Journal of Urology and Renal Diseases
Rifat UN. J Urol Ren Dis 11: 1447.
www.doi.org/10.29011/2575-7903.001447
www.gavinpublishers.com

Editorial

Prostatic Artery Embolization (PAE)

Usama Nihad Rifat*

Emeritus Professor of Urology, Iraqi Board for Medical Specializations

***Corresponding author:** Usama Nihad Rifat, Emeritus Professor of Urology, Iraqi Board for Medical Specializations

Citation: Rifat UN (2026) Prostatic artery embolization (PAE). J Urol Ren Dis 09: 1447. DOI: 10.29011/2575-7903.001447.

Received Date: 07 April 2026; **Accepted Date:** 08 April 2026; **Published Date:** 08 April 2026

Prostatic Artery Embolization (PAE) is an interesting procedure because of the complex vascular anatomy and the required technical skills. Extensive skill is lacking, and the findings regarding the optimal sizes are controversial.

PAE is a safe and effective treatment option for patients with benign prostatic hyperplasia, with clinical relief comparable to that of prostatic surgery. However, a higher re-intervention rate over time should be considered when counseling patients regarding their treatment options. [1] PAE is a complex interventional radiology procedure that requires extensive technical skills and knowledge of pelvic arterial anatomy. The PA anatomy is highly variable, making each procedure unique. The use of pre-procedural MR or CT angiography is a confirmed option to help guide the procedure. Intraprocedural use of Cone Beam Computed Tomography (CBCT) is also extremely helpful and can help reduce radiation exposure when used instead of digital subtraction angiography. PAE is a validated, minimally invasive treatment option for patients with BPH, and its role as a treatment option is becoming clearer with the accumulation of long-term data [1].

Reviews included the available comparative evidence on the use of PAE for BPH. The collected data showed that PAE might improve symptomatic BPH-LUTS; reduce adverse events and major complications; and provide an alternative option for males with BPH who cannot undergo surgery or have failed medical therapy. Whether PAE is more effective than TURP and OSP(open simple prostatectomy) remains uncertain. PAE is a developing treatment option for patients with symptomatic BPH who cannot undergo surgery or have undergone failed medical therapy. [2] The available evidence suggests that PAE and Prostatic Artery Chemoembolization (PACE) are feasible, effective, and safe techniques for the treatment of urological symptoms with few adverse events in patients with concurrent PCa. However, the curative effect of either PAE or PACE has been shown to be insufficient as a primary treatment of PCa. Both techniques can effectively manage the local symptoms in patients with PCa, such as LUTS, urinary retention, and hematuria, with a low risk of severe adverse events. The role of PAE in PCa management remains uncertain, and further research involving a larger population and well-designed prospective trials is needed to clarify its benefits. Future studies should focus on patient selection criteria, procedural requirements, follow-up, and other factors, with the aim of establishing prostate embolization as a complementary tool in the management of PCa in patients [3].

As for the procedure PAE was performed by an experienced interventional radiologist who was familiar with the procedure. A 16 F transurethral catheter was inserted before the intervention. A unilateral femoral sheath was placed in the right common femoral artery under local anesthesia and the patient had a selective internal iliac arteriogram of the anterior division of both internal iliac arteries by a 5-French catheter (Merit Medical) to identify the prostatic arterial supply. In special anatomical variants, arteriograms of the posterior division or the external iliac artery and their branches were performed. Prostatic vessels were selectively catheterized with a 1.9 French microcatheter (Parkway soft; Asahi Intecc), and subsequent embolization was performed with 250–400 lm Embozene microspheres (Boston Scientific, Natick, Massachusetts, USA) . The primary embolization target was the central gland. Embolization of the peripheral prostate gland was only performed if judged safe, especially in the more advanced T-stages. Cone Beam Computed Tomography (CBCT) was available to guide embolization in challenging cases. If any doubt existed about identifying the small peripheral arteries, especially in very small glands, a CBCT was performed. Together with the pre-interventional MRI as well as a transurethral catheter and the angiographic characteristics of carcinoma blush, embolization without CBCT was performed in cases where the interventionalist was confident regarding the embolization procedure. . PAE seems to be an interesting and safe concept in a palliative patient cohort with limited life expectancy to relief LUTS and improve QoL. Furthermore, predictors which might help to guide patient selection should be identified as was done for PAE in men with LUTS secondary to benign prostatic hyperplasia [4] Prostatic artery embolization has become an important minimally invasive alternative for selected men with benign prostatic obstruction. Its most consistent advantages include a low perioperative morbidity profile and excellent preservation of sexual and ejacula tory

function compared with resective procedures. At the same time, randomized and comparative studies have shown that symptom and flow improvements are generally less than those after TURP or HoLEP, and long-term durability remains a major limitation of PAE. Reintervention rates of up to 20% at 2 years and cumulative failure rates approaching 50% at 5 years in long-term randomized follow-up highlight the need for clear patient counseling regarding the possibility of retreatment. Within a shared decision-making framework, PAE should be considered for patients who prioritize ejaculatory preservation, outpatient management, and perioperative risk reduction, or who are not suitable candidates for resective surgery, provided they endure higher reintervention rates. Optimized embolization materials, standardized imaging and technical protocols, and ongoing research on predictors of durability and cost-effectiveness across healthcare systems will be important to further define the role of PAE in contemporary BPO management.[5] The improvement in LUTS/BPO at 5 yr after PAE was inferior to that achieved with TURP. The limitations of PAE should be considered during patient selection and counselling. PAE shows good long-term results in properly selected patients, although the improvements are less pronounced than with TURP. [6] To conclude, PAE is a new, less invasive procedure that may help with prostatic lesions. Further follow-up is needed to validate its use.

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