed radiofrequency is described up to 10 weeks after the procedure in the Collard series and up to 1 year in the Massala series. There is a disparity in the means of evaluation.

These three studies present the same moderate level of quality.

Given the few studies concerning the use of pulsed radiofrequency in the context of PNE and potential morbidity, we cannot, as it stands, recommend its use as first-line treatment (Level V).

3.9.1 | Regarding neuromodulation

Only two articles were retained out of the 25 found (Table 4).

Peters reported 19 cases, six of which had previously failed sacral radicular neuromodulation and 18 had repeated injections. The results are in favour of pudendal neuromodulation compared to repeated injections and

TABLE 2 Characteristics of studies concerning surgery and PNE

Reference	*N*	Design	Perspective (months)	Results	Quality level
Robert et al. (2005)	32	Prospective	12	+	High 37/48
Robert et al. (2007)	158	Retrospective	12	+	Moderate
Bautrant et al. (2003)	104	Retrospective	12	+	Moderate 24/48
Erdogru et al. (2014)	27	Retrospective	6	+	Moderate 28/48
Waxweiler et al. (2017)	28	Retrospective	12	+	Moderate
Hibner et al. (2012)	10	Retrospective	23	+	Low
Beco et al. (2018)	113	Retrospective	24	+	Low 19/28
Jottard et al. (2020)	15	Retrospective	6	+	Low

Abbreviation: PNE, pudendal nerve entrapment.

TABLE 3 Characteristics of selected studies concerning radiofrequency and PNE

Reference	N	Design	Recul (mois)	Results	Quality level
Fang et al. (2018)	77	RCT NB + RFP versus NB	3	+ 92% RFP versus 36%	Moderate 28/48
Collard et al. (2019)	10	Retrospective	6	+	Moderate 26/48
Masala et al. (2014)	26	Prospective uncontrolled	12	+ 100%	Moderate 21/48

Abbreviations: NB, nerve block; PNE, pudendal nerve entrapment; RCT, randomised controlled trial; RFP, radiofrequency pulsed.

TABLE 4 characteristics of literature selected concerning neuromodulation in cases of PNE

Reference	N	Design	Perspective (months)	Results	Quality level
Buffenoir et al. (2015)	27	Prospective Uncontrolled	15	+ 74%	High 32/48
Peters et al. (2015)	19	Retrospective	0.5	+ 100% d'implantation definitive	Low 17/48

Abbreviation: PNE, pudendal nerve entrapment.

compared to radicular neuromodulation. However, the article presents a low level of proof (17/48) and insufficient follow-up with an evaluation at the end of the test phase at 15 days.

Buffenoir presented a prospective, uncontrolled bicentric study with an analysis of 27 patients. The level of proof is high (32/48) and the result is in favour of neuromodulation of the medullary cone in cases of pudendal neuralgia resistant to release surgery.

The series published are for the most part insufficient in terms of case reports, unclear in semiology when they include more patients (urogenital disorders, pelvic or abdominal pain, conditions of pain onset), and only one was done prospectively.

There is no hierarchy or calibration between, for example, a radicular, ganglion, truncal, cordal or even transdural encephalic stimulation.

The data in the literature does not allow a conclusion to be drawn on the analgesic effect of implanted neuromodulation. However, because of its proven efficacy in other indications of chronic pain, its use may be considered in the event of failure of or impossibility of surgery (Level V).

3.9.2 | Regarding emerging or confidential techniques:

Some have not yet been the subject of sufficient study, others have only been the subject of isolated publications (lipofilling, cryotherapy or even decompression of the pudendal nerve via the perineal approach using a balloon catheter).

These techniques are therefore not recommended in their current state.

4 | CONCLUSION

Many of these recommendations are based on expert consensus due to the lack of literature on the subject. it is necessary to continue research work by favouring methodologies with a high level of evidence in order to make progress in the knowledge and management of PNE.

CONFLICT OF INTEREST

A conflict of interest agreement was requested from each of the participating experts. No conflicts of interest were declared by the authors.

AUTHORS CONTRIBUTIONS

All authors contributed to this work by participating either in the steering of the writing of the literature reviews and the review of the final version, or in the consensus-building process and the review of the final version, or in the review of the final version and in making substantial corrections and additions.

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