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RESEARCH ARTICLE

The Effect of Adding Steroids on the Efficacy of Pulsed Radiofrequency Treatment in Pudendal Neuralgia: A Retrospective Comparative Study

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ABSTRACT

Background: Pudendal neuralgia is a challenging cause of pelvic neuropathic pain involving the pudendal nerve distribution. Pulsed radiofrequency ablation is increasingly used as a minimally invasive treatment; however, outcomes remain variable and adjunctive strategies are often considered. Corticosteroids may improve analgesia by lowering neurogenic inflammation, yet evidence supporting additional benefits with pulsed radiofrequency ablation is limited. We retrospectively compared ultrasound-guided pulsed radiofrequency ablation combined with a local anesthetic versus the same procedure with the addition of triamcinolone, evaluating pain intensity and depressive symptoms.

Materials and Methods: We retrospectively reviewed patients diagnosed with pudendal nerve neuropathy who were treated at the Çanakkale Onsekiz Mart University Hospital pain outpatient clinic between January 2021 and June 2025. Group 1 received pulsed radiofrequency ablation plus a local anesthetic, and Group 2 received triamcinolone in addition to that. The Numeric Rating Scale (NRS) was used to measure pain pre- procedure, 1-hour post-procedure, and at 1 and 3 months. The Beck Depression Inventory (BDI) was used to measure depressive symptoms pre-procedure and at 3 months. Outcomes were compared between groups at each follow-up time point.

Results: The demographic characteristics were similar across groups. After 3 months, BDI scores decreased significantly in both groups, with the triamcinolone group having lower scores (Group 1: 14.5 [IQR 11–16.5] vs. Group 2: 8 [IQR 7–8.5], $p < 0.001$). The baseline NRS scores were similar (Group 1: 6.0 [5.0–6.5] vs. Group 2: 6.0 [6.0–7.0], $p=0.612$). Although the NRS scores were similar following the procedure ($p=0.602$), Group 2 had lower pain scores at 1 month (4.0 [3.0–4.5] vs 3.0 [2.0–4.0], $p<0.001$) and 3 months (5.0 [4.0–6.0] vs 3.0 [2.0–3.0], $p<0.001$). No major procedure-related complications were observed.

Conclusion: Adding triamcinolone to transgluteal pulsed radiofrequency ablation with local anesthetic may offer a minimally invasive alternative for patients with pudendal neuralgia experiencing refractory symptoms despite conservative therapy. However, randomized controlled trials are required to confirm effectiveness and safety and to define which patient subgroups may benefit most, including those who are poor candidates for surgery due to comorbidities.

Keywords: Pudendal Neuralgia, Radiofrequency Ablation, Steroids, Ultrasonography, Chronic Pain

Introduction

One of the nerves most frequently reported as being associated with pelvic neuropathy is the pudendal nerve. It is known that this nerve primarily provides sensory innervation to the perineum and external genital organs and supplies a certain degree of innervation to the external urethral and anal sphincters.[1] Pudendal nerve entrapment (PNE) is characterized by neuropathic pain in the sensory distribution of the pudendal nerve, which is exacerbated by sitting and relieved by standing or lying down. The pain is most commonly perineal but may also radiate beyond this region.[2]

Although it is generally associated with prior surgery or trauma, pudendal neuropathy has also been suggested as being related to entrapment syndromes, most likely due to the close anatomical relationship of the pudendal nerve with the sacrospinous and sacrotuberous ligaments.[3]

Analgesics or neuroactive medications, as well as treatments such as pudendal nerve block and surgical decompression, are ineffective in more than 50% of patients. The treatment of neuropathic pain, and pelvic neuropathy in particular, is often multimodal because of both the variety of available treatment modalities and the inconsistent therapeutic responses observed among these patients. Medical therapy is generally the first-line approach, with medications targeting neuropathic pain such as gabapentin and tricyclic antidepressants. Beyond these options, conventional subsequent treatments offered to patients include injections and surgery.[4,5]

Experience with steroid injections has demonstrated limited and temporary symptom relief, particularly with repeated injections, which has prompted the investigation of additional treatment modalities. Studies have shown improvements with both cryoablation and radiofrequency ablation (RFA). A potential alternative is pulsed radiofrequency ablation (pRFA). Peripheral neuropathy is thought to arise, at least in part, from the activation of inappropriate pain impulses within the pathological nerve. pRFA essentially produces a neuromodulatory effect by recalibrating the nerve's ion channels and interrupting inappropriate pain signaling; however, it does not result in complete nerve destruction or impairment of motor function. Recently, ultrasound-guided pudendal nerve block and pRFA techniques have been widely used.[6,7]

On the other hand, psychological problems such as anxiety, depression, hopelessness, and emotional instability are also commonly observed in patients with pudendal neuropathy who have chronic neuropathic pain and do not experience relief from any of the applied treatments.

This retrospective study aims to comparatively evaluate the effects of ultrasound-guided pRFA with the addition of a local anesthetic versus the combination of pRFA + local anesthetic + triamcinolone on both pain levels and depressive symptoms.

Materials And Methods

RESEARCH METHOD

Study Design:

This study was planned as a retrospective descriptive study. It was conducted through a retrospective review of the follow-up and treatment processes of patients who presented to the pain outpatient clinic of Çanakkale Onsekiz Mart University Health Practice and Research Hospital between January 2021 and June 2025 and were diagnosed with pudendal nerve neuropathy. The study was carried out after obtaining approval from the Çanakkale Onsekiz Mart University Non-Interventional Clinical Research Ethics Committee, dated 08.10.2025, with protocol number 2025-330.

Participants and Inclusion Criteria:

The size of the study population was determined based on the number of patients in the investigated group who met the inclusion and exclusion criteria within the specified time period.

The inclusion criteria of the study were as follows:

1. Patients met the four essential clinical criteria for the diagnosis of pudendal neuralgia (PN) according to the Nantes criteria:

a. Pain in the pudendal nerve territory (from the anus to the penis or clitoris);
b. Pain is predominantly experienced while sitting;
c. Pain generally does not disturb sleep at night;
d. No objective sensory deficit;

2. Use of analgesic medications for at least 2 weeks, with a Numeric Rating Scale (NRS) score still ≥ 4;
3. A reduction of more than 50% in the NRS score compared to baseline after diagnostic pudendal nerve block (PNB);
4. Age between 18 and 85 years.

The exclusion criteria of the study were as follows:

1. Participation in other clinical studies within the last 3 months;
2. Presence of nerve injury or central nervous system injury;
3. Active or recurrent urethral infection (more than five episodes within the last 12 months);
4. Coagulation disorders or use of anticoagulant therapy;
5. Previous receipt of nerve block or pulsed radiofrequency (PRF) treatment;
6. Patients who experienced procedure-related complications.

TREATMENT GROUPS AND APPLICATION METHODS

In this study, patients who met the inclusion criteria and did not meet any of the exclusion criteria within the specified dates were retrospectively reviewed. Accordingly, a total of 32 patients were included in the study. Sixteen patients received only pulsed radiofrequency and local anesthetic treatment and were defined as Group 1. The remaining 16 patients received a steroid (triamcinolone) injection in addition to pulsed radiofrequency and local anesthetic treatment and were classified as Group 2. All interventional procedures in our clinic were performed according to standardized protocols under standard monitoring conditions. According to these protocols:

In the procedures performed in Group 1 patients, the pudendal nerve was accessed via a transgluteal approach under ultrasound guidance, and the location of the nerve was confirmed by motor and sensory stimulation. Pulsed radiofrequency was applied at 42°C for 240 seconds using an Abbott IonicRF™ Generator (Plymouth, MN 55442, USA) (Figure 1). Motor stimulation at 2 Hz produced a similar pain pattern at 1.0 V. Pulsed radiofrequency ablation was performed at 42°C for 240 seconds with an impedance of 240 ohms. Following the ablation procedure, 5 mL of 0.25% bupivacaine was administered. The needle was withdrawn, and the absence of complications was confirmed. After the injection, the sensory block was evaluated using the pinprick test.

In patients in Group 2, the pudendal nerve was accessed via a transgluteal approach under ultrasound guidance, with motor and sensory stimulation applied to confirm the anatomical localization of the nerve. Subsequently, pulsed radiofrequency was applied at 42°C for 240 seconds using an Abbott IonicRF™ Generator (Plymouth, MN 55442, USA) (Figure 1). After the procedure, 5 mL of 0.25% bupivacaine and 40 mg of triamcinolone were injected. The needle was withdrawn, and the absence of any procedure-related complications was confirmed. Following the injection, the sensory block was evaluated using the pinprick test.

In the review conducted through the hospital information system and patient records, NRS scores of patients evaluated within the scope of the routine follow-up protocol applied in our clinic were recorded and analyzed at four time points: pre-procedure, 1 hour after the procedure, at the 1st month, and at the 3rd month. In addition, in accordance with standard clinical practice, Beck Depression Inventory (BDI) assessments were performed pre-procedure and at the third month, and data from these two time points was analyzed in this study.

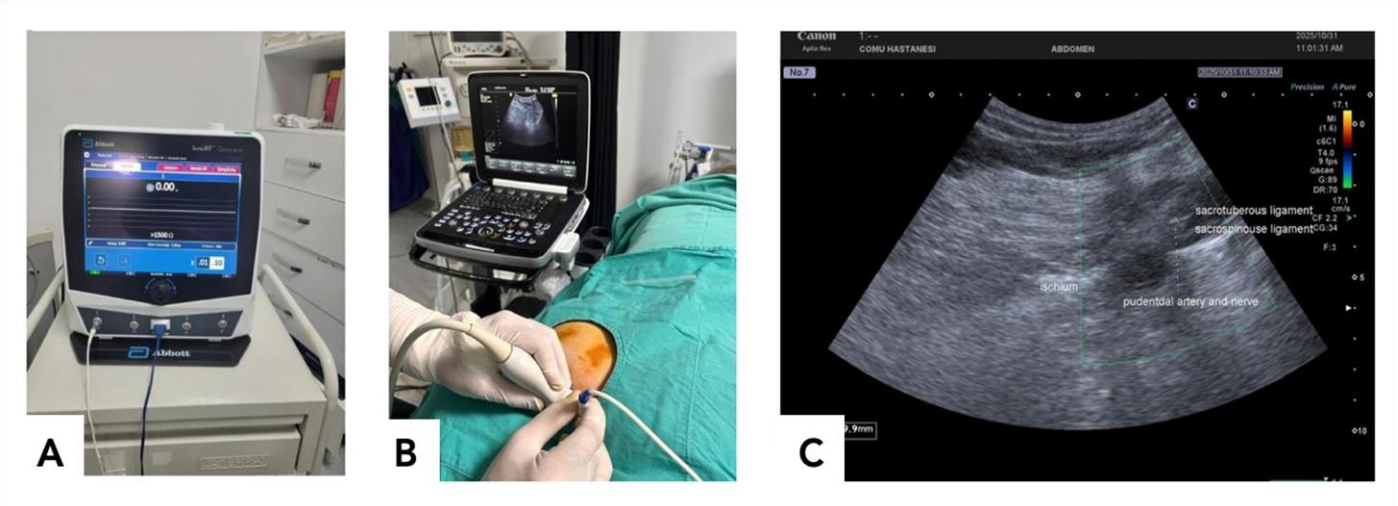


Figure 1. (A) Radiofrequency generator used for the procedure. (B) Intra-procedural view of the ultrasound-guided transgluteal approach during needle placement. (C) Representative ultrasound image demonstrating relevant anatomical landmarks.

STATISTICAL ANALYSIS

The distribution characteristics of the data were evaluated using the Shapiro–Wilk test. Continuous variables with a normal distribution were reported as mean ± standard deviation (SD), whereas non-normally distributed variables were reported as median [interquartile range (IQR), 25–75]. Categorical variables were presented as frequencies and percentages (%). For comparisons between two independent groups, the Student's t-test was used for normally distributed data, and the Mann–Whitney U test was used for non-normally distributed data. The Pearson chi-square test was applied for comparisons of categorical variables.

For comparisons of measurements at different time points within the same group, the Wilcoxon signed-rank test was used due to non-parametric data structures. For pairwise comparisons of repeated measurements over time, the Bonferroni correction was applied to adjust for multiple testing, and the level of statistical significance was accepted as $p < 0.0125$. All analyses were performed using IBM SPSS Statistics for Windows, Version 26.0 (IBM Corp., Armonk, NY, USA), and the threshold for statistical significance was set at $p \leq 0.05$.

Results

The groups were demographically similar (Table 1). There were no significant differences in age, BMI, disease duration, or ASA physical status classification between Group 1 and Group 2 (all $p > 0.05$).

When BDI scores were evaluated, the mean pre-procedure score was 24.1 ± 5.5 in Group 1 and 21.3 ± 5.3 in Group 2, and the difference between the groups was not statistically significant ($p = 0.149$). However, a significant decrease in BDI scores was observed in both groups at 3 months after the procedure. The median BDI score was 14.5 [IQR: 11–16.5] in Group 1 and 8 [IQR: 7–8.5] in Group 2, and this difference between the groups was statistically significant ($p < 0.001$—Table 2). To further compare the magnitude of improvement in depressive symptoms between groups, we calculated the change in BDI from baseline to 3 months (ΔBDI) for each patient and compared ΔBDI between the two groups using the Mann–Whitney U test. Although the 3-month BDI scores were significantly lower in Group 2, the magnitude of change from baseline to 3 months (ΔBDI) did not differ significantly between the groups (Mann–Whitney U test, $p = 0.117$; exact $p = 0.119$).

When NRS scores were evaluated, pre-procedure median values were similar in both groups: 6.0 [5.0–6.5] in Group 1 and 6.0 [6.0–7.0] in Group 2, with no statistically significant difference ($p = 0.612$). After the procedure, marked reductions in NRS scores were observed in both groups, and the differences

between the groups were not statistically significant ($p = 0.602$). However, at the 1-month evaluation, the median NRS score was 4.0 [3.0–4.5] in Group 1 and 3.0 [2.0–4.0] in Group 2, and this difference was statistically significant ($p < 0.001$). At the 3-month follow-up, pain levels were 5.0 [4.0–6.0] in Group 1 and 3.0 [2.0–3.0] in Group 2, and this difference was also found to be statistically significant ($p < 0.001$—Table 3). To compare the magnitude of pain reduction between groups, we calculated the change in NRS from baseline to 3 months (ΔNRS) for each patient and compared ΔNRS between the two groups using the Mann–Whitney U test. The change in NRS differed significantly between Group 1 and Group 2 ($U = 46.5$, $Z = -3.198$, $p = 0.001$; exact $p = 0.001$), indicating a greater reduction in pain intensity in Group 2.

To evaluate time-dependent changes within groups, BDI and NRS scores were analyzed separately for each group using the Wilcoxon signed-rank test (Table 4).

Table 1. Baseline characteristics of the study groups

	Group 1 (n = 16)	Group 2 (n = 16)	*p*-value
Age (years), mean ± SD	53.5 ± 9.2	49.2 ± 7.2	0.149
BMI (kg/m²), mean ± SD	27.5 ± 2.2	27.4 ± 4.8	0.963
Duration of disease (months), mean ± SD	41.1 ± 13.6	37.6 ± 9.6	0.406
ASA Classification, n (%)			0.881
ASA I	3 (18.8%)	2 (12.5%)	
ASA II	9 (56.2%)	10 (62.5%)	
ASA III	4 (25%)	4 (25%)	

Student's t-test, Pearson chi-square test

Abbreviations: BMI: Body mass index; kg: kilogram; m²: square meter; ASA: American Society of Anesthesiologists; SD: Standard deviation.

Group 1: Consists of patients who underwent pulsed radiofrequency ablation and local anesthetic application only to the pudendal nerve.

Group 2: Included patients who underwent pulsed radiofrequency ablation and local anesthetic application to the pudendal nerve in addition to steroid injection.

Table 2. Beck Depression Inventory scores at baseline and 3 months by group

	Group 1 (n = 16)	Group 2 (n = 16)	*p*-value
BDI – pre-procedure, mean ± SD	24.1 ± 5.5	21.3 ± 5.3	0.149
BDI – 3rd month, median (Q1-Q3)	14.5 [11–16.5]	8 [7–8.5]	< 0.001

Student's t-test, Mann–Whitney U test

Abbreviations: BDI, Beck Depression Inventory; SD, Standard deviation; Q1–Q3, 25th–75th percentiles.

Group 1: Consists of patients who underwent pulsed radiofrequency ablation and local anesthetic application only to the pudendal nerve.

Group 2: Included patients who underwent pulsed radiofrequency ablation and local anesthetic application to the pudendal nerve in addition to steroid injection.

Table 3. Comparison of NRS pain scores between groups over time

	Group 1 (n = 16)	Group 2 (n = 16)	*p*-value
NRS – pre-procedure, median (Q1-Q3)	6.0 [5.0–6.5]	6.0 [5.0–6.0]	0.606
NRS – post-procedure, median (Q1-Q3)	2.0 [2.0–2.0]	2.0 [1.5–3.0]	0.587
NRS – 1st month, median (Q1-Q3)	4.0 [3.0–4.0]	2.5 [2.0–3.0]	< 0.001
NRS – 3rd month, median (Q1-Q3)	4.0 [4.0–5.0]	3.0 [2.0–3.0]	< 0.001

Mann–Whitney U test

Abbreviations: NRS, Numeric Rating Scale; Q1-Q3, 25th–75th percentiles.

Group 1: Consists of patients who underwent pulsed radiofrequency ablation and local anesthetic application only to the pudendal nerve.

Group 2: Included patients who underwent pulsed radiofrequency ablation and local anesthetic application to the pudendal nerve in addition to steroid injection.

Table 4. Within-group pairwise comparisons of NRS and BDP scores over time

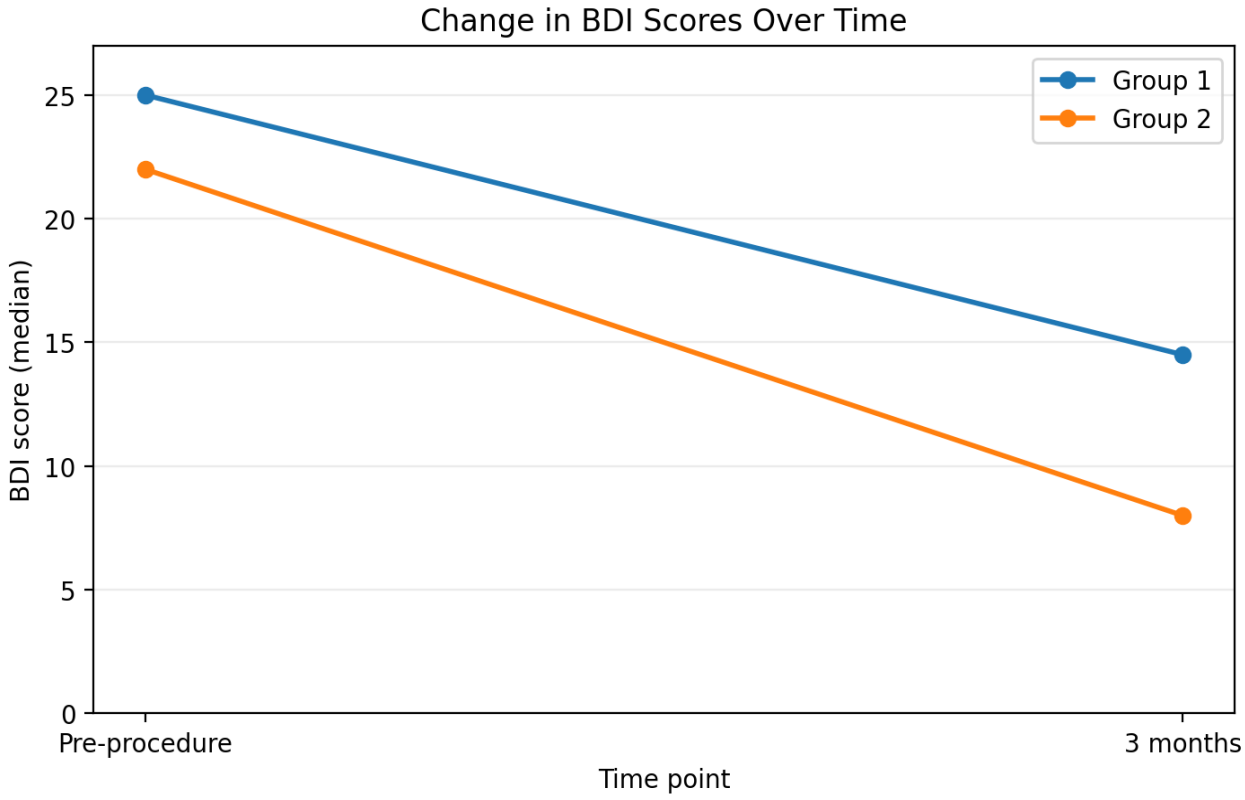
Pairwise comparison	Z	p	p_adj (×6)
Group 1 (n = 16)			
NRS Post-procedure – Pre-procedure	-3.558	<0.001	0.002
NRS 1 month – Pre-procedure	-3.482	<0.001	0.003
NRS 3 months – Pre-procedure	-3.360	<0.001	0.005
NRS 1 month – Post-procedure	-3.400	<0.001	0.004
NRS 3 months – Post-procedure	-3.542	<0.001	0.002
NRS 3 months – 1 month	-2.138	0.033	0.195
BDI 3 months – BDI pre-procedure	-3.409	0.001	
Group 2 (n = 16)			
NRS Post-procedure – Pre-procedure	-3.543	<0.001	0.002
NRS 1 month – Pre-procedure	-3.574	<0.001	0.002
NRS 3 months – Pre-procedure	-3.546	<0.001	0.002
NRS 1 month – Post-procedure	-2.077	0.038	0.227
NRS 3 months – Post-procedure	-1.386	0.166	0.995
NRS 3 months – 1 month	-0.277	0.782	1,000
BDI 3 months – BDI pre-procedure	-3.518	<0.001	

Within each group, comparisons were performed using the Wilcoxon signed-rank test (two-sided).

For NRS, Bonferroni adjustment for all pairwise comparisons across four time points (6 comparisons) was applied as p_adj = min (p × 6, 1.00).

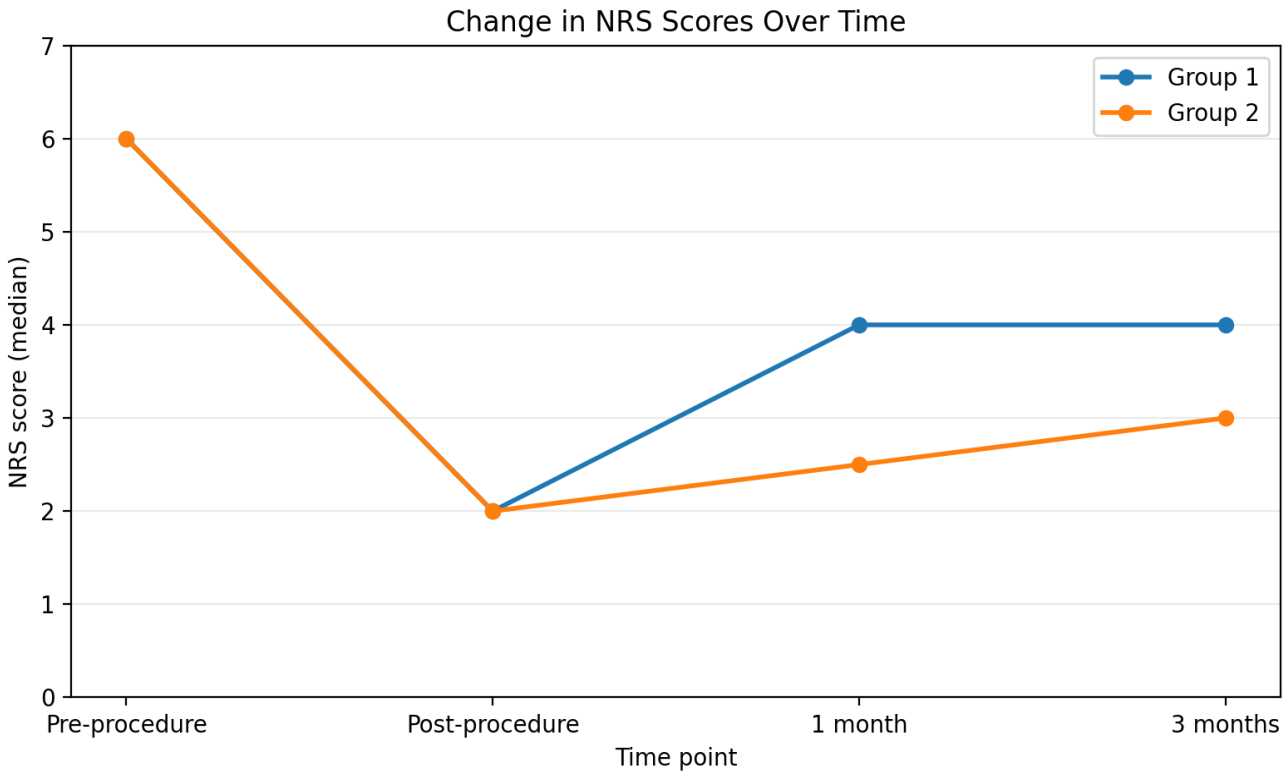
Abbreviations: NRS, Numeric Rating Scale; BDI, Beck Depression Inventory; p_adj, Bonferroni-adjusted p value.

In both groups, a statistically significant decrease in BDI scores was observed at the 3-month follow-up compared with pre-procedure values. In Group 1, the median BDI score decreased from 24 at baseline to 15 at the third month ($p < 0.001$). In Group 2, the baseline median score was 21 and showed a significant reduction to a median value of 8 at the third month ($p < 0.001$—Graphic 1).



Graphic 1. Change in Beck Depression Inventory (BDI) scores from baseline to 3 months. Group 1: pulsed radiofrequency ablation + local anesthetic, Group 2: pulsed radiofrequency ablation + local anesthetic + adjunct steroid injection.

When evaluated in terms of NRS scores, a statistically significant reduction in NRS scores was observed in both groups compared with pre-procedure values ($p < 0.001$). In Group 1, the median NRS score was 6.0 [5.0–6.5] before the procedure, decreased to 2.0 [2.0–2.0] immediately after the procedure, increased to 4.0 [3.0–4.0] at the 1st month, and reached 4.0 [4.0–5.0] at the 3rd month. In Group 2, the pre-procedure NRS score was 6.0 [5.0–6.0], which decreased to 2.0 [1.5–2.0] after the procedure, increased to 2.5 [2.0–3.0] at the 1st month, and then reached 3.0 [2.0–3.0] at the 3rd month. Unlike Group 2, Group 1 showed a statistically significant increase in NRS scores in the first month compared with the values recorded immediately after the procedure (Graphic 2).



Graphic 2. Change in Numeric Rating Scale (NRS) pain scores over time. Group 1: pulsed radiofrequency ablation + local anesthetic, Group 2: pulsed radiofrequency ablation + local anesthetic + adjunct steroid injection.

Discussion

This study demonstrated that the application of pulsed radiofrequency ablation combined with triamcinolone and a local anesthetic in the treatment of refractory chronic pudendal neuropathy resulted not only in a significant reduction in pain levels but also in improvement in Beck Depression Inventory scores.

In pudendal nerve block procedures, accurate localization of the nerve is a critical factor for a successful intervention. Recently, fluoroscopy-guided and ultrasound-guided pudendal nerve blocks/interventions have been used. The ultrasound-guided approach is technically superior to other methods in terms of accurate identification of the pudendal nerve, absence of radiation exposure, and feasibility of bedside application.[8] With the advancement of imaging technologies, it has been reported that ultrasound (US) can identify the pudendal nerve in approximately 75% of patients. Ultrasound-guided pudendal nerve block is considered an easy-to-perform, patient-comfort–enhancing, and promising technique compared with other approaches.[9]In our study, using a transgluteal approach, the pudendal nerve was localized by moving a low-frequency ultrasound probe in the cephalad–caudal direction and visualizing the ischium, pudendal artery, and the sacrospinous and sacrotuberous ligaments (Figure 1). Color Doppler imaging was used to visualize pulsations of the pudendal artery.

Sensory stimulation was also employed as a complementary approach. Pulsed radiofrequency is a successful treatment option for patients with pudendal neuropathy who do not respond to noninvasive treatment modalities or pudendal nerve blocks. In a previous study, 79% of patients who underwent pRFA described their condition as "much improved" at the 3-month follow-up. After repeated pRFA, a high long-term success rate of 89% was reported.[10] In a randomized controlled study conducted by Fang et al., patients were divided into two groups: those who received pRFA and those who underwent nerve block alone. The authors

allocated 77 patients with pudendal neuropathy into two groups: 38 who received a pudendal nerve block (NB) plus pRFA and 39 who received a nerve block with local anesthetics only. After a 3-month follow-up, the success rate in the pRFA-treated group was reported to be 92.1%. The success rate in the group that received nerve block alone was only 35.9%.[11] In 2014, Masala et al. conducted a prospective study involving 30 patients with pudendal neuralgia refractory to other conservative treatments. Among the 26 patients who underwent computed tomography–guided PRF treatment, pain levels measured by VAS were markedly reduced. Compared with pre-treatment values, patients experienced pain reductions of 83% and 79% at 6 months and 1 year after the procedure, respectively.[12] Similarly, in 2016, Hong et al. applied ultrasound-guided PRF in two patients with pudendal neuralgia and reported that pre-treatment VAS scores decreased from 8 to 2 and 3 at 3 weeks after treatment, with these reductions lasting for at least 10 and 6 months, respectively.[13]

Current meta-analytic evidence shows that surgical decompression performs effectively for individuals with structural problems who have pudendal neuralgia. Among minimally invasive methods, pRFA stands out because it may affect the way the nervous system functions. That meta-analysis acknowledged the interventional block's function; it also highlights that the short time they remain as medications is a significant issue.[14] Consequently, strategies focused on enhancing the sustainability of symptom management are gaining increasing interest in recent literature. Ran et al. recently published a study on this topic that showed how a combined approach that modulates the sympathetic system (through a ganglion impar block) can make pRFA more effective in managing pudendal neuralgia. This study highlighted the significance of multimodal interventions in contexts where pRFA alone may not be sufficient.[15]

In our study, patients in Group 1 received pRFA plus bupivacaine, whereas patients in Group 2 received pRFA plus bupivacaine and triamcinolone. In both groups, a significant reduction in NRS scores was observed immediately after the procedure as well as at the 1-month and 3-month follow-ups; however, in the group that received additional triamcinolone, the reduction in NRS scores persisted more prominently at the end of the third month compared with Group 1.

Our study specifically evaluates the potential synergistic effect achieved by adding a pharmacological component, triamcinolone, to pRFA. The long-term analgesic success reported by Ran et al. through an additional interventional procedure (ganglion impar block) appears conceptually aligned with our findings, in which stable reductions in pain scores were maintained even at the end of the 3-month follow-up after adding a depot steroid to the pRFA protocol. Importantly, our approach offers a practical advantage: without requiring a second invasive intervention, a similar potential for clinical improvement may be achieved within the same session through pharmacological support. In this context, the question of whether the neuromodulatory effects of pRFA should be supported more appropriately by sympathetic blocks or by potent anti-inflammatory agents may help inform the development of personalized treatment algorithms according to the pathophysiological subtypes of PN.

On the other hand, it is well known that pudendal neuropathic pain can profoundly compromise quality of life and psychological well-being. In line with prior observations, pudendal neuralgia should therefore be considered not only a physical pain syndrome but also a disorder with a substantial emotional and mental health burden.[14] In both patient groups in our study, moderate levels of depression were present pre-procedure according to the Beck Depression Inventory. In evaluations performed at the 1st and 3rd months after the procedure, significant improvements in depression scores were observed in both patient groups.

The literature shows a lack of evidence regarding the impact of these interventions on patients' mental

health outcomes. In this context, our study contributes to the identified "evidence gap." Although the retrospective design and limited sample size should be noted as methodological limitations, our findings suggest that adding triamcinolone to the pRFA protocol may prolong the duration of analgesic benefit and yield a clinically meaningful improvement in depressive symptoms, as supported by BDI scores.

Conclusion

In conclusion, the addition of steroids and local anesthetics to transgluteal pulsed radiofrequency ablation for pudendal neuralgia may be an effective and minimally invasive option for patients in whom conservative treatment has failed. Future randomized controlled studies are required to accurately evaluate the safety and efficacy of this novel technique. However, owing to its minimally invasive nature, this procedure may be recommended for individuals who wish to avoid invasive surgical treatment or for those in whom surgical intervention may carry a high risk due to concomitant comorbidities.

Limitations

This study has limitations that should be discussed, including the small sample size and its retrospective design. Nevertheless, the initial feasibility results suggest that this procedure may be a safe option for patients with no additional therapeutic alternatives and has the potential to significantly improve symptoms. Another limitation is that the outcomes are primarily based on subjective patient-reported symptoms and the absence of a control group. Based on the available data, we cannot exclude the possibility that a placebo effect influenced the results. Finally, although limited in number, the patients included in this study had pain with different disease patterns and etiologies, as well as concomitant treatment regimens, which may have influenced the outcomes.

Conflicts of Interest:

The authors declare no conflicts of interest.

Funding:

None

Data availability:

Data could be shared with reasonable requests.

Contributions:

Conceptualization: Mesut Erbas; Methodology: Ozan Sayan;

Data collection: Ozan Sayan, Melek Tuba Tilkan;

Data analysis: Mihrican Sayan, Melek Tuba Tilkan;

Statistical analysis: Mihrican Sayan;

Formal analysis and review: Ozan Sayan;

Writing – original draft preparation: Mesut Erbas, Melek Tuba Tilkan;

Writing – review and editing: Mesut Erbas, Ozan Sayan, Mihrican Sayan;

Supervision or mentorship: Mesut Erbas;

Oversight: Mesut Erbas;

Critical evaluation: Mihrican Sayan, Mesut Erbas;

Final approval of the version to be published: Mesut Erbas, Mihrican Sayan, Ozan Sayan, Melek Tuba Tilkan.

The authors declare that this study has been reported honestly, accurately, and transparently, and that they have approved the final version. They accept overall responsibility for the study's integrity and accuracy, ensuring that any issues related to its validity are investigated and resolved.

References:

1. Ploteau S, Labat JJ, Riant T, Levesque A, Robert R, Nizard J. New concepts on functional chronic pelvic and perineal pain: pathophysiology and multidisciplinary management. *Discov Med*. 2015; 19(104):185-192.

2. Luesma MJ, Galé I, Fernando J. Algoritmo diagnóstico y terapéutico del síndrome de atrapamiento del nervio pudendo. *Med Clin (Barc)*. 2021;157(2):71-78. doi:10.1016/j.medcli.2021.02.012

3. Kovacevic N, Sirls L, Gilleran J, Peters K. Peripheral nerve stimulation for pudendal neuralgia and other pelvic pain disorders: current advances. *Frontiers in Urology*. 2023;3. doi:10.3389/fruro.2023.1323444

4. Hong MJ, Kim YD, Park JK, Hong HJ. Management of pudendal neuralgia using ultrasound-guided pulsed radiofrequency: a report of two cases and discussion of pudendal nerve block techniques. *J Anesth*. 2016;30(2):356-359. doi:10.1007/s00540-015-2121-x

5. Collard MD, Xi Y, Patel AA, Scott KM, Jones S, Chhabra A. Initial experience of CT-guided pulsed radiofrequency ablation of the pudendal nerve for chronic recalcitrant pelvic pain. *Clin Radiol*. 2019; 74(11):897.e17-897.e23. doi:10.1016/j.crad.2019.06.028

6. Chang MC. Efficacy of Pulsed Radiofrequency Stimulation in Patients with Peripheral Neuropathic Pain: A Narrative Review. *Pain Physician*. 2018;21 (3):E225-E234.

7. Chae WS, Kim SH, Cho SH, Lee JH, Lee MS. Reduction in mechanical allodynia in complex regional pain syndrome patients with ultrasound-guided pulsed radiofrequency treatment of the superficial peroneal nerve. *Korean J Pain*. 2016;29 (4):266-269. doi:10.3344/kjp.2016.29.4.266

8. Bellingham GA, Bhatia A, Chan C wern, Peng PW. Randomized Controlled Trial Comparing Pudendal Nerve Block Under Ultrasound and Fluoroscopic Guidance. *Reg Anesth Pain Med*. 2012;37(3):262-266. doi:10.1097/AAP.0b013e318248c51d

9. Bellingham GA, Peng PWH. Ultrasound-guided interventional procedures for chronic pelvic pain. *Tech Reg Anesth Pain Manag*. 2009;13(3):171-178. doi:10.1053/j.trap.2009.06.019

10. Krijnen EA, Schweitzer KJ, van Wijck AJM, Withagen MIJ. Pulsed Radiofrequency of Pudendal Nerve for Treatment in Patients with Pudendal Neuralgia. A Case Series with Long-Term Follow-Up. *Pain Practice*. 2021;21(6):703-707. doi:10.1111/papr.12999

11. Fang H, Zhang J, Yang Y, Ye L, Wang X. Clinical effect and safety of pulsed radiofrequency treatment for pudendal neuralgia: a prospective, randomized controlled clinical trial. *J Pain Res*. 2018;Volume 11:2367-2374. doi:10.2147/JPR.S167866

12. Masala S, Calabria E, Cuzzolino A, Raguso M, Morini M, Simonetti G. CT-Guided Percutaneous Pulse-Dose Radiofrequency for Pudendal Neuralgia. *Cardiovasc Intervent Radiol*. 2014;37(2):476-481. doi:10.1007/s00270-013-0679-y

13. Hong MJ, Kim YD, Park JK, Hong HJ. Management of pudendal neuralgia using ultrasound-guided pulsed radiofrequency: a report of two cases and discussion of pudendal nerve block techniques. *J Anesth*. 2016;30(2):356-359. doi:10.1007/s00540-015-2121-x

14. Andiman SE, Maron JS, Dandolu V, et al. Impact of Treatment of Pudendal Neuralgia on Pain: A Systematic Review and Meta-Analysis. *Int Urogynecol J*. 2025;36(1):35-58. doi:10.1007/s00192-024-06004-x

15. Ran J, Lu F, Xu L, et al. Efficacy of ganglion impar block combined with pudendal nerve pulsed radiofrequency for pudendal neuralgia management—a randomized clinical trial. *Trials*. 2024;25(1):316. doi:10.1186/s13063-024-08152-3

