

ORIGINAL RESEARCH

Medium-term outcomes of selective dorsal cryoablation in medically refractory lifelong premature ejaculation: a 24-month follow-up study

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(Atakan Eren)**Abstract**

Background: The study aimed to clarify the role of selective dorsal cryoablation (SDC) in the management of medical treatment-resistant lifelong premature ejaculation (PE), and evaluate the permanence of SDC treatment effectiveness with results from 24 months. **Methods:** Patients who were diagnosed with lifelong PE and underwent the SDC procedure were considered for inclusion in the study. Patients' characteristics, success, and complications of SDC were noted. Intravaginal Ejaculation Latency Time (IELT) and Premature Ejaculation Diagnostic Tool (PEDT) were recorded pre-procedure and during follow-ups. To clarify the impact of SDC on IELT and PEDT during follow-up, IELT and PEDT scores at 3 months, 6 months, 12 months, 18 months, and 24 months were recorded and compared. Also, preoperative factors that affected post-SDC outcomes were analysed. **Results:** A total of 47 patients were evaluated, and at the 12 months follow-up, 83.0% (n = 39) of the patients met the defined success criteria for the SDC procedure. The mean IELT increased from 48.6 ± 11.1 seconds preoperatively to 250.0 ± 65.3 seconds at 3 months ($p = 0.001$), then gradually declined over time, measuring 169.5 ± 48.8 seconds at 24 months ($p = 0.001$, $\eta^2 = 0.911$). Similarly, the mean PEDT score showed a significant reduction from 17.2 ± 2.3 at baseline to 7.3 ± 2.1 at 3 months and then increased slightly over time to 8.8 ± 2.2 at 24 months ($p = 0.001$, $\eta^2 = 0.880$). **Conclusions:** Within the limitations of this retrospective single-arm study, SDC was associated with improvements in IELT and PEDT scores in patients with medically refractory lifelong PE. However, these findings should be interpreted with caution, as the absence of a control group limits causal inference and the observed improvements may be partially influenced by nonspecific effects such as placebo response or regression to the mean.

Keywords

IELT; Lifelong premature ejaculation; PEDT; Premature ejaculation; Selective dorsal cryoablation

Resultados a medio plazo de la crioablación dorsal selectiva en la eyaculación precoz de toda la vida refractaria al tratamiento médico: un estudio de seguimiento de 24 meses

Resumen

Antecedentes: Aclarar el papel de la crioablación dorsal selectiva (SDC) en el tratamiento de la eyaculación precoz (EP) de toda la vida resistente al tratamiento médico, y evaluar la permanencia de la eficacia del tratamiento con SDC a partir de los resultados obtenidos a los 24 meses. **Métodos:** Se consideró la inclusión en el estudio de pacientes a los que se les había diagnosticado eyaculación precoz de toda la vida y que se habían sometido a la SDC. Se registraron las características de los pacientes, así como el éxito y las complicaciones de la SDC. Se registraron el tiempo de latencia de la eyaculación intravaginal (IELT) y la puntuación de la herramienta de diagnóstico de la eyaculación precoz (PEDT) antes de la intervención y en las visitas de seguimiento. Para aclarar el impacto de la SDC en el IELT y el PEDT durante el seguimiento, se registraron y compararon las puntuaciones del IELT y el PEDT a los 3, 6, 12, 18 y 24 meses. Asimismo, se analizaron los factores preoperatorios que afectaban a los resultados tras la SDC. **Resultados:** Se evaluó a un total de 47 pacientes y, en el seguimiento a los 12 meses, el 83.0% ($n = 39$) de los pacientes cumplía los criterios de éxito definidos para la intervención de SDC. La media del IELT aumentó de 48.6 ± 11.1 segundos antes de la intervención a 250.0 ± 65.3 segundos a los 3 meses ($p = 0.001$), para luego disminuir gradualmente con el tiempo, situándose en 169.5 ± 48.8 segundos a los 24 meses ($p = 0.001$, $\eta^2 = 0.911$). De manera similar, la puntuación media en la escala PEDT mostró una reducción significativa, pasando de 17.2 ± 2.3 al inicio del estudio a 7.3 ± 2.1 a los 3 meses, para luego aumentar ligeramente con el tiempo hasta alcanzar 8.8 ± 2.2 a los 24 meses ($p = 0.001$, $\eta^2 = 0.880$). **Conclusiones:** Dentro de las limitaciones de este estudio retrospectivo de un solo grupo, la SDC se asoció con mejoras en las puntuaciones del IELT y el PEDT en pacientes con eyaculación precoz de toda la vida refractaria al tratamiento médico. Sin embargo, estos hallazgos deben interpretarse con cautela, ya que la ausencia de un grupo de control limita la inferencia causal y las mejoras observadas pueden verse parcialmente influidas por efectos no específicos, como la respuesta al placebo o la regresión a la media.

Palabras Clave

IELT; Eyaculación precoz de toda la vida; PEDT; Eyaculación precoz; Dorsal selectiva

1. Introduction

Premature ejaculation (PE) is characterized by ejaculation that consistently occurs with minimal sexual stimulation before or shortly after vaginal penetration and before the individual wishes it [1]. The exact prevalence of PE is still unknown due to the lack of large population-based studies, patient acceptance of PE as a normal condition, and PE patients being embarrassed about consulting a doctor. However, numerous studies accept PE as the most common sexual dysfunction pathology, and ongoing studies report that almost one third of males have PE [2, 3]. Although PE is not a lethal pathological condition, previous reports have demonstrated that untreated PE results in loss of self-confidence, depression, social isolation, and deterioration of partner relationships [4].

Management of PE involves numerous medical treatment options, including topical local anaesthetic agents and drugs such as alpha-adrenergic blockers, phosphodiesterase type 5 inhibitors, selective serotonin reuptake inhibitors (SSRIs), and tramadol [5]. However, patient compliance with the aforementioned medications and the success of the medications in treating PE vary over a wide range, and a significant number of patients seek new treatment options. It is hypothesised that an overexcitable ejaculatory reflex, increments in sexual arousability, and penile hypersensitivity are the main reasons for PE. Thus, a relatively new surgical technique—selective dorsal cryoablation (SDC)—has been introduced in andrology practice, which aims at desensitisation of the penis [6].

Although a limited number of studies focus on the efficiency

and safety of SDC in the treatment of PE, to our knowledge, these studies have generally lacked long-term follow-up data. In the present study, for the first time, we aim to clarify the potential role of SDC for the treatment of medical treatment-resistant lifelong PE, and evaluate the permanence of SDC treatment effectiveness with results from 24 months.

2. Materials and methods

The study was conducted in accordance with the Declaration of Helsinki and was approved by the ethical committee of Haseki Training and Research Hospital, approval number: 3-2026, date: 21 January 2026. Data for patients admitted to two andrology outpatient clinics with PE symptoms between January 2022 and December 2025 were retrospectively analysed. Patients who were diagnosed with lifelong PE and underwent the SDC procedure were considered for inclusion in the study. Indications for SDC included all these parameters; being between 18 and 65 years old, diagnosis of lifelong PE according to International Society of Sexual Medicine (ISSM) criteria, Intravaginal Ejaculation Latency Time (IELT) < 2 minutes in $\geq 75\%$ of cases, inability to delay ejaculation, personal distress associated with this condition, having been in a stable heterosexual relationship for at least 6 months, documented history of failure or intolerance to first-line treatments (e.g., SSRIs, topical anaesthetics), and pre-procedure International Index of Erectile Function (IIEF-5) score ≥ 22 , i.e., no pre-existing erectile dysfunction (ED). Patients with acquired PE, with significant penile deformity and penile surgery history, and

with active urogenital infection, neurological disorders, and/or psychiatric disorder were excluded from the study. Other exclusion criteria were not complying with regular follow-ups, having repeated SDC procedures, and not having sexual intercourse during follow-up.

All patients were informed in detail about the potential benefits, limitations, and possible risks of the SDC procedure, including the uncertainty regarding long-term outcomes and the theoretical risk of nerve-related complications, before providing written informed consent. All 47 patients completed the 24 months follow-up period, and no patients were lost to follow-up during the study. All procedures were done by a single experienced andrologist (ASG). Before the procedure, detailed medical anamnesis was noted for each patient, and intensive physical and andrological examination was performed. Patient age, body mass index (BMI), educational and marital status, smoking status, alcohol use, and age of first sexual intercourse were recorded.

Success of the procedure was defined as a composite endpoint that required a patient to meet both of the following criteria at 12 months follow-up: at least a 3-fold increase in geometric mean IELT from baseline and a decrease in Premature Ejaculation Diagnostic Tool (PEDT) score to ≤ 8 (*i.e.*, regression to the “no PE” category). This composite definition was selected to capture both objective improvement in ejaculation latency and clinically meaningful symptom resolution, as reflected by validated patient-reported outcomes. Given the absence of a universally accepted definition of treatment success in PE, this approach was considered to provide a more comprehensive assessment of treatment efficacy. In addition, complications in first year following surgery were noted. Change from baseline for geometric mean IELT was calculated.

Patients were instructed to measure their IELT using a stopwatch during at least four separate acts of sexual intercourse before the SDC procedure and prior to each follow-up visit. IELT was defined as the time interval between vaginal penetration and ejaculation. Patients were asked to record these measurements in a standardized manner and report the average value at each time point. To improve reliability, patients were provided with detailed instructions on how to perform the measurements consistently. However, as IELT was self-reported, the possibility of reporting bias cannot be excluded.

Similarly, all patients filled the PEDT before SDC and during each follow-up visit. PEDT includes 5 questions to determine PE. On this questionnaire, a score of ≥ 11 indicates a diagnosis of PE, a score of 9–10 indicates probable PE, and a score of ≤ 8 indicates no PE [7, 8]. Because IELT data typically show a right-skewed distribution, treatment success was defined based on changes in the geometric mean IELT, calculated using log-transformed IELT values. However, for descriptive presentation of follow-up outcomes, IELT values are reported as arithmetic mean $\pm$ standard deviation to facilitate clinical interpretation. Sexual satisfaction and partner satisfaction were assessed using a 5-point Likert scale (1: very dissatisfied, 5: very satisfied) as patient-reported outcome measures.

2.1 Selective dorsal cryoablation (SDC) technique

The procedures were performed with the CRYO-S Painless system (cryotherapy equipment, Metrum CryoFlex, Lomianki, Poland), which included cryoprobes (18-gauge (1.3 mm) diameter, 120 mm long) capable of reaching temperatures of -78°C . With local anaesthesia, the probe was advanced through the infrapubic inlet to the base of the penis under ultrasound guidance and positioned near the dorsal vasculature, along the designated branches of the dorsal penile nerve. The integrated neurostimulation system confirmed the targeted nerves with 200/min frequency pulse width; a tingling sensation in the glans was considered the sensory threshold, and low-current stimulation at 20 mA was preferred to preserve motor function. Once the location was confirmed, a two-stage Freeze–Thaw–Freeze protocol was applied: the nerve tissue was first frozen for 2 minutes at a target temperature of -78°C , then thawed for 1 minute, and then frozen a second time for the same period and temperature.

The dorsal penile nerve typically divides into multiple sensory branches at the penile base, and the exact number of branches may vary between individuals. Therefore, the procedure did not target a predefined number of nerve branches. Instead, clinically relevant sensory branches were identified intraoperatively using ultrasound guidance and neurostimulation. In all patients, the procedure was performed bilaterally at the penile base to ensure consistent desensitization of the dorsal penile nerve distribution. Neurostimulation was used to confirm sensory nerve localization by eliciting a tingling sensation in the glans penis at low-current stimulation. To minimize procedural variability, all interventions were performed using the same cryoablation device, probe specifications, and freeze–thaw–freeze protocol by the same experienced andrologist. To determine the safety and efficiency of SDC, success and complications of the procedure were analysed. Also, to clarify the impact of SDC on IELT and PEDT during follow-up, IELT and PEDT scores were recorded and compared at 3, 6, 12, 18, and 24 months. Also, preoperative factors which affected post-SDC outcomes were analysed.

2.2 Statistical analysis

All statistical analyses were performed using IBM SPSS Statistics software (version 27, IBM Corp., Armonk, NY, USA). Continuous variables are presented as mean $\pm$ standard deviation (SD), while categorical variables are expressed as frequencies and percentages. The normality of continuous data was assessed using the Shapiro–Wilk test. To evaluate the longitudinal changes in IELT and PEDT scores across different time points, repeated measures analysis of variance (RM-ANOVA) was applied. Mauchly’s test of sphericity was used to assess the assumption of sphericity; if violated, the Greenhouse–Geisser correction was applied. Trend analyses (linear, quadratic, and cubic) were conducted to determine the nature of change over time. In all tests, a *p*-value of less than 0.05 was considered statistically significant. Effect sizes are reported using partial eta squared (η^2). In addition to *p*-values and effect sizes, confidence intervals (CI) for the primary outcome measures were calculated to better contextualize the

magnitude and precision of the observed treatment effects.

3. Results

A total of 47 patients who met the inclusion criteria were evaluated in this study. The mean age of the patients was 35.2 ± 6.7 years, and the average BMI was 24.8 ± 3.2 kg/m². Most of the patients had university-level education (63.8%) and were married (82.9%). Smoking and alcohol use were reported by 38.3% and 27.6% of patients, respectively. The average age at first sexual intercourse was 21.4 ± 3.6 years (Table 1).

TABLE 1. Sociodemographic and clinical characteristics of patients.

Variable	Patients (n = 47)
Age (yr)*	35.2 ± 6.7
Body mass index (kg/m ²)*	24.8 ± 3.2
Educational status, n (%)	
Primary school	6 (12.8%)
High school	11 (23.4%)
University	30 (63.8%)
Marital status, n (%)	
Married	39 (82.9%)
Single	8 (17.1%)
Smoking, n (%)	18 (38.3%)
Alcohol use, n (%)	13 (27.6%)
Age of first sexual intercourse (yr)*	21.4 ± 3.6

*mean $\pm$ standard deviation.

At the 12 months follow-up, 83.0% (n = 39) of the patients met the predefined composite success criteria for the SDC procedure. However, given the absence of a control group and the observational design, these findings should be interpreted cautiously and should not be considered definitive evidence of treatment efficacy. This success rate slightly decreased to 70.2% (n = 33) at the 24 months. The reported complications within the first month post-procedure included pain (8.5%), swelling (12.8%), redness (14.9%), and paraesthesia (6.4%). All complications were mild in severity, transient in nature, and resolved spontaneously within a short period without the need for medical or surgical intervention. No long-term or permanent adverse effects were observed (Table 2).

TABLE 2. Treatment success rates and reported complications in the 12th and 24th months.

Variable	Patients (n = 47)
Success, n (%)	
12th month	39 (83.0%)
24th month	33 (70.2%)
Complications, n (%)	
Pain	4 (8.5%)
Swelling	6 (12.8%)
Redness	7 (14.9%)
Paraesthesia	3 (6.4%)

There was a statistically significant increase in the mean IELT following the SDC procedure. The mean IELT increased from 48.6 ± 11.1 seconds preoperatively to 250.0 ± 65.3 seconds at 3 months ($p = 0.001$), then gradually declined over time, measuring 227.2 ± 60.0 seconds at 6 months, 200.5 ± 54.8 seconds at 12 months, 183.3 ± 51.9 seconds at 18 months, and 169.5 ± 48.8 seconds at 24 months ($p = 0.001$, $\eta^2 = 0.911$). Similarly, the mean PEDT score showed a significant reduction from 17.2 ± 2.3 at baseline to 7.3 ± 2.1 at 3 months and then increased slightly over time to 8.8 ± 2.2 at 24 months ($p = 0.001$, $\eta^2 = 0.880$). The geometric mean IELT increased from 47.5 seconds at baseline to 241.2 seconds at 3 months and decreased to 162.0 seconds at 24 months, paralleling the trend observed in arithmetic mean values (Table 3). In addition to objective measures, patient-reported outcomes also demonstrated improvement after SDC. A majority of patients reported increased sexual satisfaction and partner satisfaction during follow-up, reflecting improvements in subjective patient-reported outcomes beyond objective IELT measurements.

Exploratory subgroup analysis suggested that non-smoker patients experienced a greater increase in IELT at 3 months ($455.0 \pm 46.8\%$ vs. $361.7 \pm 122.7\%$, $p = 0.001$), and slower decline in IELT at 12 and 24 months compared with smokers ($p = 0.023$ and $p = 0.006$, respectively). Similarly, patients with a BMI <30 demonstrated a more favourable response, with a greater IELT increase at 3 months ($449.7 \pm 63.1\%$ vs. $398.6 \pm 107.6\%$, $p = 0.046$), and less pronounced decreases at 12 and 24 months ($p = 0.007$ and $p = 0.001$, respectively) (Table 4).

4. Discussion

The prevalence of PE is increasing, likely due to greater awareness of sexual health disorders, improved access to healthcare services, and the dissemination of medical information through social media. Although several pharmacological treatments are available, a considerable proportion of patients do not respond adequately and therefore seek alternative therapeutic approaches, including surgical interventions [9]. SDC is a relatively novel procedure designed to reduce penile hypersensitivity and modulate the ejaculatory reflex. Previous studies investigating SDC for lifelong PE remain limited and have generally lacked data on predictive factors for treatment response and longer-term outcomes [10, 11].

In the present study, we evaluated the medium-term outcomes of SDC in patients with medically refractory lifelong PE. Our findings suggest that SDC is associated with improvements in IELT and PEDT scores; however, given the retrospective single-arm design of the study, these results should be interpreted cautiously, as causal relationships cannot be definitively established. Moreover, the magnitude of the observed treatment effect was relatively large, raising the possibility that part of the improvement may reflect non-specific influences, including placebo response, regression to the mean, behavioral adaptation, or reporting bias.

Previous studies have also reported beneficial effects of dorsal nerve cryoablation or neuromodulation techniques in patients with PE. Prologo *et al.* [12] demonstrated significant increases in IELT at 3 and 6 months following cryoablation

TABLE 3. Longitudinal changes in arithmetic and geometric mean IELT, PEDT scores, and patient-reported outcomes.

	IELT (Arithmetic Mean, s)	IELT (Geometric Mean, s)	PEDT	Sexual Satisfaction	Partner Satisfaction
Pre-treatment*	48.6 ± 11.1	47.5	17.2 ± 2.3	1.9 ± 0.7	1.6 ± 0.8
3 months*	250.0 ± 65.3	241.2	7.3 ± 2.1	4.3 ± 0.6	4.1 ± 0.7
6 months*	227.2 ± 60.0	219.6	7.9 ± 1.9	4.1 ± 0.7	3.9 ± 0.8
12 months*	200.5 ± 54.8	193.3	8.2 ± 2.1	3.8 ± 0.8	3.6 ± 0.9
18 months*	183.3 ± 51.9	176.4	8.6 ± 2.0	3.6 ± 0.9	3.4 ± 1.0
24 months*	169.5 ± 48.8	162.0	8.8 ± 2.2	3.4 ± 0.8	3.2 ± 0.9
<i>F</i>	169.64		271.32	184.45	162.12
<i>p</i> value	0.001		0.001	0.001	0.001
Eta ²	0.911		0.880	0.855	0.820
95% CI (Overall Mean Change)	104.2–137.6		(−9.2)–(−7.6)	1.3–1.7	1.4–1.8

*mean ± standard deviation. IELT: Intravaginal ejaculation latency time; PEDT: Premature Ejaculation Diagnostic Tool; CI: confidence interval. Geometric mean IELT values were calculated using log-transformed data and are presented without standard deviation.

TABLE 4. Relationship between post-treatment IELT change with smoking and BMI.

IELT*	Smokers	Non-smokers	<i>p</i> value	BMI <30	BMI >30	<i>p</i> value
Increase at 3 months compared with baseline (%)	361.7 ± 122.7	455.0 ± 46.8	0.001	449.7 ± 63.1	398.6 ± 107.6	0.046
Decrease at 12 months compared with 3 months (%)	21.3 ± 3.0	19.5 ± 2.1	0.023	19.0 ± 1.8	21.0 ± 2.8	0.007
Decrease at 24 months compared with 12 months (%)	45.4 ± 12.3	37.4 ± 6.6	0.006	33.9 ± 5.6	45.0 ± 9.7	0.001

*mean ± standard deviation, IELT: Intravaginal ejaculation latency time; BMI: body mass index.

of the dorsal penile nerve. In addition, a meta-analysis by Culha *et al.* [6] showed that the mean IELT increased from approximately 1.1 minutes to 3.8 minutes following dorsal nerve cryoablation or neurectomy procedures. Consistent with these findings, we also observed marked improvements in IELT following SDC; however, the magnitude of improvement observed in the present study may partially reflect non-specific effects and therefore warrants cautious interpretation. However, unlike most previous reports that focused primarily on short-term outcomes, our study demonstrated a progressive decline in treatment effect over time, highlighting the importance of longer-term follow-up. An important finding of the present study was the progressive decline in IELT improvement observed between 3 and 24 months after SDC. This pattern suggests that, while SDC provides meaningful short-to medium-term benefit, its durability may be limited in some patients. One plausible explanation is the regenerative capacity of peripheral nerves following cryoablation. Cryoablation typically induces axonal disruption while preserving the endoneurial and perineurial structures, thereby allowing gradual nerve regeneration over time. As sensory nerve fibers recover, penile sensitivity may partially return, potentially reducing the magnitude of treatment effect. In addition to structural regeneration, adaptive neurophysiological mechanisms may also contribute to this decline. Central and peripheral neural plasticity, along with behavioral adaptation, may lead to partial

restoration of ejaculatory reflex pathways during long-term follow-up. These processes may attenuate the initial desensitization achieved by the procedure. From a clinical perspective, these findings suggest that SDC may not represent a definitive or permanent solution for all patients, but rather a modality with time-dependent efficacy. This has important implications for long-term management strategies. Selected patients may benefit from repeat procedures or adjunctive therapies, such as behavioral interventions or pharmacological treatments, to maintain treatment response.

While IELT is a widely used objective measure in PE research, its direct translation into clinically meaningful benefit may be limited when considered in isolation. In clinical practice, treatment success is more closely related to improvements in perceived ejaculatory control, sexual satisfaction, and overall sexual experience. In the present study, the significant increase in IELT was paralleled by consistent improvements in both sexual satisfaction and partner satisfaction scores, suggesting that the observed changes were not only statistically significant but also clinically relevant. These findings support the notion that prolongation of ejaculation latency may translate into a more satisfactory and controlled sexual experience for both patients and their partners.

Smoking and obesity are widely recognized factors influencing male sexual health, although their relationship with PE remains controversial. Some studies have suggested that smok-

ing is not significantly associated with PE prevalence [13], whereas others have reported higher smoking rates among men with PE [14]. In our study, smoking was associated with less favorable treatment outcomes following SDC. The underlying mechanisms remain unclear, but smoking has been linked to vascular impairment, neural dysfunction, and increased baseline anxiety in studies of male sexual health, which may potentially influence ejaculatory control. However, these mechanisms have not been specifically investigated in patients undergoing SDC and should therefore be interpreted cautiously.

Similarly, obesity has been associated with various alterations in male sexual function. Tawfik *et al.* [15] suggested that higher BMI may represent a potential risk factor for PE, and Karaca and Taş reported improvements in ejaculatory parameters following metabolic surgery in obese patients [16]. Conversely, Gökce and Ekmekcioglu observed an inverse relationship between BMI and lifelong PE [17]. In the present study, non-obese patients demonstrated more favorable outcomes after SDC. Although the mechanisms underlying this association remain uncertain, obesity-related endothelial dysfunction, oxidative stress, and neurohormonal alterations may potentially influence ejaculatory physiology. Nevertheless, direct evidence linking these mechanisms to SDC outcomes is currently lacking. These findings highlight the importance of careful patient counseling before SDC, particularly regarding the possibility of reduced treatment durability and variability in individual treatment response. However, these findings should be interpreted with caution, as they are based on exploratory subgroup analyses without multivariate adjustment. Therefore, potential confounding factors cannot be excluded, and these associations should be considered hypothesis-generating rather than definitive.

Importantly, the lack of a control group introduces the possibility that part of the observed treatment effect may be attributable to non-specific factors, including placebo response, increased patient awareness, or behavioral adaptation during follow-up. In addition, regression to the mean may have contributed to the observed improvements, particularly given the selection of patients with severe baseline symptoms. Therefore, the magnitude of treatment effect reported in this study should not be interpreted as purely attributable to the SDC procedure.

The present study has several limitations. First, the relatively small sample size and retrospective single-center design may limit the generalizability and external validity of the findings. The absence of randomization and blinding increases the risk of bias, and non-specific effects such as placebo response or regression to the mean may have contributed to the observed improvements. Second, although sexual satisfaction and partner satisfaction data were available and incorporated into the analysis, other patient-reported outcomes such as psychological distress reduction and quality-of-life measures were not systematically evaluated. Third, multivariate analyses were not performed, and therefore potential confounding factors that may influence treatment outcomes could not be fully assessed. The large effect sizes observed in the repeated-measures analysis likely reflect substantial within-subject improvements in IELT and PEDT scores following SDC. Nev-

ertheless, the magnitude of these treatment effects remained notably high and should be interpreted cautiously, particularly given the retrospective single-arm design, absence of a sham or control group, potential reporting bias, and the possibility of regression to the mean or placebo-related effects. The absence of such measures limits the ability to fully evaluate subjective treatment benefit from the patient's perspective. However, specific domains such as perceived ejaculatory control and overall sexual experience were not assessed using validated instruments, which may limit the comprehensive evaluation of clinical benefit. In addition, subgroup analyses evaluating the impact of smoking status and BMI were exploratory in nature, and no multivariate analysis was performed. Therefore, the observed associations may be influenced by unmeasured confounding factors.

5. Conclusions

In conclusion, SDC appears to be associated with significant improvements in IELT and PEDT scores in patients with medically refractory lifelong PE. However, the magnitude of benefit may gradually decrease over time. In addition, smoking status and BMI may influence treatment response following SDC. Further prospective controlled studies with longer follow-up periods are required to better define the long-term efficacy and predictors of treatment response.

AVAILABILITY OF DATA AND MATERIALS

The data presented in this study are available on reasonable request from the corresponding author.

AUTHOR CONTRIBUTIONS

ASG and AE—designed the research study; analyzed the data; wrote the manuscript. ASG—performed the research. Both authors contributed to editorial changes in the manuscript. Both authors read and approved the final manuscript.

ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The study was conducted in accordance with the Declaration of Helsinki and was approved by the ethical committee of Haseki Training and Research Hospital, approval number: 3-2026, date: 21 January 2026. Written informed consent was obtained from all the patients for study participation.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

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