Editorial
Male sexual health and dysfunction

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Customizing Therapy in Men with Peyronie's Disease: Insights from Expert Case Discussions

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OPENING REFLECTION

Due to the complex interplay between physical deformity, functional impairment from erectile dysfunction (ED), Peyronie's disease (PD) poses significant challenges for andrologists and reconstructive urologists. These challenges are further compounded by associated psychological consequences, including depression, diminished self-esteem, and emotional distress related to perceived penile length loss [1,2]. Psychosocial distress caused by relationship conflicts are observed in over 50% of couples [3,4]. While men are embarrassed about penile deformity and anxious about impaired sexual performance, female partners also report sexual dysfunction, including sexual dissatisfaction (21.2%), dyspareunia (7.7%), and decreased libido (3.8%) [5]. Overall, these psychological and physical stressors profoundly impair a couple's quality of life. Available literature offers ample information on epidemiological data, pathogenesis, and treatment strategies, but patient management in an individualized manner still poses a challenge because no single treatment can adequately address each patient's needs. Few surgical interventions provoke as much intense personal distress in a man as confronting a penile deformity [1,3]. Approximately 50% of men with PD experience depressive symptoms and up to 80% report disease-related distress, with many suffering silently [4]. The European Society for Sexual Medicine (ESSM) and International Society for Sexual Medicine (ISSM) recommend addressing psychological, emotional, and relational challenges associated with PD (level 4, grade C) [6,7]. Coyne et al's [8] analysis of IMPRESS I and II studies found that 53% and 45% of patients reported moderate distress, while 31% and 33% reported severe distress, respectively.

Reported PD prevalence varies widely, from 0.3% to

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20.3%, depending on how studies are conducted and how symptoms are defined. This makes global data difficult to measure consistently. In the United States, Lindsay's study showed the prevalence of the disease to be 0.39% based on the diagnosed clinical population [9]. In Germany, Schwarzer et al [10] surveyed 8,000 men aged 30–80 and found 3.2% prevalence of palpable plaque, with rates increasing from 1.5% in men 30–39 to 6.5% in men over 70. A later US study of 11,420 men found prevalence up to 13% when self-reported symptoms are included [11], similar to another population-based survey of 7,711 respondents showing 11% probable PD [12]. Reports indicate 8.9% PD prevalence in prostate cancer studies [13], while the highest rate of 20.3% was found among patients with diabetes and ED [14]. A missed diagnosis of PD may result in approximately 74% of patients not receiving any initial treatment, while 15% may receive ED-related treatment instead [11]. LaRochelle and Levine [15] showed that many physicians—63% of primary care physicians (PCPs) and 41% of urologists—still perceive its prevalence as below 1%. Additionally, 17% of PCPs and 38% of urologists incorrectly believe PD resolves spontaneously in over 50% of cases, while 51% of PCPs and 1% of urologists were uncertain about the availability of effective treatments. This broad variation reflects challenges in capturing global epidemiology.

HOW THIS PANEL WAS DIFFERENT

The objective of this editorial is not a comprehensive review of the subject, but instead to distill key insights from the Global Andrology Forum (GAF) 2025 panel discussion on experience-based approaches for PD patient management. The focus is on the practical realities of managing PD patients, with particular attention to surgical techniques and decision-making processes. Therapeutic decisions are analyzed to explore both the rationale for deviating from guideline-based algorithms and the variability in clinical decision-making. Challenges remain in complex cases that require specific, tailored therapeutic approaches for these individual patients. By emphasizing real-world expertise this editorial provides a model for experiential learning that complements—but does not replace—knowledge derived from clinical guidelines and literature [2,5,16-18].

FROM THEORY TO PRACTICE–KEY CLINICAL DILEMMAS

1. Pain management in sub-acute phase

The sub-acute phase of PD is characterized by penile deformity, soft plaque, and pain. Pain affects 36.7% of PD patients, especially younger men, causing physical and psychological distress [19]. Both American Urological Association (AUA, expert opinion) and European Urological Association (EAU, LE 4, strength rating: strong) recommend non-steroidal anti-inflammatory drugs (NSAIDs) for acute phase pain [20,21]. Studies showed potential benefits for oral pentoxifylline [22,23] or low-dose tadalafil [24,25] particularly when combined with intralesional injections or low-intensity shock wave therapy (LiSWT). ISSM guidelines mention both with minimal benefit for deformity but useful for unstable curvature and painful erection (grade B, level 2) [7,18]. The EAU guidelines do not recommend pentoxifylline (LE 3c, strong strength rating) [21]. The Cochrane study excluded pentoxifylline studies due to data integrity concerns. It also did not verify pain improvement with Potassium-Para-Aminobenzoate [26]. No randomized controlled trials exist for tadalafil monotherapy in PD, with existing studies being retrospective analyses or combination protocols. Neither Cochrane nor AUA guidelines recommend tadalafil as monotherapy [20,26].

PD pain management includes intralesional injection of interferon α-2B (IFN-α2B), verapamil, hyaluronic acid (HA) or collagenase clostridium histolyticum (CCH), LiSWT, or penile traction therapy (PTT). Intralesional injection of IFN-α2B and HA may reduce penile curvature [27,28]. Transdermal electromotive drug administration (EMDA) has shown pain reduction in 80%–90% of cases [29,30], but data remain inconsistent, resulting in low recommendation levels by Cochrane and Italian Society of Andrology and Sexual Medicine (SIAMS) [18,26], whereas the EAU guidelines indicate no efficacy data for EMDA [21]. PTT application for up to six months has been associated with visual analog scale (VAS) score reduction from 5.5 to 2.5 [31]. Current guidelines from AUA, EAU and ESSM/ISSM do not support PTT for penile pain treatment [7,18,20,21,32].

A Cochrane meta-analysis of three trials (n=151) showed that LiSWT's short-term effects on penile pain *versus* sham treatment had a -1.9 pooled mean difference suggesting significant improvement, but with

moderate heterogeneity (I^2=59%) and low certainty [26]. The AUA Guidelines note natural pain resolution, limiting LiSWT's role, and hence giving it a conditional recommendation with evidence grade B for pain management but not for curvature or plaque size reduction (moderate recommendation; grade B) [20]. The EAU guidelines give LiSWT a weak rating for treating penile pain in acute PD but not for curvature [21]. NSAIDs remain mandatory for symptom control, while EMDA, intralesional injections, or nonsurgical combinations are sometimes used for additional PD problems.

2. Timing and rationale for the intervention

The chronic phase of PD typically begins 12–18 months after initial onset, though it may occur earlier, at 5–7 months. This phase is defined by the improvement of pain and stabilization of penile deformity for at least three months [33]. However, variability is substantial, and some men stabilize earlier or later. The AUA emphasizes symptom stability over a three-month interval rather than a fixed onset time. The EAU, AUA, and ESSM share the same surgical standard, defining the stable phase—typically lasting 6–12 months—as the indication for surgery [6,20,21]. Aside from the timing the ESSM further recommends surgery when PD causes bothersome symptoms during intercourse [6]. Clinicians should confirm curvature stability by waiting three months after the resolution of acute-phase symptoms before considering surgical intervention.

3. Treatment based on the degree of curvature

Treatment can be conservative or surgical based on curvature degree and ED status. The EAU considers non-complex PD—including dorsal plaque, non-calcified plaque, dorsal curvature of 30°–60°, and surgery contraindication—suitable for conservative treatment. A calcified plaque isn't an absolute contraindication for conservative treatment if penetration is possible. Any functional penis allowing safe penetration can be managed conservatively, while complex cases need surgery [21]. Surgery is generally preferred for notching, hourglass or hinge deformities, ventral curvatures, severe curves over 60°, or ossified plaque [34]. Phosphodiesterase type 5 inhibitors (PDE5i) may treat concurrent ED but aren't recommended as PD monotherapy [20]. However, the ESSM notes their potential benefit in early PD (grade B, level 2) [18]. Nonsurgical options include intralesional CCH or interferon injections [21]. Surgery is considered when conservative treatments fail, a stable (chronic) phase is achieved and the deformity and/or ED prevents satisfactory intercourse (level 3, grade C) [6]. Surgical approaches include tunical shortening (excision, incision, or plication), plaque incision/excision with grafting (grafting surgery), and penile prosthesis implantation (PPI) with additional procedures like modeling, grafting, or plication. PPIs are used for refractory ED with severe deformity. Tunical shortening is indicated for normal erectile function, adequate length and curvature mild/moderate curvature suitable for plication (*e.g.*, under 60°). Plaque incision/excision with grafting are reserved for complex cases [35]. By principle, this procedure aims to correct curvature and preserve functional length rather than to increase length beyond the patient's pre-disease state. Treatment choice should consider penile length, deformity type, erectile function, and patient preferences.

4. Penile shortening: what matters most to patients?

Penile shortening is the most common long-term complaint and a leading cause of patient dissatisfaction after plication surgeries in men with PD [21]. Patient disappointment ranges from 18%–41% for objective penile length loss and 50%–75% for perceived subjective loss, along with a decrease in penile sensation (6%–75%) [36]. Additionally, grafting surgeries can result in the recurrence or persistence of curvature in 6%–87% of cases and long-term ED in up to 50% of patients [6,37]. To evaluate baseline penile length and deformity, objective documentation, including photography, is recommended [38], although no consensus exists regarding the superiority of at-home autophotography *versus* in-office intracavernosal injection-assisted photography [39]. To minimize distortion artifacts during imaging, approaches such as standardized background templates, 3D photography [38], or app-based imaging employing mathematical algorithms are currently under clinical investigation [39]. Artificial intelligence-assisted penile measurements offer a new way to improve preoperative documentation by increasing accuracy, reducing interobserver variability, and allowing objective long-term evaluation [40]. These technologies may enhance surgical planning and support standardized data collection, especially in complex reconstructive procedures

for PD [41].

There is no consensus on the optimal procedure among clinicians for preserving penile length. Despite the absence of ED, the use of PPIs during PD surgery has gained increasing popularity in recent years [37,42]. Approximately 20% of men with PD who have a normal erection prefer penile prosthesis implantation [37,42]. Penile lengthening, ranging from 1 to 3 cm, may be achieved only through longitudinal expansion of the corpora cavernosa during PPI [43]. Almost 9 out of 10 patients with PD were significantly satisfied with penile implants regardless of their preoperative erection status, indicating that penile size is essential in most patients [42].

5. Curvature with ED–where strategies shift

The incidence of ED ranges up to 58% among patients with PD [44]. In addition, many of the remaining patients with PD may develop ED in the future. Therefore, in most guidelines, PPI is recommended in the presence of ED in men with PD who do not respond to oral pharmacotherapy (EAU: LE 2a) [21], together with adjunctive procedures if there is residual curvature after the insertion of a penile implant [6,21]. During penile prosthesis placement, manual modeling (Wilson maneuver [45]) can be performed to correct mild to moderate curvatures; however, if residual curvature exceeds 30 degrees after manual modeling, additional procedure for curvature correction may be required for severe cases [6,45]. In a multicenter study conducted with 499 patients with PD who underwent PPI, curvature was corrected with a penile implant in only 17.6% of the patients; manual modeling was used in 74.7%, tunica albuginea plication in 4.8%, incision-grafting in 2%, and combined grafting and modeling in 0.8% of the patients [46]. With respect to the types of penile implants, 3-piece and 2-piece implants had higher couples' satisfaction rates than did the malleable implants; however, the brands of implants did not affect the couples' satisfaction [47]. The ESSM, in statement no. 11, recommended inflatable over semirigid prostheses in patients with Peyronie's disease (level 4, grade C) [6].

The optimal timing for PPI use has been unclear in the literature. Long-term ED occurs in up to 50% of patients who undergo grafting surgeries [6,37]. Therefore, early PPI may be an option for patients with severe curvature who require corrective surgery and have significant concerns, such as short penis or EDs [42].

LESSONS FROM THE PANEL–THE VALUE OF SHARED SURGICAL EXPERIENCE

Given its complexity, PD is one of those clinical conditions where the value of shared surgical experience cannot be overstated. PD presents a heterogeneous complex anatomical and functional condition, further superimposed with patients' psychosocial pressures and demands; as a result, real-world management requires decisions that sometimes go beyond textbook or guideline algorithms. Surgeons who use shared experience models are adapting and refining approaches for pain management, the timing of intervention, and techniques to correct curvature or preserve penile length. Side-by-side learning in the operating room from experienced colleagues offers the opportunity for judicious graft selection, novel PPI strategies, and ways to mitigate postoperative dissatisfaction related to perceived penile shortening. Peer-to-peer discussions are also helpful for revealing pitfalls and subtle technical refinements that may not yet be standard in one's local practice.

KEY LESSONS FOR FUTURE THERAPEUTIC RESEARCH

In previous studies, an imbalance between matrix metalloproteinases (MMPs) and tissue inhibitors of metalloproteinases (TIMPs) has been shown to lead to the clinical picture of PD. An altered ratio with increased TIMP and decreased MMP activity promotes fibrogenesis in the tunica albuginea, resulting in subsequent plaque formation or, in the end-stage picture, calcified plaques. Therefore, antifibrotic agents with the potential to inhibit myofibroblast transformation are being investigated for their ability to inhibit fibrotic acceleration in the tunica albuginea and thus block scar formation with ossified plaque formation. Future drugs with the potential to remodel plaques in PD by modifying TIMPs and MMPs are becoming the focus of research. It is hoped that novel targeted molecules will provide new treatment armamentarium for PD, changing existing treatment modalities.

TAKE-HOME MESSAGES

PD management should be individualized and pa-

tient-centered, as there is no single algorithm that fits every case. Key points to consider are as follows:

1) Treatment must be adapted to the disease phase, curvature severity, ED presence, and the patient's expectations regarding function and penile length.
2) Maintaining realistic dialogue with patients about outcomes and risks is as important as the surgical technique.
3) Detailed medical records, including photographs, should be kept consistently. They help patient counseling and also support legal documentation when needed.
4) While treating this complex clinical condition, appropriate consideration should be given to the substantial psychological burden experienced by patients and their partners.
5) Recent outcome-driven studies support surgical refinements that lower recurrence, protect nerves, and reduce penile length loss.

In summary, surgical results improve with vast experience, careful listening, flexibility, and evidence-based adaptation to each patient's needs.

CONCLUSION: CALL FOR CONTINUED EXCHANGE AND DOCUMENTATION

Considering the therapeutic complexity of PD and the high patient expectations that are often unmet, management of PD should involve a realistic, individualized approach that balances complex medical needs with deep emotional impact. The ideal procedure might be different for each man suffering from such a condition, and it should be discussed in detail according to individualized requirements once stability is achieved to avoid premature or unnecessary interventions. No algorithm or guideline-based recommendation can replace the surgeon's judgment and experience-based decision-making. When surgical interventions may have high risk of worsened postoperative outcomes, the option for early PPI before corporeal fibrosis occurs is a valuable therapeutic option. The GAF 2025 panel highlighted that progress depends on open, cross-disciplinary dialogue and shared experience to address both the physical and the psychological needs of patients while advancing the field. Accurate pre-operative documentation, including photographs taken under erect conditions, is essential for PD management. It supports patient counseling and physician decision-making by explaining expected outcomes and setting realistic expectations. Objective medical documentation also serve as key means of legal protection, especially in cases of disputes, complications, or dissatisfaction with surgical outcomes.

Conflict of Interest

The authors have nothing to disclose.

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Author Contribution

Conceptualization: AA, GM. Supervision: AA, GMP. Validation: All authors. Writing – original draft: GMP, WA, SC. Writing – review & editing: GMP, WA, SC, EC, TA, ESA, SM, AK, AA, RS.

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