

Editorial

Aquablation, another Boost in the Armamentaria for Benign Prostatic Hyperplasia

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Aquablation is not newfound; it was used *ex vivo* in animal models with a new type of water-jet dissector. This was conducted later *in vivo* to be compared with electric cautery section. Afterward its usage in partial nephrectomy was reported [1]. Furthermore, waterjet hydrodissection for removing bladder tumors was also utilized [2]. Gilling et al reported in 2016 the first study of Aquablation in benign prostatic hyperplasia in humans [3]. Aquablation underwent an evaluation leading to FDA approval in December 2017 after it has been shown that it was safe and efficacious in men with prostates between 30 and 80 cc [4].

The advantages of this technique include reduction in resection time compared with other endoscopic methods, as well as the potential to preserve sexual function [5]. As for the procedure, a 24-F hand piece probe similar to a rigid cystoscope is inserted into the prostatic urethra and secured using a bed-mounted rigid arm. Real-time prostate visualization is achieved by the use of bi-plane transrectal ultrasound. The surgeon uses a console to mark the target resection contour. Under the surgeon's control, the ablation of tissue is robotically executed using a high-velocity waterjet to resect adenomatous tissue while avoiding the verumontanum and ejaculatory ducts. Following Aquablation, tissue samples can be collected for histopathology. Post-treatment management is done by inserting a standard urinary catheter, typically left in overnight, with bladder neck traction applied with continuous bladder irrigation [5]. As Gilling reported, most of the patients had their catheters removed on postoperative day 1, and most patients went home on the first postoperative day [5]. There were no blood transfusions and no significant changes in serum sodium. There was a statistically significant improvement in mean IPSS (International Prostate Symptom Score) from 23.1 at baseline to 8.6 at 6 months and Qmax (maximum flow rate) from 8.6 mL/s at baseline to 18.6 mL/s at 6 months. No cases of urinary incontinence or erectile dysfunction were reported [5].

In a 3-month U.S. cohort analysis, Aquablation appears to provide a strong surgical alternative in patients with benign prostatic hyperplasia due to larger prostate volumes. It has good functional outcomes, and relatively short operative time and shorter hospital stay, as well as acceptable complications and transfusions rates [6]. Aquablation clinically normalizes outcomes between patients of the < 100 cc and > 100 cc prostate cohorts. It is safe and effective in patients with large prostate glands (> 100 cc) with a smoother learning curve [7]. The rate of complications according to Clavien-Dindo classification was low (grade 2 or higher was 23%) [8]. Aquablation may be a good alternative for men who wish to maintain their ejaculatory function [9]. Future studies and long-term results from ongoing reports are required to secure aquablation position and acceptance as a true rival to other minimally invasive surgical techniques and the conventional TURP [10].

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